



# **GEOCHEMICAL DATA FROM THE LONG LAKE GROUP, CENTRAL NEWFOUNDLAND**

**J.G. Hinckey**

**Open File 012A/1580**

**St. John's  
Newfoundland and Labrador  
February, 2015**

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## **SUMMARY**

This Open File release consists of whole-rock geochemical data from rock samples collected from the Long Lake group, central Newfoundland (NTS 12A/06 and 12A/10). Samples were collected from outcrop and from diamond-drill cores as part of a mineral deposit study focused on volcanogenic massive sulphide (VMS) potential of the group. The group is host to one defined VMS deposit, the Long Lake deposit, with current indicated reserves of 407 000 tonnes with grades of 7.82 % Zn, 1.58 % Pb, 0.57 % Cu, 49 g/t Ag and 0.57 g/t Au (Keller and Bernier, 2012); as well as numerous other showings and indications. Although this report does not provide an interpretation of the data, the geological context of these rocks, a description of the regional stratigraphy, and a preliminary interpretation of the geochemical data are contained in a report by Hinckley (2014).



## NOTES ON DATABASE

The present release includes locational data, brief sample descriptions, major-element and trace-element data. All of these samples were acquired by the author in 2012 and 2014. The data are tabulated below and are also available in digital format, *i.e.*, comma separate value files (\*.csv file). The samples include field samples from outcrops and samples collected from diamond-drill core housed in the Government core library at Buchan's. Location data for outcrop samples is presented in Universal Transverse Mercator (UTM), eastings and northings (zone 21; NAD27) format in Appendix A, along with brief sample descriptions. Locational data for diamond-drill holes (Appendix C) represents the collar location, with UTM coordinates based on Zone 21 and NAD27. Drillcore sample locations and brief sample descriptions are provided in Appendix B with the geochemical data. Drillcore sample locations are provided as single depths in meters, with sample intervals ranging from 20-40 cm in length.

All analyses were carried out at the GSNL laboratory in St. John's. Major elements were determined by inductively coupled plasma optical emission spectrometry following a lithium tetraborate fusion (ICP-OES). Select trace elements were determined by inductively coupled plasma emission spectrometry following a four acid (HF-HCl-HNO<sub>3</sub>-HClO<sub>4</sub>) total digestion (ICP-ES). The other trace elements were determined by inductively coupled plasma mass spectrometry following a lithium tetraborate fusion (ICP-MS). Analytical method of determination is indicated for each element in Appendix A and B. Where an element was determined by different methods in different analytical years (*e.g.*, Rb and As), both methods are presented in Appendix A and B. Volatiles are reported as loss on ignition (LOI) determined through gravimetric methods.

Note that the release also includes raw, unprocessed data for several standards completed at the Geological Survey of Newfoundland's (GSNL) laboratory (Appendices D, E, and F). These may be used by the reader to assess accuracy. For ICP-OES (major-element) and ICP-MS (trace-element) standards were supplied by the Canadian Certified Reference Materials Project (SCH-1), the United States Geological Survey (AGV-1, BHVO-1, BIR-1, G-2, MAG-1, QLO-1, RGM-1, SDC-1, STM-1, W-2) and the Association Nationale de la Recherche Technique, Paris (DR-N). Two standards were used for ICP-ES (trace-elements) analysis, supplied by the Canadian Certified Reference Materials Project (SY-4, WGB-1). Duplicate analyses (labeled as sample xxx DUP) of selected samples are also included in Appendices D, E, and F, and these can be used to assess precision.

Note that the negative value, -99, reported for a given element indicates that it was not analyzed for in the sample, whereas all other negative numbers indicate the concentration of the specific element in the sample was below the detection limit (*e.g.*, -0.01 indicates the measured value was below the detection limit of 0.01). Major elements are reported in weight percent (wt. %), and trace elements are reported in parts per million (ppm). Detection limits are listed for each element in Appendices A, B, D, E, and F.

In Appendix A and B, values are calculated for the alteration index of Ishikawa *et al.* (1976) (labelled AI in the spreadsheets) and the chlorite-carbonate-pyrite alteration index of Large *et al.* (2001) (labelled CCPI in the spreadsheet). These alteration indexes can be used as a preliminary approximation of alteration intensity whereby higher alteration index numbers may be indicative

of more intensely altered volcanic rocks. Formula for the alteration indexes are:

$$AI = 100 * [(MgO + K_2O) / (MgO + K_2O + Na_2O + CaO)]$$

$$CCPI = 100 * [(MgO + FeOT) / (MgO + FeOT + K_2O + Na_2O)]$$

In addition, Appendix A and B contains a column with the sum of Zr+Hf+Nb+Y displayed as ppm. This sum can be used as an indication of high-field strength enrichment that was used in Hinchey (2014) as a method to divide the felsic volcanic rocks in the Long Lake group into two packages.

The drillholes that provided samples for analyses are archived within the Department of Natural Resources Core-Storage Program.

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**Appendix A: Major- and trace-element data for samples collected from outcrop**

Lab Number	Sample Units	UTMEast	UTMNorth	UTMZone	Datum	Rock Type	SiO <sub>2</sub> wt. %	Al <sub>2</sub> O <sub>3</sub> wt. %	Fe <sub>2</sub> O <sub>3</sub> T wt. %
							ICP-OES	ICP-OES	ICP-OES
							<b>0.01</b>	<b>0.01</b>	<b>0.01</b>
6841272	12JH001	471475	5354590	21	NAD27	felsic volcanic	48.36	15.07	9.97
6841273	12JH002	471421	5354696	21	NAD27	felsic volcanic	49.91	15.14	10.38
6841274	12JH003	472967	5355525	21	NAD27	chlorite altered quartz eye phryic felsic volcanic	49.20	15.74	10.49
6841275	12JH004	473220	5355942	21	NAD27	feldspar phryic rhyolite	83.20	8.63	2.17
6841276	12JH005A	475078	5358350	21	NAD27	feldspar phryic rhyolite	64.49	16.58	4.35
6841277	12JH005B	475078	5358350	21	NAD27	mafic volcanic - basalt	50.13	13.03	14.83
6841278	12JH006	478580	5360446	21	NAD27	feldspar phryic rhyolite	72.04	12.79	5.41
6841279	12JH007	479432	5356921	21	NAD27	coarse grained blue quartz eye phryic felsic volcanic - tuff (?)	73.60	13.02	1.96
6841281	12JH008	478207	5356383	21	NAD27	sericite - silica - pyrite altered felsic volcanic - tuff (?)	67.37	16.60	4.46
6841282	12JH009	480350	5357944	21	NAD27	chlorite altered felsic volcanic	56.66	15.62	7.89
6841283	12JH011	481919	5359885	21	NAD27	chlorite altered intermediate volcanic	57.95	16.05	7.79
6841284	12JH012A01	480087	5358275	21	NAD27	mafic volcanic - basalt	51.13	15.99	9.09
6841285	12JH012A02	480087	5358275	21	NAD27	quartz vein	95.92	1.02	0.58
6841286	12JH012A03	480087	5358275	21	NAD27	felsic volcanic (?)	56.94	19.48	10.97
6841287	12JH012A04	480087	5358275	21	NAD27	mafic volcanic - basalt	54.63	14.09	6.34
6841288	12JH013	482118	5360624	21	NAD27	quartz eye phryic felsic tuff	76.22	12.43	1.58
6841289	12JH014	482694	5361342	21	NAD27	quartz eye phryic sericite-pyrite altered felsic tuff	72.78	13.00	3.84
6841291	12JH015	483568	5361339	21	NAD27	quartz eye phryic felsic tuff	67.99	14.52	5.61
6841292	12JH016	483072	5360917	21	NAD27	quartz eye phryic felsic tuff	59.89	16.16	3.90
6841293	12JH017	484449	5362039	21	NAD27	quartz eye phryic felsic tuff	63.37	15.27	5.05
6841294	12JH018	486660	5363637	21	NAD27	quartz eye phryic felsic tuff	65.88	15.09	4.57
6841295	12JH019A01	484011	5365567	21	NAD27	quartz-feldspar phryic rhyolite	69.94	13.62	5.61
6841296	12JH019A02	484011	5365567	21	NAD27	quartz-feldspar phryic rhyolite with sulphide	55.55	7.60	22.70
6841297	12JH020	486160	5366320	21	NAD27	sericite-silica-pyrite altered quartz-feldspar phryic rhyolite	75.15	10.85	3.70
6841298	12JH021	486122	5366247	21	NAD27	sericite-silica-pyrite altered rhyolite	76.50	12.70	1.25
6841299	12JH022	486834	5366203	21	NAD27	silicified rhyolite	77.04	10.81	1.52
6841301	12JH023	488867	5364380	21	NAD27	sericite-pyrite altered quartz eye phryic felsic tuff	61.69	16.82	6.02
6841302	12JH024	488934	5364281	21	NAD27	sericite-silica-pyrite altered quartz eye phryic felsic tuff	62.77	16.27	3.94
6841303	12JH025	488703	5364648	21	NAD27	quartz-eye phryic rhyolite	77.78	11.58	1.37
6841304	12JH026	490294	5365056	21	NAD27	quartz-feldspar phryic rhyolite	75.67	12.00	1.60
6841305	12JH027	494079	5368383	21	NAD27	quartz-feldspar phryic rhyolite	76.74	12.49	1.69
6841306	12JH028	497070	5370331	21	NAD27	rhyolite	74.94	12.36	1.85
6841307	12JH029	497032	5370460	21	NAD27	silica-sericite-pyrite altered rhyolite	76.76	11.07	3.58
6841308	12JH030	504457	5376638	21	NAD27	intermediate volcanic	59.99	16.59	7.52

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Lab Number	Sample Units	UTMEast	UTMNorth	UTMZone	Datum	Rock Type	SiO <sub>2</sub> Al <sub>2</sub> O <sub>3</sub> Fe <sub>2</sub> O <sub>3</sub> T		
							wt. %	wt. %	wt. %
							ICP-OES	ICP-OES	ICP-OES
							<b>0.01</b>	<b>0.01</b>	<b>0.01</b>
6841309	12JH031	506456	5378599	21	NAD27	quartz-feldspar phryic rhyolite	73.86	13.60	2.85
6841311	12JH032	517753	5386696	21	NAD27	sericite altered rhyolite	46.89	20.21	9.99
6841312	12JH033	490865	5367163	21	NAD27	sericite-silica-pyrite altered rhyolite	77.26	10.81	2.25
6841313	12JH034A01	490601	5366677	21	NAD27	sericite-silica-pyrite altered rhyolite	75.95	12.38	1.83
6841314	12JH034A02	490601	5366677	21	NAD27	mafic volcanic - tuff	61.24	15.02	8.75
6841315	12JH035	489211	5365404	21	NAD27	mafic volcanic - pillow basalt	47.23	14.41	11.17
6841316	12JH036	488249	5364573	21	NAD27	feldspar-quartz phryic rhyolite	69.00	14.77	2.73
6841317	12JH037	487975	5364072	21	NAD27	sericite-silica-pyrite altered felsic tuff	59.26	10.15	14.73
6841318	12JH038A01	487659	5363808	21	NAD27	quartz eye phryic felsic tuff	55.80	17.66	6.11
6841319	12JH038A02	487659	5363808	21	NAD27	pyrite-silica altered quartz eye phryic felsic tuff	52.70	12.68	14.87
6841321	12JH039	487467	5363654	21	NAD27	sericite-pyrite altered quartz eye phryic felsic tuff	58.84	11.09	13.54
6841322	12JH040	487137	5363401	21	NAD27	quartz eye phryic felsic tuff	58.59	17.21	6.14
6841323	12JH041A01	487325	5363322	21	NAD27	quartz eye phryic felsic tuff	60.13	13.84	6.27
6841324	12JH041A02	487325	5363322	21	NAD27	sericite-pyrite altered quartz eye phryic felsic tuff	64.75	13.46	6.29
6841325	12JH042	487402	5363340	21	NAD27	quartz amygdaloidal basalt	48.76	14.21	13.96
6841326	12JH043	487729	5363539	21	NAD27	sericite-silica-pyrite altered quartz eye phryic felsic tuff	71.06	14.04	5.67
6841327	12JH044	486717	5363095	21	NAD27	mafic tuff	51.50	16.27	9.07
6841328	12JH045	483178	5361614	21	NAD27	quartz eye phryic felsic tuff	65.76	14.31	4.76
6841329	12JH046	482839	5362656	21	NAD27	pillow basalt	46.65	14.78	12.37
6841331	12JH047A01	483532	5363344	21	NAD27	quartz vein	98.55	0.78	0.29
6841332	12JH047A02	483532	5363344	21	NAD27	feldspar phryic felsic tuff	75.02	11.75	3.68
6841333	12JH047A03	483532	5363344	21	NAD27	pillow basalt	50.85	14.69	7.57
6841334	12JH048	483621	5363767	21	NAD27	feldspar phryic felsic lapilli tuff	66.12	15.50	4.38
6841335	12JH049A01	485755	5363645	21	NAD27	feldspar-quartz phryic felsic tuff	74.53	15.38	1.07
6841336	12JH049A02	485755	5363645	21	NAD27	quartz vein	98.71	0.48	0.41
6841337	12JH050	487311	5363939	21	NAD27	quartz eye phryic felsic tuff	66.48	15.40	5.07
6841338	12JH051	488539	5365987	21	NAD27	siliceous flow banded rhyolite	76.51	11.39	2.55
6841339	12JH052A01	484495	5366160	21	NAD27	chlorite altered rhyolite	69.96	13.84	3.75
6841341	12JH052A02	484495	5366160	21	NAD27	chlorite-pyrite altered rhyolite	44.07	16.30	20.89
6841342	12JH053	485318	5366398	21	NAD27	feldspar phryic rhyolite	76.90	10.37	3.32
6841343	12JH054	484793	5365881	21	NAD27	basalt	43.09	15.07	10.42
6841344	12JH055	493139	5372838	21	NAD27	intermediate volcanic	49.52	14.10	10.65
6841345	12JH056	493943	5371182	21	NAD27	quartz - feldspar phryic felsic volcanic	73.29	13.30	3.01
6841346	12JH057	494041	5371334	21	NAD27	quartz - feldspar phryic felsic volcanic - rhyolite	69.56	13.58	3.98
6841347	12JH058	494193	5371491	21	NAD27	intermediate volcanic	52.94	14.97	9.09
6841348	12JH059	494466	5371864	21	NAD27	pyrite-sericite-silica altered rhyolite	70.11	13.91	4.59

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Lab Number	Sample Units	UTMEast	UTMNorth	UTMZone	Datum	Rock Type	SiO <sub>2</sub> wt. %	Al <sub>2</sub> O <sub>3</sub> wt. %	Fe <sub>2</sub> O <sub>3</sub> T wt. %
	Analysis Method						ICP-OES	ICP-OES	ICP-OES
	Detection Limit						<b>0.01</b>	<b>0.01</b>	<b>0.01</b>
6841349	12JH060	494018	5370687	21	NAD27	feldspar phryic mafic volcanic	47.29	14.17	13.92
6841757	14JH001	494187	5371523	21	NAD27	quartz eye phryic felsic tuff	54.60	14.86	7.97
6841758	14JH002	494027	5371306	21	NAD27	quartz eye phryic felsic tuff	73.56	13.29	2.50
6841759	14JH003	495059	5370395	21	NAD27	altered rhyolite	78.37	12.05	1.89
6841761	14JH004	497900	5374974	21	NAD27	monzogranite	73.75	13.32	1.84
6841762	14JH005	501437	5376348	21	NAD27	feldspar phryic mafic tuff	51.00	14.71	13.98
6841763	14JH006	501295	5376684	21	NAD27	quartz - feldspar phryic felsic to intermediate tuff	42.55	16.91	8.05
6841764	14JH007	501514	5376279	21	NAD27	very fine grained to aphyric rhyolite	78.41	11.84	0.27
6841765	14JH008	502057	5376833	21	NAD27	feldspar phryic mafic tuff	46.43	15.06	11.13
6841766	14JH009	502731	5377017	21	NAD27	sericite-pyrite-carbonate altered aphyric rhyolite	77.30	11.46	2.54
6841767	14JH010	504983	5375992	21	NAD27	pillow basalt	47.52	15.43	11.30
6841768	14JH011	507786	5379586	21	NAD27	basalt	46.73	15.99	9.64
6841769	14JH012	515508	5382673	21	NAD27	fine grained gabbro	49.04	14.51	13.09
6841771	14JH013	511801	5380371	21	NAD27	feldspar phryic intermediate tuff	59.37	15.88	6.61
6841772	14JH014	511907	5380544	21	NAD27	very fine grained intermediate ash tuff	53.08	19.18	8.38
6841773	14JH015	513780	5377792	21	NAD27	gabbro	47.51	11.82	16.55
6841774	14JH016	512188	5375195	21	NAD27	black shale - siltstone	53.08	6.23	18.54
6841775	14JH017	512105	5375350	21	NAD27	gabbro	47.83	14.06	12.87
6841776	14JH018	512396	5376422	21	NAD27	flow banded rhyolite	75.13	12.03	2.37
6841777	14JH019	512386	5376434	21	NAD27	fine grained volcaniclastic tuff	66.07	14.23	4.94
6841778	14JH022	511888	5376268	21	NAD27	volcaniclastic breccia with andesitic clasts	74.32	13.23	1.49

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**Appendix A: Major- and trace-element data for samples collected from outcrop**

Lab Number	Sample	Fe2O3	FeO	MgO	CaO	Na2O	K2O	TiO2	MnO	P2O5	Cr	Zr	Ba	LOI	Total	V	
		Units	wt. %	ppm	ppm	ppm	wt. %	wt. %	ppm								
		Analysis Method	ICP-OES	Grav		ICP-MS											
		Detection Limit	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	1	1	1	0.01		5	
6841272	12JH001		2.61	7.36	10.36	9.57	2.24	0.15	0.615	0.171	0.046	578	33	39	3.67	100.22	203
6841273	12JH002		3.37	7.00	10.07	6.13	4.03	0.61	0.590	0.199	0.037	702	20	225	3.57	100.67	171
6841274	12JH003		3.20	7.29	9.32	8.20	3.90	0.05	0.614	0.176	0.027	551	13	55	3.07	100.79	208
6841275	12JH004		0.84	1.33	0.78	0.03	4.80	0.14	0.107	0.020	0.006	3	282	22	0.75	100.65	-99
6841276	12JH005A		2.19	2.16	0.90	2.11	6.49	3.91	0.528	0.116	0.185	2	259	643	0.62	100.26	34
6841277	12JH005B		4.80	10.03	4.58	6.46	3.29	1.28	2.962	0.254	0.478	19	210	310	1.81	99.10	362
6841278	12JH006		2.23	3.17	1.37	0.11	6.35	0.23	0.332	0.064	0.049	-1	412	131	1.85	100.60	-5
6841279	12JH007		0.78	1.18	0.27	2.92	4.64	1.26	0.314	0.027	0.060	-1	113	330	2.31	100.37	-99
6841281	12JH008		1.54	2.92	2.91	0.17	1.68	2.70	0.505	0.027	0.043	6	111	399	4.15	100.61	140
6841282	12JH009		2.28	5.61	3.71	8.35	2.82	0.08	0.499	0.139	0.061	27	77	10	3.97	99.81	188
6841283	12JH011		2.51	5.28	4.72	5.82	3.84	0.24	0.559	0.080	0.075	28	91	52	3.73	100.85	164
6841284	12JH012A01		2.66	6.42	4.37	6.09	0.79	2.59	0.504	0.180	0.050	4	39	242	9.46	100.23	222
6841285	12JH012A02		0.16	0.42	0.03	0.02	-0.01	0.19	0.014	0.139	0.006	-1	3	14	0.44	98.17	10
6841286	12JH012A03		2.50	8.47	0.48	0.07	0.16	0.46	0.792	0.008	0.048	10	77	63	9.44	98.84	255
6841287	12JH012A04		1.99	4.35	2.12	7.49	0.94	3.01	0.483	0.142	0.073	25	71	323	9.29	98.60	168
6841288	12JH013		0.65	0.94	0.13	1.09	4.55	1.61	0.235	0.022	0.050	1	105	279	1.31	99.24	32
6841289	12JH014		1.49	2.35	0.42	0.08	2.83	2.76	0.266	0.003	0.017	-1	115	376	2.95	98.94	31
6841291	12JH015		2.02	3.59	2.62	1.51	2.95	1.92	0.434	0.152	0.075	2	104	409	2.49	100.27	114
6841292	12JH016		1.42	2.48	0.73	7.61	1.95	3.54	0.392	0.122	0.069	2	103	430	5.84	100.20	104
6841293	12JH017		1.93	3.12	1.83	3.34	4.37	1.58	0.392	0.087	0.070	-1	116	233	3.70	99.06	95
6841294	12JH018		1.81	2.76	1.51	2.72	4.59	1.75	0.383	0.117	0.060	1	184	410	3.46	100.13	78
6841295	12JH019A01		2.31	3.30	2.02	0.11	6.46	0.19	0.409	0.065	0.061	-1	350	76	1.64	100.13	-99
6841296	12JH019A02		5.27	17.43	3.63	0.01	0.34	0.52	0.221	0.061	0.028	-1	295	186	9.26	99.92	6
6841297	12JH020		1.28	2.42	2.08	0.03	1.82	2.07	0.228	0.084	0.021	-1	366	1714	2.45	98.48	8
6841298	12JH021		0.56	0.69	0.72	0.12	7.34	0.22	0.208	0.043	0.023	-1	312	94	0.73	99.85	-5
6841299	12JH022		0.67	0.85	0.23	0.05	4.37	2.91	0.154	0.024	0.013	-1	291	1109	0.93	98.05	-5
6841301	12JH023		2.00	4.02	4.00	2.47	2.71	1.47	0.350	0.088	0.044	9	40	261	4.51	100.17	200
6841302	12JH024		1.38	2.56	3.33	4.83	3.83	0.98	0.342	0.042	0.044	7	42	393	3.34	99.71	189
6841303	12JH025		0.57	0.80	0.10	0.71	5.30	1.03	0.219	0.036	0.036	-1	142	616	0.96	99.12	6
6841304	12JH026		0.74	0.86	0.34	0.25	1.35	6.78	0.228	0.020	0.033	-1	160	1746	0.80	99.07	-99
6841305	12JH027		0.78	0.91	0.39	0.12	4.96	3.08	0.180	0.045	0.028	3	473	1764	0.73	100.45	11
6841306	12JH028		0.81	1.04	0.62	0.03	6.91	0.37	0.158	0.014	0.015	-1	297	141	1.02	98.28	-5
6841307	12JH029		1.28	2.30	1.09	0.02	1.92	2.32	0.165	0.020	0.017	-1	352	1320	2.38	99.34	-5
6841308	12JH030		2.99	4.53	3.10	0.40	3.43	3.32	0.976	0.121	0.136	83	282	827	4.39	99.97	116

**Open File 012A/1580**  
**Appendix A: Major- and trace-element data for samples collected from outcrop**

Lab Number	Sample	Fe2O3	FeO	MgO	CaO	Na2O	K2O	TiO2	MnO	P2O5	Cr	Zr	Ba	LOI	Total	V
		Units	wt. %	ppm	ppm	ppm	wt. %	wt. %	ppm							
	Analysis Method	ICP-OES	Grav		ICP-MS											
	Detection Limit	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	1	1	1	0.01		5
6841309	12JH031	1.26	1.59	0.60	0.28	5.91	1.65	0.366	0.070	0.040	1	347	959	1.29	100.52	20
6841311	12JH032	4.00	5.99	4.71	3.14	5.01	2.60	0.804	0.156	0.103	-1	39	487	4.44	98.05	403
6841312	12JH033	0.89	1.36	1.23	0.05	4.69	0.97	0.137	0.066	0.010	-1	316	881	1.48	98.95	-5
6841313	12JH034A01	0.79	1.03	1.28	0.09	5.19	1.96	0.285	0.054	0.046	-1	270	832	1.47	100.54	-5
6841314	12JH034A02	3.47	5.27	3.47	1.82	6.30	0.33	1.400	0.201	0.576	-1	235	111	1.79	100.91	137
6841315	12JH035	3.68	7.49	10.06	5.07	2.35	2.60	0.597	0.228	0.146	285	39	491	4.16	98.03	342
6841316	12JH036	1.29	1.43	0.47	0.62	4.47	4.58	0.355	0.027	0.065	-1	189	1018	1.31	98.40	35
6841317	12JH037	4.10	10.63	3.36	1.05	1.83	0.51	0.475	1.600	0.509	72	114	326	6.87	100.36	430
6841318	12JH038A01	2.12	3.99	4.83	4.46	4.48	0.64	0.445	0.097	0.035	6	34	126	4.76	99.32	238
6841319	12JH038A02	5.04	9.83	2.66	1.66	4.50	0.48	0.529	0.057	0.074	18	122	111	8.44	98.64	298
6841321	12JH039	3.71	9.83	5.22	0.76	1.44	0.76	0.532	0.215	0.535	101	131	164	7.09	100.03	774
6841322	12JH040	2.01	4.13	3.57	5.88	3.40	0.81	0.402	0.118	0.066	3	47	260	2.82	99.00	162
6841323	12JH041A01	1.94	4.33	3.55	3.11	1.14	2.33	0.394	0.130	0.056	11	51	521	6.33	97.28	158
6841324	12JH041A02	1.88	4.42	4.06	0.72	0.66	2.10	0.353	0.073	0.054	8	46	539	5.53	98.05	137
6841325	12JH042	3.26	10.71	5.01	7.87	1.17	0.13	2.365	0.212	0.329	9	188	18	4.76	98.79	288
6841326	12JH043	1.92	3.75	0.37	0.04	0.39	3.49	0.371	0.006	0.022	6	52	1312	4.68	100.13	157
6841327	12JH044	3.24	5.83	2.72	6.13	4.85	0.89	0.721	0.218	0.140	-1	40	245	6.31	98.80	148
6841328	12JH045	1.53	3.23	3.14	4.00	2.99	0.58	0.387	0.042	0.056	3	87	160	2.34	98.37	106
6841329	12JH046	3.74	8.63	7.05	8.17	3.69	0.31	2.256	0.181	0.234	156	140	204	2.90	98.59	341
6841331	12JH047A01	0.08	0.21	0.13	0.07	-0.01	0.13	0.024	0.009	0.005	-1	18	24	0.26	99.63	-5
6841332	12JH047A02	1.54	2.14	0.48	0.88	5.53	1.08	0.398	0.024	0.066	5	172	495	0.64	99.55	23
6841333	12JH047A03	2.68	4.89	7.95	7.91	5.12	0.52	0.812	0.164	0.104	369	56	182	4.67	100.36	208
6841334	12JH048	2.02	2.36	1.46	1.40	6.57	2.18	0.681	0.163	0.170	-1	288	754	1.25	99.88	7
6841335	12JH049A01	0.44	0.64	0.26	0.52	3.14	3.10	0.065	0.016	0.014	-1	64	1420	1.96	100.07	7
6841336	12JH049A02	0.11	0.29	0.01	0.01	0.02	0.07	0.003	0.002	0.003	-1	2	33	0.27	99.98	-5
6841337	12JH050	2.09	2.98	1.91	1.26	5.27	1.62	0.371	0.105	0.053	2	104	460	2.55	100.09	-99
6841338	12JH051	1.12	1.43	0.10	0.12	6.12	1.17	0.167	0.023	0.019	4	297	346	0.31	98.47	-5
6841339	12JH052A01	1.59	2.16	2.41	0.61	6.89	0.21	0.542	0.103	0.119	-1	419	110	1.56	100.00	10
6841341	12JH052A02	6.37	14.52	6.09	0.44	4.14	0.10	2.496	0.364	0.323	27	201	33	5.72	100.93	472
6841342	12JH053	1.34	1.98	0.92	0.07	5.78	0.17	0.212	0.129	0.008	-1	525	37	1.49	99.38	-5
6841343	12JH054	3.54	6.88	4.96	10.66	4.61	0.97	1.589	0.213	0.176	177	88	163	7.77	99.52	305
6841344	12JH055	3.59	7.07	4.35	6.68	4.78	0.31	1.505	0.206	0.170	42	95	240	7.47	99.75	270
6841345	12JH056	1.18	1.83	1.20	2.12	5.10	0.63	0.317	0.036	0.048	-1	103	110	1.71	100.76	48
6841346	12JH057	1.51	2.47	1.70	2.57	4.67	0.80	0.397	0.043	0.061	2	99	175	2.07	99.43	64
6841347	12JH058	3.21	5.88	6.42	4.06	5.16	0.35	1.146	0.168	0.080	150	122	76	4.67	99.06	227
6841348	12JH059	2.00	2.59	0.97	0.56	6.26	1.31	0.448	0.025	0.150	-1	98	772	2.62	100.95	58

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**Appendix A: Major- and trace-element data for samples collected from outcrop**

Lab Number	Sample	Fe2O3	FeO	MgO	CaO	Na2O	K2O	TiO2	MnO	P2O5	Cr	Zr	Ba	LOI	Total	V
		Units	wt. %	ppm	ppm	ppm	wt. %	wt. %	ppm							
		Analysis Method	ICP-OES	Grav		ICP-MS										
Detection Limit		0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	1	1	1	0.01		5
6841349	12JH060	4.96	8.96	4.01	6.75	5.71	0.24	2.653	0.271	0.354	2	98	48	5.32	100.70	282
6841757	14JH001	1.80	5.56	5.65	3.75	5.41	0.52	1.007	0.134	0.099	119	133	92	4.28	98.29	231
6841758	14JH002	0.56	1.75	1.65	0.88	5.13	0.75	0.386	0.029	0.061	3	108	187	1.49	99.72	64
6841759	14JH003	0.78	1.11	0.63	0.27	6.06	0.21	0.153	0.028	0.010	1	364	118	0.76	100.42	11
6841761	14JH004	0.61	1.10	0.69	1.82	4.79	1.03	0.255	0.021	0.040	-1	141	174	1.77	99.32	21
6841762	14JH005	5.62	7.53	4.68	2.26	5.41	0.06	2.135	0.241	0.245	6	177	41	4.38	99.11	436
6841763	14JH006	0.74	6.58	3.31	9.85	6.01	0.35	0.617	0.282	0.037	-1	27	80	10.40	98.37	260
6841764	14JH007	0.12	0.15	0.06	0.06	6.54	0.39	0.089	0.001	0.021	-1	84	56	0.50	98.19	-5
6841765	14JH008	1.79	8.41	7.06	4.94	4.22	-0.01	1.320	0.256	0.132	50	70	135	7.58	98.13	302
6841766	14JH009	0.01	2.28	1.11	0.10	4.85	0.51	0.223	0.018	0.043	4	117	115	1.69	99.86	21
6841767	14JH010	3.91	6.66	6.91	8.64	3.68	0.24	1.887	0.170	0.235	157	125	38	3.08	99.09	331
6841768	14JH011	2.07	6.81	10.46	5.71	4.06	0.33	0.982	0.162	0.092	242	51	496	5.38	99.55	270
6841769	14JH012	0.75	11.11	7.86	5.11	4.31	-0.01	1.683	0.260	0.155	50	104	108	3.48	99.48	379
6841771	14JH013	1.75	4.38	2.81	3.33	6.45	0.48	1.099	0.198	0.495	1	263	126	3.65	100.36	40
6841772	14JH014	5.28	2.79	2.16	2.17	5.82	2.49	1.312	0.101	0.832	2	295	424	2.77	98.29	30
6841773	14JH015	5.72	9.74	5.89	6.06	3.32	0.11	2.546	0.301	0.221	3	174	95	3.85	98.18	528
6841774	14JH016	7.10	10.30	2.74	3.11	-0.01	0.42	0.311	6.980	0.398	61	66	879	7.47	99.29	302
6841775	14JH017	2.29	9.52	7.18	9.89	2.94	-0.01	1.652	0.199	0.131	83	90	20	2.47	99.22	426
6841776	14JH018	0.09	2.05	1.15	0.41	4.62	2.48	0.234	0.048	0.043	-1	87	646	0.85	99.36	38
6841777	14JH019	2.01	2.64	2.10	0.39	5.54	0.81	0.301	0.088	0.077	-1	126	389	2.64	97.18	60
6841778	14JH022	0.14	1.22	0.50	1.11	6.48	0.41	0.279	0.028	0.069	-1	55	147	1.37	99.29	19

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**Appendix A: Major- and trace-element data for samples collected from outcrop**

Lab Number	Sample Units	Co	Ga	Ge	As	As	Rb	Rb	Sr	Y	Nb	Mo	Cd	In	Sn	Cs	La	Ce
		ppm																
		ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-ES	ICP-MS	ICP-ES	ICP-MS									
Detection Limit		1	1	1	5	2	2	1	2	1	0.5	2	0.2	0.2	1	0.5	0.5	0.1
6841272	12JH001	35	12	3	-5	-99	2	-99	210	14	1.6	-2	-0.2	-0.2	-1	-0.5	2.6	6.3
6841273	12JH002	31	9	2	-5	-99	4	-99	129	11	1.0	-2	-0.2	-0.2	-1	-0.5	1.0	3.1
6841274	12JH003	30	9	2	-5	-99	-2	-99	85	9	-0.5	-2	-0.2	-0.2	-1	-0.5	-0.5	1.6
6841275	12JH004	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99
6841276	12JH005A	3	17	4	-5	-99	66	-99	141	24	12.2	2	-0.2	-0.2	2	-0.5	69.7	130.9
6841277	12JH005B	41	17	4	-5	-99	55	-99	202	43	6.8	-2	0.3	-0.2	1	0.5	16.4	40.4
6841278	12JH006	1	20	2	5	-99	3	-99	56	60	7.1	7	-0.2	-0.2	2	-0.5	12.6	28.1
6841279	12JH007	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99
6841281	12JH008	5	15	2	-5	-99	22	-99	65	22	4.0	-2	-0.2	-0.2	1	-0.5	10.3	21.7
6841282	12JH009	22	12	2	-5	-99	2	-99	194	18	2.8	-2	-0.2	-0.2	1	-0.5	5.9	13.0
6841283	12JH011	19	12	2	-5	-99	4	-99	187	20	2.7	-2	-0.2	-0.2	1	-0.5	7.5	15.7
6841284	12JH012A01	23	13	2	-5	-99	18	-99	52	13	1.3	-2	-0.2	-0.2	1	-0.5	3.2	7.0
6841285	12JH012A02	2	1	1	-5	-99	-2	-99	2	2	-0.5	-2	-0.2	-0.2	-1	-0.5	-0.5	0.7
6841286	12JH012A03	21	8	2	-5	-99	4	-99	13	18	1.8	-2	-0.2	-0.2	2	-0.5	5.4	12.9
6841287	12JH012A04	16	11	2	-5	-99	20	-99	63	17	1.5	-2	-0.2	-0.2	-1	-0.5	5.8	12.3
6841288	12JH013	2	10	2	-5	-99	13	-99	70	18	2.2	-2	-0.2	-0.2	-1	-0.5	10.3	19.4
6841289	12JH014	4	11	2	6	-99	22	-99	29	26	2.3	-2	-0.2	-0.2	-1	-0.5	8.6	18.9
6841291	12JH015	13	14	2	-5	-99	19	-99	80	22	4.3	-2	-0.2	-0.2	1	-0.5	9.7	20.2
6841292	12JH016	5	17	3	-5	-99	34	-99	158	22	5.2	-2	-0.2	-0.2	1	-0.5	8.9	18.3
6841293	12JH017	9	13	3	-5	-99	18	-99	120	23	3.1	-2	-0.2	-0.2	1	-0.5	11.0	21.7
6841294	12JH018	8	14	2	-5	-99	29	-99	71	19	2.6	-2	-0.2	-0.2	1	-0.5	9.0	19.5
6841295	12JH019A01	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	
6841296	12JH019A02	31	27	4	37	-99	6	-99	3	56	4.7	92	-0.2	-0.2	5	-0.5	16.9	36.9
6841297	12JH020	-1	17	2	7	-99	31	-99	23	53	5.8	4	-0.2	-0.2	2	-0.5	17.5	38.7
6841298	12JH021	-1	13	2	-5	-99	3	-99	47	48	6.2	-2	-0.2	-0.2	1	-0.5	18.0	38.8
6841299	12JH022	-1	11	1	18	-99	24	-99	31	42	5.3	-2	-0.2	-0.2	2	-0.5	10.5	22.2
6841301	12JH023	12	16	2	22	-99	29	-99	143	10	1.6	-2	-0.2	-0.2	-1	0.6	4.2	6.8
6841302	12JH024	9	18	2	53	-99	21	-99	179	15	0.8	-2	-0.2	-0.2	1	-0.5	6.8	12.8
6841303	12JH025	1	13	2	34	-99	19	-99	53	13	4.0	-2	-0.2	-0.2	1	-0.5	24.1	43.2
6841304	12JH026	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	
6841305	12JH027	-1	24	3	11	-99	30	-99	22	87	7.8	-2	0.2	-0.2	5	-0.5	51.7	106.7
6841306	12JH028	2	20	3	-5	-99	5	-99	34	81	8.8	-2	-0.2	-0.2	2	-0.5	36.3	76.4
6841307	12JH029	-1	25	2	10	-99	46	-99	16	78	6.6	-2	-0.2	-0.2	1	-0.5	30.8	65.9
6841308	12JH030	9	21	3	18	-99	74	-99	34	25	12.1	-2	-0.2	-0.2	2	0.6	4.8	12.2

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**Appendix A: Major- and trace-element data for samples collected from outcrop**

Lab Number	Sample	Co	Ga	Ge	As	As	Rb	Rb	Sr	Y	Nb	Mo	Cd	In	Sn	Cs	La	Ce
	Units	ppm																
	Analysis Method	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-ES	ICP-MS	ICP-ES	ICP-MS									
	Detection Limit	1	1	1	5	2	2	1	2	0.5	2	0.2	0.2	1	0.5	0.5	0.1	
6841309	12JH031	2	29	3	6	-99	42	-99	81	88	12.5	-2	-0.2	-0.2	4	-0.5	28.7	65.0
6841311	12JH032	31	19	4	-5	-99	34	-99	197	17	1.8	-2	-0.2	-0.2	-1	0.5	3.0	7.7
6841312	12JH033	-1	16	2	9	-99	22	-99	56	59	10.3	-2	-0.2	-0.2	1	-0.5	10.3	27.2
6841313	12JH034A01	-1	17	2	17	-99	29	-99	30	49	7.0	3	0.2	-0.2	2	-0.5	26.6	58.4
6841314	12JH034A02	14	18	4	24	-99	11	-99	97	70	5.6	-2	-0.2	-0.2	2	-0.5	21.9	51.4
6841315	12JH035	53	15	4	6	-99	125	-99	194	19	4.0	-2	-0.2	-0.2	1	5.6	13.8	29.3
6841316	12JH036	4	17	2	-5	-99	107	-99	30	18	5.6	-2	0.3	-0.2	-1	0.7	29.0	51.0
6841317	12JH037	46	18	5	194	-99	12	-99	44	59	10.6	2	0.4	-0.2	3	-0.5	24.7	53.9
6841318	12JH038A01	16	15	2	22	-99	11	-99	222	17	1.1	-2	-0.2	-0.2	1	-0.5	4.3	10.1
6841319	12JH038A02	17	15	3	131	-99	7	-99	152	30	5.9	27	-0.2	-0.2	1	-0.5	12.7	23.1
6841321	12JH039	61	18	4	94	-99	12	-99	39	49	10.4	4	0.5	0.3	3	-0.5	36.8	70.6
6841322	12JH040	10	14	2	14	-99	11	-99	133	13	1.2	-2	-0.2	-0.2	-1	-0.5	5.8	11.6
6841323	12JH041A01	14	15	3	17	-99	35	-99	60	15	4.8	-2	-0.2	-0.2	1	-0.5	33.4	70.9
6841324	12JH041A02	14	14	2	89	-99	33	-99	38	9	2.9	-2	0.4	-0.2	1	-0.5	15.9	32.8
6841325	12JH042	58	23	4	9	-99	2	-99	321	29	20.1	-2	-0.2	-0.2	2	-0.5	17.3	39.3
6841326	12JH043	17	13	1	53	-99	50	-99	31	12	2.0	2	-0.2	-0.2	1	0.5	6.1	11.6
6841327	12JH044	16	15	2	-5	-99	11	-99	81	25	2.5	-2	-0.2	-0.2	-1	-0.5	5.7	13.5
6841328	12JH045	8	13	1	-5	-99	5	-99	122	19	3.3	-2	-0.2	-0.2	1	-0.5	8.7	18.0
6841329	12JH046	39	18	3	-5	-99	4	-99	264	37	3.6	-2	0.2	-0.2	2	-0.5	6.2	18.2
6841331	12JH047A01	1	1	1	-5	-99	9	-99	7	4	2.5	-2	0.8	-0.2	-1	-0.5	2.1	3.8
6841332	12JH047A02	4	12	1	-5	-99	17	-99	111	42	10.1	-2	-0.2	-0.2	-1	-0.5	19.4	42.7
6841333	12JH047A03	42	14	2	-5	-99	11	-99	193	17	2.1	-2	-0.2	-0.2	-1	-0.5	4.8	12.5
6841334	12JH048	2	24	2	-5	-99	18	-99	80	66	6.8	-2	-0.2	-0.2	2	-0.5	28.5	62.4
6841335	12JH049A01	1	22	2	-5	-99	47	-99	165	3	2.6	-2	-0.2	-0.2	-1	-0.5	8.1	15.9
6841336	12JH049A02	-1	1	1	-5	-99	10	-99	2	-1	1.6	-2	0.6	-0.2	-1	-0.5	-0.5	-0.1
6841337	12JH050	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	
6841338	12JH051	-1	19	1	-5	-99	11	-99	28	61	7.8	-2	-0.2	-0.2	2	-0.5	24.3	51.9
6841339	12JH052A01	5	25	3	16	-99	3	-99	90	82	9.7	-2	-0.2	-0.2	3	-0.5	28.0	75.5
6841341	12JH052A02	27	33	4	11	-99	2	-99	41	50	7.9	4	-0.2	0.4	7	-0.5	7.0	21.2
6841342	12JH053	-1	22	2	6	-99	2	-99	42	88	14.4	-2	-0.2	-0.2	3	-0.5	23.8	53.1
6841343	12JH054	37	18	3	-5	-99	18	-99	223	28	2.6	-2	-0.2	-0.2	1	-0.5	7.0	17.3
6841344	12JH055	33	16	2	6	-99	7	-99	135	23	4.0	-2	-0.2	-0.2	1	-0.5	7.1	16.7
6841345	12JH056	5	11	1	-5	-99	7	-99	183	18	4.2	-2	-0.2	-0.2	1	-0.5	11.7	22.2
6841346	12JH057	6	11	2	-5	-99	10	-99	166	17	4.0	-2	-0.2	-0.2	1	-0.5	10.3	21.5
6841347	12JH058	23	18	3	-5	-99	4	-99	168	30	2.1	-2	-0.2	-0.2	2	-0.5	7.7	16.8
6841348	12JH059	11	14	1	-5	-99	19	-99	32	31	3.6	3	-0.2	-0.2	1	-0.5	5.6	12.7

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**Appendix A: Major- and trace-element data for samples collected from outcrop**

Lab Number	Sample	Co	Ga	Ge	As	As	Rb	Rb	Sr	Y	Nb	Mo	Cd	In	Sn	Cs	La	Ce
	Units	ppm																
	Analysis Method	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-ES	ICP-MS	ICP-ES	ICP-MS									
	Detection Limit	1	1	1	5	2	2	1	2	0.5	2	0.2	0.2	1	0.5	0.5	0.1	
6841349	12JH060	26	16	2	-5	-99	4	-99	61	28	2.5	-2	-0.2	-0.2	1	-0.5	10.4	24.4
6841757	14JH001	26	18	3	-99	3	-99	12	166	37	2.4	-2	-0.2	-99	2	-0.5	14.1	27.9
6841758	14JH002	9	12	2	-99	2	-99	15	103	19	4.1	-2	-0.2	-99	1	-0.5	15.6	27.8
6841759	14JH003	3	17	3	-99	3	-99	11	71	78	9.0	3	-0.2	-99	1	-0.5	40.9	84.3
6841761	14JH004	3	14	2	-99	2	-99	20	225	23	7.5	2	-0.2	-99	1	-0.5	18.9	34.8
6841762	14JH005	40	26	4	-99	2	-99	8	64	48	6.3	-2	-0.2	-99	1	-0.5	15.6	36.5
6841763	14JH006	20	13	2	-99	13	-99	12	162	13	1.5	-2	-0.2	-99	-1	-0.5	4.3	7.7
6841764	14JH007	-1	9	1	-99	2	-99	10	42	37	3.7	2	-0.2	-99	-1	-0.5	16.0	33.0
6841765	14JH008	38	18	3	-99	4	-99	7	108	21	2.6	-2	-0.2	-99	1	-0.5	6.3	13.2
6841766	14JH009	1	11	2	-99	2	-99	12	31	32	3.5	2	-0.2	-99	1	-0.5	11.7	24.5
6841767	14JH010	36	19	2	-99	2	-99	8	271	36	4.0	-2	-0.2	-99	1	-0.5	9.9	23.2
6841768	14JH011	44	15	3	-99	2	-99	13	234	22	3.6	-2	-0.2	-99	1	-0.5	5.4	9.4
6841769	14JH012	50	18	4	-99	10	-99	7	160	28	3.1	2	-0.2	-99	1	-0.5	7.5	16.5
6841771	14JH013	6	24	4	-99	2	-99	14	112	75	5.8	-2	-0.2	-99	2	-0.5	25.5	58.1
6841772	14JH014	4	28	5	-99	3	-99	44	136	112	6.5	-2	-0.2	-99	3	1.3	29.0	59.2
6841773	14JH015	40	22	4	-99	-2	-99	13	372	52	4.0	-2	-0.2	-99	1	3.0	9.8	24.1
6841774	14JH016	19	15	8	-99	101	-99	23	42	52	7.6	2	-0.2	-99	2	7.5	43.5	69.6
6841775	14JH017	46	19	3	-99	2	-99	6	163	30	2.6	-2	-0.2	-99	1	-0.5	6.4	13.0
6841776	14JH018	4	12	1	-99	2	-99	16	74	32	4.6	3	-0.2	-99	1	-0.5	11.8	21.7
6841777	14JH019	3	19	2	-99	-2	-99	14	148	41	3.9	4	-0.2	-99	-1	-0.5	13.0	28.8
6841778	14JH022	2	7	1	-99	-2	-99	5	320	16	2.2	-2	-0.2	-99	1	-0.5	7.4	14.1

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**Appendix A: Major- and trace-element data for samples collected from outcrop**

Lab Number	Sample	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Tl
	Units	ppm															
	Analysis Method	ICP-MS															
	Detection Limit	0.05	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.05	0.2	0.5	1	0.1
6841272	12JH001	0.88	4.7	1.4	0.62	2.2	0.4	2.8	0.6	1.9	0.27	1.9	0.29	1.0	-0.5	-1	-0.1
6841273	12JH002	0.49	3.1	1.1	0.46	1.8	0.3	2.2	0.5	1.5	0.23	1.6	0.23	0.7	-0.5	-1	-0.1
6841274	12JH003	0.30	1.9	0.8	0.36	1.3	0.3	1.8	0.4	1.2	0.17	1.4	0.19	0.4	-0.5	-1	-0.1
6841275	12JH004	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99
6841276	12JH005A	14.22	50.5	8.5	1.61	7.4	0.9	5.0	0.9	2.7	0.40	2.7	0.40	5.4	0.8	-1	-0.1
6841277	12JH005B	5.57	27.7	7.4	2.40	8.7	1.3	8.7	1.7	5.2	0.76	4.7	0.68	4.8	1.0	-1	-0.1
6841278	12JH006	3.65	17.7	5.2	0.92	7.2	1.4	10.4	2.3	7.5	1.18	8.5	1.21	9.8	0.6	-1	-0.1
6841279	12JH007	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99
6841281	12JH008	2.49	10.7	2.3	0.68	3.0	0.5	3.4	0.8	2.4	0.40	2.7	0.39	2.9	0.8	6	-0.1
6841282	12JH009	1.63	7.4	1.9	0.50	2.5	0.4	3.0	0.6	2.0	0.30	2.3	0.33	2.0	-0.5	-1	-0.1
6841283	12JH011	1.97	8.5	2.5	0.53	3.1	0.5	3.6	0.7	2.4	0.33	2.5	0.38	2.2	-0.5	-1	-0.1
6841284	12JH012A01	0.91	4.5	1.4	0.50	1.8	0.3	2.3	0.5	1.6	0.22	1.6	0.23	1.0	-0.5	-1	-0.1
6841285	12JH012A02	0.07	0.4	0.1	-0.05	0.2	-0.1	0.3	-0.1	0.2	-0.05	0.2	-0.05	-0.2	-0.5	-1	-0.1
6841286	12JH012A03	1.71	7.8	2.2	0.55	2.8	0.5	3.1	0.7	2.2	0.30	2.2	0.33	1.9	-0.5	-1	-0.1
6841287	12JH012A04	1.61	7.0	2.1	0.50	2.4	0.4	2.7	0.6	1.9	0.27	2.0	0.30	1.7	-0.5	-1	-0.1
6841288	12JH013	2.45	10.1	2.5	0.53	2.7	0.5	3.0	0.6	2.0	0.33	2.6	0.38	2.6	-0.5	-1	-0.1
6841289	12JH014	2.30	9.9	2.6	0.55	3.2	0.5	4.1	0.9	3.0	0.44	3.4	0.50	3.0	-0.5	-1	-0.1
6841291	12JH015	2.50	10.4	2.6	0.68	3.2	0.5	3.9	0.8	2.5	0.38	3.0	0.45	2.9	0.7	1	-0.1
6841292	12JH016	2.36	9.5	2.3	0.73	2.8	0.5	3.8	0.8	2.8	0.40	3.0	0.47	3.0	0.7	1	-0.1
6841293	12JH017	2.62	10.8	2.9	0.73	3.2	0.6	3.7	0.8	2.6	0.40	3.1	0.48	3.3	0.5	2	-0.1
6841294	12JH018	2.43	9.8	2.5	0.68	2.8	0.5	3.3	0.7	2.5	0.36	2.7	0.45	4.9	-0.5	2	-0.1
6841295	12JH019A01	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99
6841296	12JH019A02	4.88	21.8	5.9	1.13	8.1	1.4	9.7	2.0	6.3	0.93	6.5	0.96	6.7	-0.5	1	-0.1
6841297	12JH020	4.96	20.5	5.5	0.97	6.7	1.2	8.9	1.9	6.4	0.98	7.3	1.10	8.4	-0.5	1	-0.1
6841298	12JH021	4.83	21.3	4.8	0.88	5.8	1.1	7.7	1.7	5.5	0.79	6.2	0.88	6.9	-0.5	-1	-0.1
6841299	12JH022	2.64	11.2	3.2	0.68	4.3	0.9	6.7	1.5	4.9	0.75	5.1	0.79	6.5	-0.5	-1	-0.1
6841301	12JH023	0.73	3.4	0.9	0.47	1.1	0.2	1.4	0.3	1.1	0.16	1.2	0.22	1.2	-0.5	-1	0.1
6841302	12JH024	1.49	5.8	1.8	0.85	2.1	0.4	2.4	0.5	1.8	0.23	2.0	0.33	1.4	-0.5	-1	0.1
6841303	12JH025	4.63	14.6	3.1	0.63	2.4	0.3	2.4	0.5	1.5	0.24	2.1	0.30	4.2	-0.5	-1	-0.1
6841304	12JH026	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99
6841305	12JH027	12.90	54.8	12.5	2.13	13.5	2.4	16.8	3.6	11.0	1.56	11.0	1.70	14.0	-0.5	-1	-0.1
6841306	12JH028	9.31	39.9	10.3	1.57	11.8	2.2	14.5	3.0	9.4	1.37	9.3	1.47	9.3	0.6	-1	-0.1
6841307	12JH029	8.12	37.8	8.5	1.54	11.4	1.8	13.0	2.5	8.2	1.12	8.7	1.36	9.9	-0.5	-1	0.3
6841308	12JH030	1.70	8.1	3.2	0.78	3.2	0.6	4.0	1.0	3.2	0.50	3.8	0.55	7.6	0.9	2	-0.1

**Open File 012A/1580**  
**Appendix A: Major- and trace-element data for samples collected from outcrop**

Lab Number	Sample	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Tl	
		Units	ppm															
		Analysis Method	ICP-MS															
	Detection Limit	0.05	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.05	0.2	0.5	1	0.1	
13	6841309	12JH031	8.29	36.3	9.0	2.55	10.9	2.1	14.1	2.9	9.5	1.40	10.1	1.45	10.9	1.0	3	0.3
	6841311	12JH032	1.20	5.9	1.5	0.92	2.4	0.4	3.0	0.6	1.7	0.25	1.8	0.26	1.2	-0.5	-1	0.1
	6841312	12JH033	3.22	14.0	4.0	0.85	6.6	1.4	9.3	1.8	6.8	0.95	6.7	1.16	8.9	8.8	2	0.3
	6841313	12JH034A01	7.24	29.5	6.9	1.39	7.6	1.3	8.5	1.8	6.0	0.90	6.3	0.94	7.4	-0.5	1	-0.1
	6841314	12JH034A02	7.75	36.8	10.3	2.53	11.6	1.9	12.9	2.7	8.3	1.22	8.3	1.29	7.0	0.7	-1	-0.1
	6841315	12JH035	3.59	15.6	3.6	1.07	3.8	0.6	3.5	0.7	2.1	0.27	1.8	0.28	1.4	-0.5	1	0.8
	6841316	12JH036	5.38	18.3	3.4	0.87	3.2	0.5	3.0	0.6	2.0	0.34	2.4	0.42	5.6	-0.5	1	-0.1
	6841317	12JH037	6.81	27.8	5.3	1.34	6.4	1.2	8.9	2.0	6.4	0.90	5.7	0.89	3.1	-0.5	5	-0.1
	6841318	12JH038A01	1.32	6.7	1.9	0.61	2.4	0.4	3.0	0.7	2.0	0.30	2.3	0.38	1.3	-0.5	-1	-0.1
	6841319	12JH038A02	2.87	11.4	2.7	0.59	3.4	0.6	4.3	1.0	3.3	0.57	4.0	0.59	3.6	-0.5	-1	-0.1
	6841321	12JH039	9.36	37.9	8.0	1.96	8.1	1.3	8.3	1.7	5.4	0.74	4.9	0.69	3.0	0.7	3	-0.1
	6841322	12JH040	1.31	5.8	1.5	0.48	2.0	0.3	2.2	0.5	1.7	0.25	1.7	0.28	1.2	-0.5	-1	-0.1
	6841323	12JH041A01	8.93	38.2	8.8	1.56	6.3	0.7	3.3	0.6	1.8	0.26	1.8	0.29	1.4	1.0	3	0.4
	6841324	12JH041A02	3.97	18.0	3.7	0.96	3.1	0.4	1.9	0.4	1.0	0.16	1.3	0.20	1.4	0.7	2	0.2
	6841325	12JH042	5.27	24.2	6.3	1.99	6.6	1.0	6.2	1.2	3.3	0.43	2.8	0.41	4.4	1.8	1	0.1
	6841326	12JH043	1.39	5.3	1.4	0.44	1.9	0.3	1.9	0.4	1.4	0.20	1.5	0.23	1.4	-0.5	1	-0.1
	6841327	12JH044	1.89	9.6	2.6	1.13	3.8	0.7	4.5	0.9	2.9	0.41	2.8	0.40	1.2	-0.5	1	-0.1
	6841328	12JH045	2.10	9.4	2.2	0.66	2.9	0.5	3.3	0.7	2.2	0.35	2.4	0.39	2.4	-0.5	-1	-0.1
	6841329	12JH046	3.00	16.4	5.1	1.71	6.5	1.1	7.1	1.4	4.4	0.59	4.2	0.59	3.4	0.7	-1	-0.1
	6841331	12JH047A01	0.39	1.6	0.3	0.14	0.6	-0.1	0.6	0.1	0.4	0.06	0.6	0.06	0.8	-0.5	5	-0.1
	6841332	12JH047A02	5.10	22.7	5.1	1.32	6.4	1.1	6.7	1.4	4.5	0.62	5.0	0.74	5.1	2.4	3	0.4
	6841333	12JH047A03	1.75	8.4	2.8	0.85	2.8	0.5	2.8	0.6	1.9	0.27	1.9	0.28	1.6	-0.5	-1	-0.1
	6841334	12JH048	8.43	37.9	8.4	2.65	10.9	1.7	11.8	2.4	7.6	1.12	7.9	1.13	8.3	-0.5	-1	-0.1
	6841335	12JH049A01	1.75	6.6	1.3	0.48	0.9	-0.1	0.4	-0.1	0.2	-0.05	0.2	0.06	2.5	-0.5	2	-0.1
	6841336	12JH049A02	-0.05	-0.1	-0.1	-0.05	-0.1	-0.1	-0.1	-0.1	-0.1	-0.05	-0.1	-0.05	-0.2	-0.5	2	-0.1
	6841337	12JH050	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99
	6841338	12JH051	6.36	24.8	6.0	1.03	7.3	1.4	10.1	2.2	7.4	1.11	8.5	1.32	9.4	0.7	-1	-0.1
	6841339	12JH052A01	8.59	38.0	10.4	2.26	11.8	2.2	15.0	3.1	9.7	1.47	10.2	1.40	12.3	0.7	-1	-0.1
	6841341	12JH052A02	2.68	12.5	4.2	1.36	5.6	1.2	8.7	1.9	5.8	0.81	5.6	0.80	5.3	0.6	2	0.1
	6841342	12JH053	6.65	26.7	6.0	0.83	8.8	1.7	13.8	3.0	10.7	1.50	11.1	1.66	12.4	0.8	-1	-0.1
	6841343	12JH054	2.51	13.0	3.6	1.30	4.7	0.8	5.1	1.0	3.1	0.40	2.9	0.43	2.4	-0.5	-1	-0.1
	6841344	12JH055	2.35	12.1	3.4	1.20	4.0	0.6	4.5	0.9	2.7	0.37	2.3	0.39	2.2	0.7	2	0.2
	6841345	12JH056	2.42	9.7	2.2	0.52	2.8	0.4	3.1	0.7	2.1	0.32	2.1	0.34	2.5	0.6	1	0.2
	6841346	12JH057	2.55	10.4	2.3	0.74	2.8	0.5	2.9	0.6	1.9	0.30	2.0	0.33	2.5	0.5	1	-0.1
	6841347	12JH058	2.25	11.3	3.5	1.10	4.7	0.8	5.6	1.1	3.8	0.53	3.5	0.52	3.1	-0.5	-1	-0.1
	6841348	12JH059	1.81	9.3	2.8	0.88	4.3	0.8	5.5	1.2	3.8	0.58	4.0	0.58	2.6	-0.5	-1	-0.1

**Open File 012A/1580**  
**Appendix A: Major- and trace-element data for samples collected from outcrop**

Lab Number	Sample	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Tl
	Units	ppm															
	Analysis Method	ICP-MS															
	Detection Limit	0.05	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.05	0.2	0.5	1	0.1
6841349	12JH060	3.45	17.0	4.7	1.77	5.9	0.9	5.8	1.1	3.2	0.44	2.8	0.43	2.4	-0.5	1	-0.1
6841757	14JH001	3.76	17.1	4.7	1.37	5.8	1.0	6.7	1.4	4.4	0.63	4.3	0.67	4.4	-0.5	-1	-0.1
6841758	14JH002	3.14	12.0	2.7	0.69	2.8	0.5	3.1	0.6	2.2	0.31	2.3	0.37	3.4	-0.5	-1	-0.1
6841759	14JH003	10.57	43.8	10.8	1.57	11.7	2.0	13.5	3.0	9.2	1.39	9.6	1.43	10.5	1.7	3	-0.1
6841761	14JH004	3.99	14.9	3.2	0.74	3.6	0.6	3.8	0.8	2.7	0.43	3.2	0.46	4.3	0.9	3	-0.1
6841762	14JH005	5.06	24.4	7.0	2.31	8.3	1.4	8.8	1.8	5.3	0.78	5.1	0.74	5.4	0.6	2	-0.1
6841763	14JH006	1.08	5.0	1.5	0.53	2.0	0.3	2.2	0.5	1.5	0.22	1.5	0.21	0.9	1.0	3	-0.1
6841764	14JH007	4.08	18.1	4.6	0.66	5.1	0.9	5.9	1.4	4.2	0.67	4.7	0.71	3.1	-0.5	1	-0.1
6841765	14JH008	2.01	10.0	3.2	1.15	3.9	0.6	4.2	0.8	2.4	0.34	2.1	0.34	2.0	1.3	1	-0.1
6841766	14JH009	3.36	15.2	4.1	0.89	4.5	0.8	5.5	1.2	3.7	0.61	4.4	0.70	3.6	-0.5	1	-0.1
6841767	14JH010	3.40	17.1	5.1	1.62	6.3	1.1	6.7	1.3	4.0	0.57	3.8	0.55	3.4	1.0	17	-0.1
6841768	14JH011	1.40	7.9	2.4	0.94	3.5	0.6	4.1	0.8	2.5	0.34	2.3	0.33	1.7	-0.5	1	-0.1
6841769	14JH012	2.63	13.4	3.9	1.32	5.2	0.9	5.5	1.1	3.5	0.46	3.1	0.46	2.8	1.2	1	-0.1
6841771	14JH013	8.06	38.1	10.5	2.93	12.8	2.1	13.6	2.8	8.6	1.22	8.2	1.23	7.4	-0.5	1	-0.1
6841772	14JH014	9.03	42.7	12.6	3.41	16.0	2.8	18.8	4.1	13.7	1.96	13.9	2.07	8.6	4.1	11	-0.1
6841773	14JH015	3.80	20.0	6.6	2.11	8.7	1.5	9.7	2.0	6.2	0.86	5.8	0.88	4.8	-0.5	1	-0.1
6841774	14JH016	8.82	34.8	7.8	1.76	9.2	1.4	9.3	2.0	6.1	0.89	5.7	0.87	1.7	1.3	11	0.1
6841775	14JH017	2.19	11.0	3.7	1.32	4.8	0.9	5.7	1.2	3.6	0.48	3.1	0.46	2.6	-0.5	-1	-0.1
6841776	14JH018	2.64	11.6	2.9	0.65	4.1	0.8	5.3	1.2	3.7	0.56	3.8	0.58	2.9	1.0	1	-0.1
6841777	14JH019	3.72	16.1	4.4	1.05	5.2	1.0	7.2	1.6	5.3	0.82	5.6	0.92	4.0	-0.5	1	-0.1
6841778	14JH022	1.82	8.1	2.2	0.45	2.6	0.4	3.0	0.6	2.2	0.31	2.1	0.32	1.7	0.9	1	-0.1

**Open File 012A/1580**  
**Appendix A: Major- and trace-element data for samples collected from outcrop**

Lab Number	Sample	Bi	Th	U	Be	Cu	Li	Mn	Ni	Pb	Sc	Ti	Zn	AI	CCPI	Zr+Hf+Nb+Y
	Units	ppm	ppm													
	Analysis Method	ICP-MS	ICP-MS	ICP-MS	ICP-ES	ppm										
	Detection Limit	0.4	0.1	0.1	0.1	1	0.1	1	1	1	0.1	1	1	1		
6841272	12JH001	-0.4	0.9	0.2	0.3	48	11.9	1049	118	3	40.9	3675	88	47.09	89.48	49.58
6841273	12JH002	-0.4	0.2	0.1	0.2	72	16.8	1235	127	3	39.3	3298	79	51.25	81.51	32.70
6841274	12JH003	-0.4	-0.1	-0.1	0.1	40	11.9	1088	103	-1	38.5	3626	63	43.64	83.38	21.90
6841275	12JH004	-99	-99	-99	1.1	3	1.9	143	1	1	3.7	527	68	16.00	37.39	-99
6841276	12JH005A	-0.4	35.7	7.2	2.4	13	2.1	767	4	60	5.7	3351	98	35.87	33.55	300.62
6841277	12JH005B	0.6	2.6	0.8	1.5	15	2.7	1502	21	-1	39.2	19329	125	37.54	80.94	264.60
6841278	12JH006	0.7	8.0	2.3	1.0	1	2.5	408	4	2	6.5	1664	47	19.85	50.75	488.87
6841279	12JH007	-99	-99	-99	0.5	8	2.1	174	2	1	7.8	1215	35	16.83	27.43	-99
6841281	12JH008	-0.4	3.0	1.0	0.6	9	11.1	181	5	16	24.3	1531	63	75.20	62.72	139.89
6841282	12JH009	0.5	2.1	0.7	0.3	40	9.5	839	13	2	30.6	2818	67	25.33	80.00	99.75
6841283	12JH011	-0.4	2.4	0.8	0.4	53	8.7	497	13	1	30.5	3305	66	33.93	75.41	115.95
6841284	12JH012A01	0.5	0.8	0.2	0.2	53	10.9	1142	11	2	33.8	738	105	50.29	79.93	54.25
6841285	12JH012A02	-0.4	-0.1	-0.1	-0.1	14	0.1	249	-1	-1	2.4	37	7	95.65	77.22	4.30
6841286	12JH012A03	-0.4	1.5	0.5	-0.1	3	6.0	43	12	-1	33.1	1074	9	80.34	94.86	98.73
6841287	12JH012A04	-0.4	1.8	0.6	0.4	45	3.1	908	10	2	29.4	1009	57	37.83	68.17	91.23
6841288	12JH013	-0.4	3.1	0.9	0.5	4	3.5	150	-1	-1	7.8	1565	33	23.58	21.73	127.80
6841289	12JH014	-0.4	2.5	0.8	0.6	4	6.8	21	3	-1	14.0	1034	20	52.22	43.25	146.34
6841291	12JH015	-0.4	3.5	1.0	0.6	14	7.6	662	6	3	21.3	2496	66	50.44	62.82	133.23
6841292	12JH016	-0.4	3.6	0.9	0.6	6	3.8	675	4	9	18.6	2434	22	30.87	45.75	133.20
6841293	12JH017	-0.4	3.7	1.0	0.6	12	7.1	571	5	8	19.0	581	58	30.67	53.62	145.39
6841294	12JH018	-0.4	3.4	1.0	0.5	10	5.5	753	4	6	17.2	1633	69	30.84	48.95	210.50
6841295	12JH019A01	-99	-99	-99	1.0	5	3.8	428	4	3	7.8	1785	35	25.17	53.43	53.00
6841296	12JH019A02	-0.4	5.7	1.6	0.9	8	6.1	376	15	10	5.5	473	55	92.22	96.84	362.38
6841297	12JH020	-0.4	6.6	1.9	2.6	18	4.5	566	3	12	5.3	754	98	69.17	59.77	433.17
6841298	12JH021	-0.4	6.8	2.3	0.7	1	1.3	287	-1	3	4.3	491	32	11.19	20.67	373.11
6841299	12JH022	-0.4	8.1	2.6	0.9	5	1.0	168	-1	132	3.5	1003	113	41.53	19.38	344.82
6841301	12JH023	-0.4	2.1	0.4	0.3	45	10.4	576	9	28	26.6	427	100	51.36	70.56	52.77
6841302	12JH024	-0.4	2.4	0.6	0.5	100	7.4	259	7	27	28.8	1913	136	33.23	60.18	59.15
6841303	12JH025	-0.4	12.1	2.4	0.8	-1	0.8	246	-1	8	2.1	515	14	15.83	18.85	163.25
6841304	12JH026	-99	-99	-99	0.8	2	4.0	147	1	17	2.5	1022	26	81.65	19.27	-99
6841305	12JH027	-0.4	11.4	3.1	1.7	2	1.7	281	1	7	5.1	1084	58	40.58	20.55	581.77
6841306	12JH028	-0.4	6.3	1.7	0.7	3	1.3	101	-1	7	3.8	283	16	12.48	25.33	396.14
6841307	12JH029	1.1	5.7	1.6	2.1	21	2.4	144	2	31	8.2	678	47	63.74	52.41	446.46
6841308	12JH030	-0.4	17.9	2.7	2.6	4	12.9	784	26	15	20.0	6058	92	62.63	61.14	326.73

**Open File 012A/1580**  
**Appendix A: Major- and trace-element data for samples collected from outcrop**

Lab Number	Sample	Bi	Th	U	Be	Cu	Li	Mn	Ni	Pb	Sc	Ti	Zn	Al	CCPI	Zr+Hf+Nb+Y
		Units	ppm													
		Analysis Method	ICP-MS	ICP-MS	ICP-MS	ICP-ES	ppm									
		Detection Limit	0.4	0.1	0.1	0.1	1	0.1	1	1	0.1	1	1	1	1	ppm
6841309	12JH031	-0.4	9.7	3.4	1.6	-1	2.2	466	3	18	8.2	2054	108	26.66	31.34	458.36
6841311	12JH032	-0.4	1.0	0.4	0.6	72	20.0	974	12	4	33.1	4616	95	47.28	65.89	59.04
6841312	12JH033	-0.4	9.6	2.7	1.4	3	2.9	461	1	2	4.3	610	44	31.70	38.07	394.21
6841313	12JH034A01	-0.4	8.4	2.8	1.5	9	5.1	372	1	5	4.4	1394	330	38.03	30.31	333.43
6841314	12JH034A02	-0.4	5.4	1.3	0.6	8	6.4	1273	7	5	17.7	8806	81	31.88	64.83	317.57
6841315	12JH035	-0.4	5.9	1.4	1.1	72	24.2	1423	59	66	45.8	3696	150	63.05	81.09	63.43
6841316	12JH036	-0.4	14.4	3.0	1.1	-1	3.7	188	3	12	4.9	1505	40	49.80	26.12	218.25
6841317	12JH037	-0.4	7.7	5.1	1.7	138	5.9	9996	126	4	12.5	623	169	57.33	88.55	186.72
6841318	12JH038A01	-0.4	1.4	0.4	0.6	46	9.8	596	9	8	33.0	2415	82	37.96	68.12	53.35
6841319	12JH038A02	-0.4	3.3	7.4	0.8	226	5.9	361	57	4	15.8	3265	39	33.76	77.88	161.51
6841321	12JH039	-0.4	8.6	9.0	1.1	141	13.0	1349	138	13	14.3	1176	420	73.11	89.50	193.38
6841322	12JH040	-0.4	1.9	0.5	0.3	45	9.3	745	8	7	25.2	2548	57	32.06	69.76	62.40
6841323	12JH041A01	-0.4	2.6	0.7	0.7	115	9.3	803	9	96	28.3	546	244	58.05	73.89	72.16
6841324	12JH041A02	0.5	2.6	0.7	0.5	130	15.1	485	9	287	25.2	483	566	81.70	78.95	59.34
6841325	12JH042	-0.4	2.2	0.7	1.0	30	17.5	1314	22	18	35.2	948	115	36.25	93.59	241.48
6841326	12JH043	-0.4	2.4	0.8	0.7	79	1.9	35	8	32	30.9	670	32	89.98	60.89	67.42
6841327	12JH044	-0.4	0.5	0.2	0.3	28	10.7	1367	7	12	34.8	855	92	24.74	67.26	68.72
6841328	12JH045	-0.4	3.0	1.0	0.5	8	13.8	268	5	7	18.8	2496	53	34.73	68.88	111.65
6841329	12JH046	-0.4	0.5	0.1	0.7	37	12.7	1112	58	8	39.4	13823	95	38.29	82.92	184.03
6841331	12JH047A01	-0.4	0.6	0.1	-0.1	5	0.3	70	-1	2	0.9	175	5	81.25	77.78	25.31
6841332	12JH047A02	-0.4	5.8	1.4	0.9	-1	2.8	159	6	2	7.7	2512	16	19.57	38.63	229.18
6841333	12JH047A03	-0.4	0.6	0.3	0.4	68	11.4	1017	109	15	35.5	4941	63	39.40	73.35	76.74
6841334	12JH048	-0.4	4.6	1.4	1.5	-1	6.5	1076	4	9	11.4	4377	103	31.35	40.03	369.14
6841335	12JH049A01	-0.4	3.8	1.7	1.9	6	3.0	107	-1	15	1.3	363	39	47.86	17.57	72.10
6841336	12JH049A02	-0.4	-0.1	-0.1	-0.1	-1	-0.1	10	-1	4	0.1	17	14	72.73	82.35	2.38
6841337	12JH050	-99	-99	-99	0.7	12	5.3	692	5	6	17.9	1918	68	35.09	50.32	-99
6841338	12JH051	-0.4	11.1	1.5	1.2	3	1.3	114	1	21	4.1	731	72	16.91	26.66	375.20
6841339	12JH052A01	-0.4	10.2	2.9	1.6	3	3.7	683	3	6	7.9	3449	70	25.89	46.46	523.02
6841341	12JH052A02	0.8	3.1	1.4	1.2	192	7.4	2342	28	-1	42.2	13121	133	57.47	86.42	264.23
6841342	12JH053	-0.4	10.5	2.8	1.5	8	0.9	924	2	-1	0.7	1262	60	15.71	41.61	639.76
6841343	12JH054	-0.4	1.1	0.3	0.5	5	12.5	1379	62	-1	33.6	9037	75	27.97	73.38	120.99
6841344	12JH055	-0.4	1.2	0.5	0.7	47	4.2	1350	18	-1	37.2	5228	86	28.91	74.66	124.20
6841345	12JH056	-0.4	6.7	1.6	0.6	1	1.3	252	2	-1	11.5	674	19	20.22	42.35	127.74
6841346	12JH057	-0.4	6.2	1.3	0.6	4	1.7	306	3	2	14.5	549	44	25.67	50.94	122.52
6841347	12JH058	-0.4	2.6	0.8	0.6	14	3.2	1130	37	-1	33.4	6119	35	42.34	73.79	157.17
6841348	12JH059	-0.4	2.2	0.6	0.6	4	0.7	180	3	-1	20.4	2475	10	25.05	42.35	135.23

**Open File 012A/1580**  
**Appendix A: Major- and trace-element data for samples collected from outcrop**

Lab Number	Sample	Bi	Th	U	Be	Cu	Li	Mn	Ni	Pb	Sc	Ti	Zn	AI	CCPI	Zr+Hf+Nb+Y
	Units	ppm	ppm													
	Analysis Method	ICP-MS	ICP-MS	ICP-MS	ICP-ES	ppm										
	Detection Limit	0.4	0.1	0.1	0.1	1	0.1	1	1	1	0.1	1	1	1		
6841349	12JH060	-0.4	2.0	0.5	0.5	2	5.0	1760	11	-1	32.3	15023	95	25.43	75.08	
6841757	14JH001	-0.4	3.7	1.0	0.8	7	3.0	1021	41	-1	33.5	5744	29	40.25	69.66	
6841758	14JH002	-0.4	7.4	1.6	0.8	3	1.7	235	5	1	15.3	682	54	28.52	41.41	
6841759	14JH003	-0.4	6.3	2.1	1.6	7	0.6	235	3	-1	6.2	355	16	11.68	28.66	
6841761	14JH004	-0.4	7.4	1.7	0.9	6	1.4	171	3	-1	9.1	456	12	20.66	30.30	
6841762	14JH005	-0.4	2.8	0.9	0.6	38	7.1	1787	22	-1	38.9	2813	131	38.18	77.33	
6841763	14JH006	-0.4	0.8	0.3	0.2	82	7.8	2074	13	-1	23.6	1589	103	18.76	64.12	
6841764	14JH007	-0.4	3.9	1.1	0.6	3	-0.1	16	1	3	4.6	228	9	6.41	4.65	
6841765	14JH008	-0.4	0.7	0.2	0.6	39	15.9	1897	40	2	48.8	1438	95	43.51	81.20	
6841766	14JH009	-0.4	2.5	0.8	0.4	6	2.1	148	5	-1	7.7	429	19	24.73	40.54	
6841767	14JH010	-0.4	1.0	0.3	0.6	48	15.1	1203	71	-1	39.3	11996	90	36.73	82.28	
6841768	14JH011	-0.4	0.5	0.2	0.3	80	18.2	1153	64	-1	41.4	5794	66	52.47	82.05	
6841769	14JH012	-0.4	0.5	0.3	0.7	39	12.9	1822	34	-1	53.2	9930	76	45.46	82.99	
6841771	14JH013	-0.4	3.9	1.5	1.4	2	9.6	1461	8	-1	16.2	3769	110	25.14	57.64	
6841772	14JH014	-0.4	4.5	0.5	1.2	4	9.6	759	11	-1	19.4	6983	147	36.80	55.90	
6841773	14JH015	-0.4	0.8	0.4	0.7	7	8.6	2083	20	-1	42.5	16063	111	39.00	86.72	
6841774	14JH016	-0.4	5.6	4.9	1.4	253	-0.1	41873	149	13	8.4	1948	190	50.43	98.12	
6841775	14JH017	-0.4	0.4	0.2	0.4	66	10.5	1365	45	-1	46.3	10360	98	35.85	87.27	
6841776	14JH018	-0.4	3.5	1.6	0.6	6	4.6	409	6	-1	19.1	1679	14	41.91	33.11	
6841777	14JH019	-0.4	5.2	3.6	1.2	22	19.7	722	13	-1	26.6	2104	30	32.96	52.59	
6841778	14JH022	-0.4	1.8	0.9	0.5	4	4.1	233	3	-1	15.7	2031	49	10.69	22.43	
															75.40	

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**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample Units	DDH_ID	Depth m	Rock Type	SiO <sub>2</sub>								
					Al <sub>2</sub> O <sub>3</sub>								
					Fe <sub>2</sub> O <sub>3</sub> T								
					wt. %	wt. %	wt. %	wt. %	wt. %				
ICP-OES					ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES				
<b>0.01</b>					<b>0.01</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>				
6841351	JHC-12-001	LL-94-18	44.8	quartz eye phryic felsic tuff	70.60	12.11	3.96	1.31	2.65				
6841352	JHC-12-002	LL-94-18	69.4	quartz eye phryic felsic tuff	66.53	14.29	3.98	1.40	2.57				
6841353	JHC-12-003	LL-94-18	104.0	chlorite-pyrite altered quartz eye phryic felsic tuff	47.22	13.47	14.09	5.08	9.02				
6841354	JHC-12-004	LL-94-18	120.0	quartz eye phryic felsic tuff (?) or rhyolite (?)	71.09	12.91	2.94	1.22	1.72				
6841355	JHC-12-005	LL-94-18	144.6	mafic volcanic	43.19	11.44	7.82	2.19	5.63				
6841356	JHC-12-006	LL-94-18	177.2	quartz eye phryic felsic tuff	73.91	12.77	3.15	1.31	1.83				
6841357	JHC-12-007	LL-94-18	206.3	quartz eye phryic felsic tuff	70.09	13.85	3.62	1.40	2.22				
6841358	JHC-12-008	LL-94-18	247.0	silica-pyrite altered felsic tuff	76.32	9.82	4.24	1.40	2.84				
6841359	JHC-12-009	LL-94-18	298.0	amygdaloidal basalt	46.48	14.74	9.80	3.39	6.41				
6841361	JHC-12-010	LL-94-18	305.0	very fine grained mafic tuff	55.65	17.88	10.80	4.48	6.32				
6841362	JHC-12-011	LL-94-18	315.1	amygdaloidal basalt	43.98	12.69	11.01	4.27	6.74				
6841363	JHC-12-012	LL-94-18	353.3	very fine grained mafic tuff or basalt	52.37	15.67	12.66	5.18	7.48				
6841364	JHC-12-013	LL-94-18	367.0	chlorite altered fine grained felsic volcanic - rhyolite (?)	56.35	22.38	5.73	2.79	2.95				
6841365	JHC-12-014	LL-94-18	392.0	fine grained felsic tuff interbedded with cherty horizons	61.67	18.67	5.05	2.25	2.81				
6841366	JHC-12-015	LL-94-18	408.7	fine grained felsic tuff interbedded with cherty horizons	78.88	11.97	2.03	0.84	1.18				
6841367	JHC-12-016	LL-94-18	431.6	fine grained silicified felsic volcanic	72.88	13.78	2.75	1.18	1.57				
6841368	JHC-12-017	LL-94-18	457.0	felsic volcanic	71.99	14.21	3.54	1.60	1.94				
6841369	JHC-12-018	LL-94-18	478.2	chlorite altered fine grained felsic volcanic	69.66	14.80	4.31	1.94	2.37				
6841371	JHC-12-018b	LL-94-19	484.8	feldspar phryic rhyolite flow	73.65	12.60	3.73	1.61	2.12				
6841372	JHC-12-019	LL-94-18	499.0	brecciated rhyolite flow	72.41	14.33	3.81	1.62	2.18				
6841373	JHC-12-020	LL-94-18	512.7	fine-grained chlorite altered felsic tuff with cherty horizons	72.54	14.07	3.18	1.22	1.95				
6841374	JHC-12-022	LL-94-18	518.3	sericite-chlorite altered felsic tuff	70.90	14.79	3.40	1.42	1.98				
6841375	JHC-12-023	LL-94-18	527.7	very fine grained feldspar phryic rhyolitic flow	67.05	16.40	4.15	1.92	2.22				
6841376	JHC-12-024	LL-94-18	559.4	quartz eye phryic felsic tuff	59.97	20.36	5.47	2.31	3.16				
6841377	JHC-12-025	LL-94-18	568.5	massive sulphide - base metal rich	1.78	0.59	24.24	3.03	21.21				
6841378	JHC-12-026	LL-94-18	573.8	sericite-chlorite-pyrite altered felsic tuff	48.01	16.80	8.98	2.95	6.03				
6841379	JHC-12-027	LL-94-18	581.0	sericite-chlorite-pyrite altered felsic tuff	74.87	11.74	2.93	1.05	1.88				
6841381	JHC-12-028	LL-94-18	601.5	sericite-chlorite-pyrite altered felsic tuff	62.50	18.76	5.17	2.23	2.94				
6841382	JHC-12-029	LL-94-18	641.0	rhyolitic sill with sulphide stringers	74.79	11.90	5.05	1.81	3.24				
6841383	JHC-12-030	LL-94-18	673.0	sericite-pyrite altered felsic tuff	60.95	13.88	5.52	2.01	3.51				
6841384	JHC-12-031	LL-94-02	7.4	rhyolitic flow	69.82	13.15	4.27	1.75	2.53				
6841385	JHC-12-032	LL-94-02	18.0	felsic sill	56.68	8.17	16.45	5.69	10.76				
6841386	JHC-12-033	LL-94-02	22.2	rhyolitic flow (?)	71.66	11.19	5.42	1.65	3.76				
6841387	JHC-12-034	LL-94-02	28.6	sericite altered felsic tuff	71.44	8.22	9.50	2.93	6.57				
6841388	JHC-12-035	LL-94-02	44.3	fine grained rhyolite with magnetite	58.97	9.00	16.84	5.84	11.00				

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**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample Units	DDH_ID	Depth m	Rock Type	SiO <sub>2</sub> Al <sub>2</sub> O <sub>3</sub> Fe <sub>2</sub> O <sub>3</sub> T Fe <sub>2</sub> O <sub>3</sub> FeO								
					wt. %	wt. %	wt. %	wt. %	wt. %				
					ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES				
<b>Analysis Method</b>													
<b>Detection Limit</b>													
6841389	JHC-12-036	LL-94-02	50.5	rhyolite flow	61.39	17.91	5.31	2.47	2.85				
6841391	JHC-12-037	LL-94-02	59.0	sericite-pyrite altered felsic tuff	71.05	10.23	5.91	1.94	3.97				
6841392	JHC-12-038	LL-94-02	67.7	massive sulphide - Zn-rich	4.48	0.92	6.46	0.88	5.58				
6841393	JHC-12-039	LL-94-02	69.2	massive sulphide - Cu-rich	1.28	0.70	25.23	3.17	22.06				
6841394	JHC-12-040	LL-94-02	71.0	chlorite altered fine grained felsic tuff	71.72	13.61	3.30	1.24	2.06				
6841395	JHC-12-041	LL-94-02	79.0	laminated fine-grained felsic tuff with cherty horizons	71.18	13.33	3.70	1.59	2.12				
6841396	JHC-12-042	LL-94-05	15.0	chlorite altered felsic tuff	62.20	17.39	6.52	2.95	3.57				
6841397	JHC-12-043	LL-94-05	34.0	feldspar phryic rhyolitic flow	75.56	11.91	2.72	1.11	1.61				
6841398	JHC-12-044	LL-94-05	47.5	chlorite altered felsic tuff with cherty magnetite rich bands	49.71	14.34	11.62	4.43	7.19				
6841399	JHC-12-045	LL-94-05	52.0	sericite altered felsic tuff	58.60	19.21	6.26	2.85	3.41				
6841401	JHC-12-046	LL-94-05	67.0	rhyolite flow	76.15	11.74	2.41	1.01	1.40				
6841402	JHC-12-047	LL-94-05	83.5	very fine grained siliceous felsic tuff	73.52	13.80	3.44	1.53	1.91				
6841403	JHC-12-048	LL-94-05	110.7	feldspar phryic rhyolite flow	69.54	15.45	4.24	1.97	2.26				
6841404	JHC-12-049	LL-94-05	116.0	non-magnetic felsic tuff	66.69	15.72	4.49	1.79	2.70				
6841405	JHC-12-050	LL-00-02	10.0	felsic volcanic - tuff (?)	67.80	16.52	3.71	1.76	1.95				
6841406	JHC-12-051	LL-00-02	25.5	magnetite rich mafic tuff	48.83	16.61	11.62	5.13	6.49				
6841407	JHC-12-052	LL-00-02	32.0	chlorite-carbonate mafic tuff - very magnetic	47.26	18.79	12.24	5.23	7.01				
6841408	JHC-12-053	LL-00-02	50.0	mafic flow	46.47	13.86	8.25	3.23	5.02				
6841409	JHC-12-054	LL-00-02	55.0	chlorite-carbonate altered mafic flow	55.78	14.97	10.19	3.72	6.47				
6841411	JHC-12-055	LL-00-02	68.0	fine-grained felsic tuff	69.79	14.49	4.01	1.73	2.28				
6841412	JHC-12-056	LL-00-02	77.0	felsic tuff	75.12	12.21	3.54	1.33	2.21				
6841413	JHC-12-057	LL-00-02	79.0	feldspar phryic rhyolite flow	76.83	11.46	2.92	1.15	1.78				
6841414	JHC-12-058	LL-00-02	86.2	chlorite altered felsic ash tuff	71.58	12.37	5.24	1.97	3.27				
6841415	JHC-12-059	LL-00-02	92.3	felsic lapilli tuff	75.95	11.05	3.35	1.22	2.13				
6841416	JHC-12-060	LL-00-02	96.0	sericite-pyrite-silica altered felsic lapilli tuff	77.60	7.95	6.57	2.24	4.33				
6841417	JHC-12-061	LL-00-02	107.7	sericite-pyrite-silica altered felsic lapilli tuff	61.39	20.66	2.66	1.20	1.46				
6841418	JHC-12-062	LL-00-02	115.0	fine-grained chlorite altered felsic tuff with cherty bands - magnetic	67.64	15.55	3.80	1.63	2.17				
6841419	JHC-12-063	LL-00-02	126.0	felsic lapilli tuff	62.66	15.71	5.98	2.32	3.65				
6841421	JHC-12-065	LL-00-02	135.7	chlorite-sericite altered felsic tuff	-99	-99	-99	-99	-99				
6841422	JHC-12-066	LL-00-02	137.3	massive sulphide stringers in felsic lapilli tuff	72.09	13.30	3.18	1.24	1.94				
6841423	JHC-12-067	LL-00-02	143.2	silicified fine grained rhyolite	74.08	13.21	2.47	1.11	1.36				
6841424	JHC-12-068	LL-00-02	148.2	chlorite altered felsic ash tuff	67.07	14.85	3.67	1.49	2.18				
6841425	JHC-12-069	LLW-97-03	6.7	siliceous rhyolite	52.72	17.49	11.03	4.30	6.74				
6841426	JHC-12-070	LLW-97-03	30.0	quartz and feldspar phryic felsic lapilli tuff with stringer sulphide	65.15	14.33	4.66	1.77	2.89				
6841427	JHC-12-071	LLW-97-03	45.5	quartz and feldspar phryic felsic lapilli tuff with stringer sulphide	68.58	13.39	4.30	1.70	2.59				
6841428	JHC-12-072	LLW-97-03	57.6	quartz-feldspar phryic felsic tuff (?) or rhyolite (?)	76.31	9.14	2.03	0.73	1.30				

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**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	DDH_ID	Depth m	Rock Type	SiO <sub>2</sub> Al <sub>2</sub> O <sub>3</sub> Fe <sub>2</sub> O <sub>3</sub> T Fe <sub>2</sub> O <sub>3</sub> FeO								
					wt. %	wt. %	wt. %	wt. %	wt. %				
					ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES				
<b>Analysis Method</b>													
<b>Detection Limit</b>													
6841429	JHC-12-073	LLW-97-03	62.3	quartz-feldspar phric felsic tuff (?) or rhyolite (?)	76.35	10.41	2.08	0.74	1.33				
6841431	JHC-12-074	LLW-97-03	69.0	quartz-feldspar phric felsic tuff (?) or rhyolite (?)	73.46	12.22	2.48	0.99	1.49				
6841432	JHC-12-075	LLW-97-03	71.0	feldspar phric lapilli tuff	74.27	10.61	2.83	1.06	1.77				
6841433	JHC-12-076	LLW-97-03	85.5	quartz feldspar felsic porphyritic sill	76.36	12.20	1.74	0.73	1.00				
6841434	JHC-12-077	LLW-97-03	107.3	sericite-pyrite altered felsic tuff	72.27	12.58	2.46	0.99	1.47				
6841435	JHC-12-077b	LLW-97-05	29.2	diabase dyke	51.41	15.57	12.50	4.29	8.21				
6841436	JHC-12-078	LLW-97-05	38.2	flow banded rhyolite - magnetic	51.63	14.92	11.25	4.93	6.32				
6841437	JHC-12-079	LLW-97-05	44.0	altered mafic dyke	46.25	10.79	8.24	2.41	5.83				
6841438	JHC-12-080	LLW-97-05	77.5	feldspar - quartz porphyritic rhyolite	74.29	14.42	2.11	0.95	1.16				
6841439	JHC-12-081	LLW-97-05	109.6	feldspar - quartz porphyritic rhyolite	70.34	14.52	3.18	1.50	1.68				
6841441	JHC-12-082	LLW-97-05	126.6	semi-massive sulphide in rhyolite	72.41	11.55	4.42	1.76	2.66				
6841442	JHC-12-083	LLW-97-05	132.0	rhyolite flow	72.77	12.86	2.38	1.05	1.33				
6841443	JHC-12-084	LLW-97-05	137.3	rhyolite flow	52.70	18.06	9.08	4.35	4.73				
6841444	JHC-12-085	LLW-97-05	139.0	altered rhyolite with base-metal sulphide stringers	72.60	12.03	4.31	1.65	2.66				
6841445	JHC-12-086	LLW-97-05	144.0	quartz and feldspar phric rhyolite	70.50	14.78	1.70	0.91	0.79				
6841446	JHC-12-088	LLW-97-05	188.0	rhyolite	61.29	18.84	4.40	1.91	2.48				
6841447	JHC-12-089	LLW-97-05	195.8	sericite-chlorite altered rhyolite	64.72	16.72	4.82	1.99	2.83				
6841448	JHC-12-090B	IS-95-01	19.5	chlorite-sericite-pyrite altered feldspar-quartz phric rhyolite	69.16	14.09	4.08	1.82	2.26				
6841449	JHC-12-091	IS-95-01	33.3	amygdaloidal basalt	51.44	15.75	13.99	4.71	9.28				
6841451	JHC-12-092	IS-95-01	36.6	feldspar and quartz phric rhyolite	71.05	13.27	3.77	1.51	2.25				
6841452	JHC-12-093	IS-95-01	52.0	sericite-carbonate altered feldspar and quartz phric rhyolite	76.67	11.47	2.98	1.23	1.74				
6841453	JHC-12-094	IS-95-01	83.6	feldspar and quartz phric felsic tuff	72.75	13.97	2.44	1.07	1.37				
6841454	JHC-12-095	IS-95-01	93.8	feldspar and quartz phric rhyolite	72.84	13.94	2.43	1.06	1.38				
6841455	JHC-12-096	LL-06-01	10.8	sericite-silica-pyrite altered quartz phric felsic tuff	55.17	17.05	6.51	2.13	4.38				
6841456	JHC-12-097	LL-06-01	24.5	chlorite-pyrite-carbonate altered felsic to intermediate tuff	59.36	16.60	6.47	2.23	4.24				
6841457	JHC-12-098	LL-06-01	48.8	chlorite altered quartz eye phric felsic tuff	59.13	16.30	6.66	2.39	4.26				
6841458	JHC-12-099	LL-06-01	54.5	sericite-pyrite altered quartz eye phric felsic tuff	60.87	12.47	6.68	2.00	4.67				
6841459	JHC-12-100	LL-06-01	64.5	quartz phric felsic-intermediate tuff	61.99	14.05	5.63	2.11	3.52				
6841461	JHC-12-101	LL-06-01	81.5	quartz phric felsic-intermediate tuff - locally looks mafic (?)	50.24	15.78	8.83	2.64	6.19				
6841462	JHC-12-102	LL-06-01	102.0	sericite-silica-pyrite altered felsic tuff	51.49	17.37	10.12	3.51	6.61				
6841463	JHC-12-103	LL-06-01	123.0	chlorite-carbonate altered quartz eye phric felsic tuff	63.96	13.92	5.24	1.68	3.56				
6841464	JHC-12-104	LL-06-01	135.5	quartz eye phric felsic tuff	61.74	14.19	5.35	1.60	3.75				
6841465	JHC-12-105	LL-06-01	159.0	quartz eye phric felsic tuff	62.03	14.14	5.84	1.74	4.11				
6841466	JHC-12-106	LL-06-01	172.8	silica-sericite-pyrite altered felsic tuff	65.84	14.44	6.27	2.07	4.20				
6841467	JHC-12-107	LL-06-01	195.0	quartz eye phric felsic-intermediate tuff	64.45	14.41	8.08	2.62	5.46				
6841468	JHC-12-108	LL-06-01	197.6	felsic tuff	62.32	14.50	5.67	1.85	3.82				

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**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample Units	DDH_ID	Depth m	Rock Type	SiO <sub>2</sub> Al <sub>2</sub> O <sub>3</sub> Fe <sub>2</sub> O <sub>3</sub> T Fe <sub>2</sub> O <sub>3</sub> FeO				
					wt. % wt. % wt. % wt. % wt. %				
					ICP-OES ICP-OES ICP-OES ICP-OES ICP-OES				
					0.01	0.01	0.01	0.01	0.01
6841469	JHC-12-109	SG-06-04	15.7	rhyolite breccia	68.31	14.23	2.93	1.23	1.70
6841471	JHC-12-110	SG-06-04	31.7	feldspar and quartz phryic rhyolite	77.89	11.79	1.87	0.74	1.12
6841472	JHC-12-112	SG-06-04	45.5	rhyolite breccia	62.76	10.16	3.19	1.13	2.06
6841473	JHC-12-113	SG-06-04	50.6	chlorite matrix supported rhyolite breccia	74.85	12.80	2.73	1.19	1.54
6841474	JHC-12-114	SG-06-04	75.3	chlorite-carbonate altered mafic tuff	49.54	17.42	9.18	3.50	5.68
6841475	JHC-12-115	SG-06-04	84.0	mafic amygdaloidal sill	45.36	18.51	10.20	3.81	6.39
6841476	JHC-12-116	SG-06-04	122.0	chlorite carbonate altered intermediate tuff	53.47	18.56	8.73	3.93	4.80
6841477	JHC-12-117	SG-06-04	137.2	basalt	50.69	14.05	12.60	4.13	8.48
6841478	JHC-12-118	HW-06-01	14.0	siliceous rhyolite flow	81.21	10.80	1.86	0.73	1.12
6841479	JHC-12-119	HW-06-01	20.5	mafic amygdaloidal sill	52.54	15.74	12.65	4.74	7.91
6841481	JHC-12-120	HW-06-01	31.8	feldspar phryic dacitic sill (?)	57.37	19.09	5.37	2.26	3.11
6841482	JHC-12-121	HW-06-01	55.8	carbonate altered quartz-feldspar phryic rhyolite	68.22	14.21	3.65	1.66	1.99
6841483	JHC-12-122	HW-06-01	84.5	quartz-feldspar phryic rhyolite	67.04	15.72	2.94	1.43	1.52
6841484	JHC-12-123	HW-06-01	91.0	intermediate to mafic flow (?) - carbonate and hematite altered	56.95	18.85	5.97	2.54	3.42
6841485	JHC-12-124	HW-06-01	94.8	intermediate to mafic flow (?) - carbonate and hematite altered	63.12	17.50	6.31	2.65	3.66
6841486	JHC-12-125	HW-06-01	110.7	carbonate filled amygdaloidal basalt	48.10	16.61	13.46	5.06	8.40
6841487	JHC-12-126	HW-06-01	125.2	pyrite-rich graphitic argillite/shale	52.19	9.98	8.64	2.39	6.25
6841488	JHC-12-127	HW-06-01	126.6	pyrite-rich graphitic argillite/shale	51.60	7.86	6.09	1.59	4.51
6841489	JHC-12-128	HW-06-01	129.5	pyrite-rich graphitic argillite/shale	58.49	9.44	6.03	1.69	4.34
6841491	JHC-12-129	HW-06-01	141.8	pyrite-rich graphitic argillite/shale	54.16	7.60	3.15	0.85	2.30
6841492	JHC-12-130	HW-06-01	152.9	pyrite-rich graphitic argillite/shale	47.68	9.86	8.75	2.40	6.35
6841493	JHC-12-131	HW-06-01	160.0	interbedded black argillite and fine-grained felsic tuff	59.27	17.91	6.06	2.00	4.06
6841494	JHC-12-132	HW-06-01	164.5	interbedded black argillite and fine-grained felsic tuff	57.63	17.08	6.58	2.15	4.43
6841495	JHC-12-133	LL-06-03	21.5	quartz-feldspar phryic felsic tuff	60.59	14.64	9.06	3.49	5.56
6841496	JHC-12-134	LL-06-03	40.0	chlorite-carbonate altered fine-grained felsic-intermediate tuff	54.82	14.71	7.56	2.27	5.29
6841497	JHC-12-135	LL-06-03	55.5	fine-grained felsic tuff	51.44	13.49	7.39	2.02	5.36
6841498	JHC-12-136	LL-06-03	63.0	fine-grained felsic tuff	54.23	15.03	8.53	2.35	6.18
6841499	JHC-12-137	LL-06-03	85.0	fine-grained felsic tuff	54.12	14.14	8.04	2.22	5.81
6841501	JHC-12-138	LL-06-03	106.0	quartz eye phryic felsic tuff	63.90	13.42	7.40	2.29	5.11
6841502	JHC-12-139	LL-06-03	117.0	quartz eye phryic felsic tuff	67.29	14.34	5.26	1.70	3.56
6841503	JHC-12-140	LL-06-03	158.5	pyrite-rich graphitic argillite/shale	57.54	11.06	5.55	1.52	4.03
6841504	JHC-12-141	LL-06-03	171.5	pyrite-rich graphitic argillite/shale	64.48	7.34	5.91	1.61	4.29
6841505	JHC-12-142	LL-06-03	194.0	medium grained gabbro	40.93	13.53	16.57	4.61	11.96
6841506	JHC-12-143	LL-06-03	245.0	quartz eye phryic felsic ash tuff	65.92	13.45	2.28	0.75	1.53
6841507	JHC-12-144	LL-06-03	255.0	quartz eye phryic felsic sandy tuff	64.87	15.77	3.57	1.25	2.32
6841508	JHC-12-145	LL-95-022A	421.0	massive sulphide	3.33	1.58	16.11	2.12	13.99

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**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	DDH_ID	Depth m	Rock Type	SiO <sub>2</sub> Al <sub>2</sub> O <sub>3</sub> Fe <sub>2</sub> O <sub>3</sub> T Fe <sub>2</sub> O <sub>3</sub> FeO								
					wt. %	wt. %	wt. %	wt. %	wt. %				
					ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES				
<b>Analysis Method</b>													
<b>Detection Limit</b>													
6841509	JHC-12-146	LL-95-022A	425.0	quartz phryic felsic tuff - sericite-silica-pyrite altered stringer zone	62.84	11.35	8.00	2.63	5.37				
6841511	JHC-12-147	SG-06-03	33.5	amygdaloidal pillow basalt	47.87	15.92	12.66	4.61	8.05				
6841512	JHC-12-148	SG-06-03	74.0	fine-grained felsic-intermediate tuff with shale horizons	54.78	15.89	9.29	3.66	5.63				
6841513	JHC-12-149	SG-06-03	102.0	pyrite-rich graphitic argillite/shale	49.23	11.62	13.67	3.95	9.71				
6841514	JHC-12-150	LL-94-07	34.5	very fine-grained magnetic felsic tuff (?) rhyolite (?)	44.45	15.62	11.40	4.74	6.67				
6841515	JHC-12-151	LL-94-07	62.0	very fine-grained magnetic felsic ash tuff	49.70	16.95	10.98	4.97	6.00				
6841516	JHC-12-152	LL-94-07	75.6	quartz phryic carbonate altered rhyolite	47.32	14.58	11.95	4.36	7.59				
6841517	JHC-12-153	LL-94-07	119.8	feldspar and quartz phryic rhyolite	77.36	9.25	2.78	1.10	1.68				
6841518	JHC-12-154	LL-94-07	149.4	sericite-pyrite-silica altered felsic tuff	64.83	13.43	6.16	2.63	3.53				
6841519	JHC-12-155	LL-94-07	158.4	sericite-pyrite-silica altered felsic tuff	58.55	18.00	7.12	2.86	4.26				
6841521	JHC-12-156	LL-94-07	177.7	felsic tuff	63.52	15.29	5.37	2.56	2.80				
6841522	JHC-12-157	LL-94-01	72.5	pyrite-rich graphitic argillite/shale	52.23	8.47	19.48	4.56	14.92				
6841523	JHC-12-158	LL-94-13	50.5	pyrite-rich graphitic argillite/shale	28.37	7.73	33.59	7.71	25.88				
6841524	JHC-12-159	LL-94-14	42.0	pyrite-rich graphitic argillite/shale	32.22	10.27	23.69	5.90	17.79				
6841525	JHC-12-160	LL-97-31	101.0	pyrite-rich graphitic argillite/shale	20.45	5.42	38.47	7.53	30.93				
6841526	JHC-12-161	LL-97-33a	161.0	pyrite-rich graphitic argillite/shale	30.59	10.54	25.35	6.51	18.84				
6841527	JHC-12-162	LL-97-37	23.5	pyrite-rich graphitic argillite/shale	26.64	5.42	35.81	7.48	28.34				
6841528	JHC-12-090A	LLW-97-05	210.5	foliated rhyolite	72.01	13.25	2.49	1.00	1.48				

**Open File 012A/1580**  
**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	MgO	CaO	Na <sub>2</sub> O	K <sub>2</sub> O	TiO <sub>2</sub>	MnO	P <sub>2</sub> O <sub>5</sub>	Cr	Zr	Ba	LOI	Total	V	Co	Ga	Ge
		Units	wt. %	wt. %	wt. %	wt. %	wt. %	wt. %	wt. %	ppm	ppm	ppm	wt. %	wt. %	ppm	ppm	ppm
		Analysis Method	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	Grav		ICP-MS	ICP-MS	ICP-MS	ICP-MS
	Detection Limit	0.01	0.01	0.01	0.01	0.001	0.001	0.001	1	1	1	0.01		5	1	1	1
	6841351 JHC-12-001	3.22	0.23	-0.01	3.60	0.201	0.467	0.024	-1	329	2572	3.79	98.11	-99	-99	-99	-99
	6841352 JHC-12-002	5.47	0.17	2.06	2.60	0.302	0.361	0.054	-1	365	2070	3.28	99.10	-5	1	20	2
	6841353 JHC-12-003	9.17	0.15	-0.01	6.11	0.243	0.376	0.039	-1	444	4203	8.03	98.78	-5	2	40	3
	6841354 JHC-12-004	1.87	0.51	4.24	2.46	0.244	0.181	0.032	-1	430	3300	1.98	98.47	-5	1	22	2
	6841355 JHC-12-005	10.24	10.20	1.73	1.64	0.934	0.191	0.814	611	152	4093	11.39	99.58	174	41	16	4
	6841356 JHC-12-006	1.70	0.16	5.53	1.10	0.249	0.154	0.036	-1	406	1115	1.91	100.66	-5	1	20	2
	6841357 JHC-12-007	2.78	0.09	3.36	2.35	0.281	0.155	0.033	-1	501	3739	2.47	99.08	-5	1	26	3
	6841358 JHC-12-008	2.69	0.08	1.29	2.00	0.245	0.177	0.015	-1	439	2213	3.00	99.88	-5	1	21	3
	6841359 JHC-12-009	3.25	9.46	5.31	0.31	1.218	0.283	0.169	4	97	701	8.75	99.78	297	29	17	3
	6841361 JHC-12-010	2.10	2.28	7.31	0.31	1.727	0.155	0.159	2	177	147	1.45	99.83	77	18	28	3
	6841362 JHC-12-011	1.66	11.12	7.19	0.12	1.607	0.234	0.225	-1	104	285	8.25	98.08	241	28	17	3
	6841363 JHC-12-012	4.30	2.42	7.42	0.19	1.958	0.295	0.216	-1	121	182	3.00	100.50	373	33	23	4
	6841364 JHC-12-013	2.22	0.23	5.07	5.15	0.563	0.053	0.057	29	646	1373	2.78	100.57	13	5	37	4
	6841365 JHC-12-014	3.09	0.24	4.31	4.06	0.352	0.105	0.052	1	576	906	2.58	100.18	-5	1	41	3
	6841366 JHC-12-015	0.07	0.37	6.21	0.09	0.130	0.028	0.013	-1	362	90	0.41	100.20	6	1	17	2
	6841367 JHC-12-016	0.54	0.57	6.88	0.30	0.255	0.096	0.056	-1	325	249	0.32	98.41	-5	-1	19	3
	6841368 JHC-12-017	1.25	0.50	7.79	0.23	0.349	0.092	0.063	1	480	553	0.58	100.58	5	2	20	4
	6841369 JHC-12-018	1.62	0.48	7.56	0.52	0.305	0.166	0.053	-1	353	406	0.99	100.46	-5	1	25	3
	6841371 JHC-12-018b	0.88	0.36	6.92	0.22	0.252	0.138	0.049	1	283	292	0.49	99.28	-5	1	22	2
	6841372 JHC-12-019	1.07	0.44	6.73	0.35	0.249	0.126	0.043	-1	364	171	0.55	100.09	-5	1	23	4
	6841373 JHC-12-020	2.41	0.25	1.17	4.35	0.203	0.110	0.016	-1	456	3723	1.83	100.13	-5	-1	29	8
	6841374 JHC-12-022	2.00	0.36	3.30	3.49	0.200	0.140	0.016	-1	445	1418	1.61	100.21	-5	-1	29	3
	6841375 JHC-12-023	2.35	0.31	7.66	1.10	0.244	0.188	0.021	1	466	767	1.21	100.68	-5	-1	35	4
	6841376 JHC-12-024	2.26	0.09	1.55	6.08	0.369	0.088	0.034	-1	560	5885	4.25	100.52	-5	-1	40	4
	6841377 JHC-12-025	0.57	0.21	-0.01	0.09	0.004	0.084	-0.001	-1	6	3055	24.60	51.99	-5	-1	68	8
	6841378 JHC-12-026	2.64	0.23	0.22	4.66	0.586	0.090	0.172	-1	263	3889	8.01	90.39	5	2	44	4
	6841379 JHC-12-027	2.49	0.42	1.67	2.76	0.153	0.175	0.031	-1	373	2197	3.08	100.31	-99	-99	-99	-99
	6841381 JHC-12-028	1.89	0.11	3.31	4.52	0.357	0.071	0.048	-1	506	2852	3.97	100.71	-5	-1	37	4
	6841382 JHC-12-029	1.32	0.02	0.12	4.27	0.179	0.122	0.015	-1	348	5264	2.49	100.29	8	2	29	2
	6841383 JHC-12-030	7.62	0.22	3.81	1.64	0.252	0.536	0.049	-1	343	782	3.59	98.06	-5	-1	25	2
	6841384 JHC-12-031	1.99	1.15	5.66	0.90	0.216	0.081	0.038	-1	355	1248	2.19	99.47	-5	8	20	2
	6841385 JHC-12-032	1.14	3.70	4.04	0.97	0.336	1.415	0.093	5	172	3455	3.61	96.61	-5	1	30	3
	6841386 JHC-12-033	3.74	0.03	0.34	2.29	0.164	0.128	0.014	-1	412	2089	3.37	98.34	-5	-1	24	3
	6841387 JHC-12-034	0.54	0.02	-0.01	2.77	0.115	0.014	0.023	-1	281	3207	6.10	98.68	15	-1	23	4
	6841388 JHC-12-035	1.17	3.81	3.94	0.96	0.345	1.468	0.095	4	180	3639	2.48	99.08	13	6	15	6

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**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	MgO	CaO	Na2O	K2O	TiO2	MnO	P2O5	Cr	Zr	Ba	LOI	Total	V	Co	Ga	Ge	
		Units	wt. %	ppm	ppm	ppm	wt. %	wt. %	ppm	ppm	ppm	ppm						
		Analysis Method	ICP-OES	Grav	ICP-MS	ICP-MS	ICP-MS	ICP-MS										
		Detection Limit	0.01	0.01	0.01	0.01	0.001	0.001	0.001	1	1	1	0.01	5	1	1	1	
	6841389	JHC-12-036	2.31	0.59	6.53	2.57	0.350	0.287	0.046	7	440	636	1.74	99.03	-5	1	31	5
	6841391	JHC-12-037	2.01	0.57	0.03	3.48	0.137	0.121	0.016	-1	358	6736	4.60	98.16	-5	1	20	3
	6841392	JHC-12-038	0.29	0.56	0.08	0.25	0.013	0.061	0.234	-1	26	193200	9.93	23.29	14	1	53	5
	6841393	JHC-12-039	0.63	0.02	0.02	0.11	0.001	0.067	0.004	-1	7	74596	19.72	47.77	-5	-1	43	6
	6841394	JHC-12-040	2.65	0.19	1.37	3.85	0.203	0.113	0.019	-1	398	2213	2.43	99.45	-5	1	26	3
	6841395	JHC-12-041	1.40	0.92	6.75	0.46	0.213	0.150	0.016	-1	404	101	0.98	99.09	-5	-1	23	4
	6841396	JHC-12-042	1.83	0.68	6.85	1.78	0.571	0.106	0.091	-1	403	2115	1.98	100.00	23	2	33	5
	6841397	JHC-12-043	1.36	0.19	5.91	0.27	0.153	0.088	0.009	-1	381	276	1.16	99.34	-5	1	24	3
	6841398	JHC-12-044	3.64	5.90	6.54	0.17	1.888	0.772	0.202	-1	118	489	5.54	100.33	375	33	22	5
	6841399	JHC-12-045	2.18	1.17	5.70	3.26	0.599	0.126	0.110	-1	395	912	2.53	99.73	6	3	33	3
	6841401	JHC-12-046	0.32	0.15	6.07	0.51	0.171	0.048	0.019	-1	309	445	0.70	98.28	-5	4	147	18
	6841402	JHC-12-047	0.73	0.29	7.48	0.19	0.209	0.112	0.018	-1	396	224	0.84	100.63	-5	-1	33	3
	6841403	JHC-12-048	1.12	0.46	8.16	0.54	0.313	0.137	0.056	-1	344	646	0.65	100.66	-5	1	28	3
	6841404	JHC-12-049	3.27	0.47	2.36	4.04	0.496	0.135	0.094	1	486	984	2.62	100.37	12	2	30	4
	6841405	JHC-12-050	0.60	0.22	8.86	0.23	0.250	0.029	0.041	-1	385	4221	0.79	99.04	6	1	26	4
	6841406	JHC-12-051	2.46	4.99	6.82	2.18	1.749	0.177	0.635	117	116	1638	4.02	100.11	217	35	23	4
	6841407	JHC-12-052	2.68	3.22	5.23	3.34	1.831	0.126	0.365	120	116	948	3.67	98.76	85	42	29	3
	6841408	JHC-12-053	2.23	10.81	7.12	0.18	1.298	0.244	0.154	10	75	106	9.06	99.67	303	26	33	5
	6841409	JHC-12-054	3.28	3.89	5.20	0.56	1.378	0.199	0.163	11	85	473	4.29	99.91	398	28	19	2
	6841411	JHC-12-055	0.86	0.96	6.91	0.50	0.275	0.066	0.045	-1	328	646	1.33	99.22	16	2	21	3
	6841412	JHC-12-056	0.94	1.46	4.08	0.90	0.236	0.093	0.032	-1	453	3718	1.77	100.38	9	1	21	4
	6841413	JHC-12-057	0.89	0.68	5.27	0.26	0.135	0.050	0.010	-1	373	2181	1.12	99.62	7	1	19	2
	6841414	JHC-12-058	2.35	0.24	4.77	0.47	0.254	0.114	0.027	-1	467	1271	1.79	99.21	7	2	29	3
	6841415	JHC-12-059	1.78	0.16	0.84	3.70	0.168	0.062	0.022	-1	434	4020	2.73	99.80	-5	-1	31	3
	6841416	JHC-12-060	0.45	0.08	1.35	2.22	0.118	0.013	0.026	-1	308	3758	4.21	100.60	6	-1	17	3
	6841417	JHC-12-061	1.37	0.25	3.90	4.78	0.419	0.051	0.084	-1	481	4595	3.37	98.94	-5	-1	38	3
	6841418	JHC-12-062	1.78	0.67	5.63	1.78	0.319	0.275	0.053	-1	349	496	1.93	99.43	-5	1	28	3
	6841419	JHC-12-063	1.73	0.87	2.26	3.97	0.620	0.664	0.159	-1	245	4410	3.99	98.60	-5	1	26	2
	6841421	JHC-12-065	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-5	1	29	8
	6841422	JHC-12-066	2.62	0.19	0.86	4.82	0.156	0.065	0.013	1	447	3674	2.18	99.47	20	-1	47	7
	6841423	JHC-12-067	0.40	0.64	7.23	0.62	0.189	0.098	0.020	-1	394	654	0.62	99.58	-5	1	24	4
	6841424	JHC-12-068	3.11	0.20	3.48	3.13	0.216	0.142	0.019	-1	423	1770	2.18	98.07	-5	-1	31	3
	6841425	JHC-12-069	3.86	3.35	6.73	0.13	1.755	0.193	0.431	-1	177	60	3.26	100.94	128	18	27	4
	6841426	JHC-12-070	3.02	0.23	1.70	4.09	0.545	0.346	0.090	1	319	3847	3.86	98.03	14	2	28	3
	6841427	JHC-12-071	2.89	0.12	1.09	5.08	0.325	0.221	0.038	-1	368	1376	2.82	98.86	-5	-1	27	3
	6841428	JHC-12-072	1.78	1.52	1.23	3.16	0.108	0.319	0.007	2	302	1833	2.74	98.34	-5	-1	17	2

**Open File 012A/1580**  
**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	MgO	CaO	Na <sub>2</sub> O	K <sub>2</sub> O	TiO <sub>2</sub>	MnO	P <sub>2</sub> O <sub>5</sub>	Cr	Zr	Ba	LOI	Total	V	Co	Ga	Ge	
		Units	wt. %	wt. %	wt. %	wt. %	wt. %	wt. %	ppm	ppm	ppm	wt. %	wt. %	ppm	ppm	ppm	ppm	
		Analysis Method	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	Grav		ICP-MS	ICP-MS	ICP-MS	ICP-MS	
	Detection Limit	0.01	0.01	0.01	0.01	0.001	0.001	0.001	1	1	1	0.01	5	1	1	1	1	
	6841429	JHC-12-073	1.81	1.01	2.05	2.26	0.141	0.266	0.013	1	363	1458	2.06	98.43	-5	-1	22	3
	6841431	JHC-12-074	1.48	0.37	3.38	2.59	0.171	0.217	0.014	-1	422	1717	1.70	98.07	-5	-1	23	3
	6841432	JHC-12-075	2.95	0.26	2.06	2.94	0.251	0.372	0.032	-1	258	1054	1.71	98.29	-5	-1	20	3
	6841433	JHC-12-076	0.77	0.23	2.50	4.18	0.156	0.143	0.014	-1	469	2172	1.27	99.55	-5	-1	21	3
	6841434	JHC-12-077	1.26	1.37	2.43	3.70	0.458	0.293	0.086	-1	299	907	2.20	99.10	13	1	24	2
	6841435	JHC-12-077b	4.58	4.33	4.77	0.45	1.953	0.246	0.219	-1	125	258	2.67	98.70	374	34	23	4
	6841436	JHC-12-078	1.25	5.81	8.40	0.33	1.823	0.133	0.212	-1	115	64	3.45	99.21	279	21	17	3
	6841437	JHC-12-079	12.12	8.74	1.46	2.18	0.939	0.263	0.834	663	157	1165	7.43	99.25	187	43	19	5
	6841438	JHC-12-080	0.39	0.25	6.50	1.41	0.231	0.087	0.044	6	280	653	0.61	100.35	-5	-1	-1	-1
	6841439	JHC-12-081	0.67	0.19	6.31	2.57	0.252	0.119	0.041	-1	414	782	0.35	98.54	5	1	22	3
	6841441	JHC-12-082	0.82	0.12	2.87	3.16	0.163	0.120	0.014	-1	362	4389	2.74	98.39	6	1	25	2
	6841442	JHC-12-083	1.14	0.39	4.28	3.35	0.205	0.059	0.026	-1	342	1514	1.13	98.59	5	1	24	2
	6841443	JHC-12-084	2.63	1.95	5.94	4.24	1.538	0.224	0.479	-1	169	1249	1.97	98.82	70	7	22	2
	6841444	JHC-12-085	0.96	0.11	1.58	3.89	0.167	0.127	0.021	-1	387	9723	3.04	98.82	10	-1	23	2
	6841445	JHC-12-086	0.52	0.25	2.60	8.55	0.212	0.024	0.035	-1	307	1292	0.60	99.76	-5	-1	17	2
	6841446	JHC-12-088	2.26	0.20	-0.01	8.04	0.348	0.150	0.043	-1	583	1589	3.37	98.49	-5	-1	31	3
	6841447	JHC-12-089	1.78	0.22	0.89	6.11	0.301	0.069	0.031	1	449	1361	4.08	99.75	-5	1	30	3
	6841448	JHC-12-090B	2.40	0.41	5.26	2.72	0.233	0.099	0.024	-1	386	517	1.47	99.94	-5	-1	21	2
	6841449	JHC-12-091	6.51	0.55	4.97	0.01	1.933	0.445	0.342	3	134	6	4.33	100.27	290	27	21	3
	6841451	JHC-12-092	2.82	0.12	5.64	0.60	0.267	0.147	0.034	2	323	377	1.98	99.68	19	3	20	2
	6841452	JHC-12-093	0.71	0.09	5.94	0.41	0.163	0.074	0.012	2	342	256	1.44	99.96	-5	4	21	2
	6841453	JHC-12-094	1.51	0.10	5.02	2.52	0.217	0.132	0.026	1	335	2722	1.38	100.07	-5	1	23	2
	6841454	JHC-12-095	1.40	0.10	4.54	2.79	0.224	0.133	0.024	-1	336	1987	1.28	99.72	-5	31	24	3
	6841455	JHC-12-096	2.45	4.07	1.58	2.82	0.610	0.154	0.146	-1	52	753	9.16	99.72	77	11	19	2
	6841456	JHC-12-097	3.09	2.72	1.74	3.06	0.583	0.178	0.117	2	66	484	4.92	98.83	98	12	17	2
	6841457	JHC-12-098	2.98	3.67	3.77	1.60	0.569	0.159	0.110	-1	65	258	5.66	100.59	95	14	17	3
	6841458	JHC-12-099	0.66	5.95	0.87	2.19	0.354	0.193	0.051	1	70	480	6.70	96.99	7	1	17	1
	6841459	JHC-12-100	3.00	3.40	4.77	1.00	0.428	0.145	0.057	3	75	442	5.26	99.73	133	13	14	2
	6841461	JHC-12-101	4.11	6.01	1.92	1.74	0.677	0.205	0.080	4	47	320	8.82	98.42	230	16	16	2
	6841462	JHC-12-102	1.57	3.20	2.33	3.01	0.739	0.179	0.091	4	53	506	8.11	98.21	281	25	17	2
	6841463	JHC-12-103	2.50	3.10	1.26	2.36	0.422	0.150	0.054	4	75	483	5.27	98.24	132	12	14	2
	6841464	JHC-12-104	3.41	3.62	0.89	2.09	0.424	0.210	0.054	4	77	379	6.49	98.46	129	10	13	1
	6841465	JHC-12-105	3.21	4.25	1.03	1.86	0.433	0.204	0.057	5	77	395	6.11	99.16	133	19	13	2
	6841466	JHC-12-106	0.79	1.44	0.90	2.97	0.432	0.117	0.054	3	82	921	5.51	98.77	119	11	13	2
	6841467	JHC-12-107	0.36	0.39	0.67	3.09	0.444	0.027	0.056	3	81	768	6.46	98.44	135	13	14	1
	6841468	JHC-12-108	2.89	3.86	2.78	1.17	0.427	0.159	0.053	5	78	301	5.33	99.16	129	13	12	1

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**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	MgO	CaO	Na2O	K2O	TiO2	MnO	P2O5	Cr	Zr	Ba	LOI	Total	V	Co	Ga	Ge
		Units	wt. %	ppm	ppm	ppm	wt. %	wt. %	ppm	ppm	ppm	ppm					
		Analysis Method	ICP-OES	Grav	ICP-MS	ICP-MS	ICP-MS	ICP-MS									
	Detection Limit	0.01	0.01	0.01	0.01	0.001	0.001	0.001	1	1	1	0.01	5	1	1	1	
	6841469 JHC-12-109	2.22	1.07	3.10	3.97	0.386	0.122	0.064	-1	304	942	1.84	98.24	7	1	25	3
	6841471 JHC-12-110	1.32	0.09	5.05	0.65	0.115	0.016	0.010	-1	344	226	1.13	99.93	-99	-99	-99	-99
	6841472 JHC-12-112	2.40	8.57	1.88	3.05	0.185	0.374	0.024	-1	288	849	7.37	99.96	9	2	43	5
	6841473 JHC-12-113	1.21	0.31	4.84	2.43	0.216	0.138	0.027	-1	341	852	1.23	100.78	-5	-1	-1	-1
	6841474 JHC-12-114	4.56	4.20	4.55	2.20	0.761	0.091	0.041	25	90	711	5.56	98.09	190	18	17	2
	6841475 JHC-12-115	5.09	5.14	5.25	1.44	1.078	0.144	0.091	3	46	497	7.21	99.50	306	21	16	2
	6841476 JHC-12-116	4.45	1.98	8.25	0.81	0.905	0.082	0.059	22	55	57	2.91	100.20	275	37	20	2
	6841477 JHC-12-117	5.46	4.49	4.42	0.26	2.304	0.293	0.951	3	71	103	5.18	100.70	215	17	20	4
	6841478 JHC-12-118	0.33	0.28	4.90	0.50	0.203	0.012	0.030	-1	363	283	0.64	100.77	-5	1	15	2
	6841479 JHC-12-119	2.83	2.32	4.05	2.28	2.196	0.090	0.555	12	192	727	3.81	99.06	235	19	27	4
	6841481 JHC-12-120	3.32	0.75	1.28	6.44	0.374	0.056	0.044	-1	631	2883	4.45	98.54	6	4	44	5
	6841482 JHC-12-121	0.53	0.90	7.06	1.29	0.321	0.069	0.036	-1	483	1348	2.42	98.71	-5	2	28	3
	6841483 JHC-12-122	0.71	1.39	8.77	0.76	0.293	0.045	0.023	-1	417	1028	2.46	100.15	23	5	24	3
	6841484 JHC-12-123	3.25	1.42	2.40	5.58	0.402	0.080	0.040	-1	664	2814	5.29	100.23	33	18	39	4
	6841485 JHC-12-124	1.93	0.46	3.72	3.63	0.380	0.038	0.044	2	533	1879	3.07	100.19	10	6	34	3
	6841486 JHC-12-125	2.26	4.05	4.79	1.85	2.164	0.155	0.959	6	154	702	5.95	100.34	193	31	23	4
	6841487 JHC-12-126	0.97	0.97	0.13	2.60	0.524	0.048	0.099	54	114	420	19.55	95.70	1529	19	18	6
	6841488 JHC-12-127	0.91	4.58	0.10	2.05	0.394	0.044	2.759	130	84	342	19.03	95.41	2528	20	18	6
	6841489 JHC-12-128	0.82	0.88	0.14	2.32	0.464	0.036	0.122	47	93	385	18.67	97.39	573	20	18	5
	6841491 JHC-12-129	1.00	6.54	0.04	2.34	0.391	0.039	4.111	168	79	419	16.90	96.29	2066	10	18	6
	6841492 JHC-12-130	1.25	2.10	0.14	2.73	0.416	0.075	0.665	92	88	468	21.02	94.68	4734	22	18	4
	6841493 JHC-12-131	2.01	1.95	0.19	4.09	0.682	0.394	0.337	36	164	1628	5.24	98.15	156	36	23	5
	6841494 JHC-12-132	2.14	2.57	0.17	4.08	0.697	0.476	0.307	38	197	1536	6.33	98.07	187	24	24	5
	6841495 JHC-12-133	2.88	2.15	5.81	0.44	0.406	0.261	0.059	17	22	356	2.94	99.23	232	23	15	4
	6841496 JHC-12-134	3.22	6.94	2.95	0.46	0.491	0.112	0.063	14	61	113	6.97	98.30	224	26	14	3
	6841497 JHC-12-135	4.26	7.35	0.64	2.01	0.440	0.178	0.059	25	65	198	9.30	96.56	209	29	13	3
	6841498 JHC-12-136	5.24	3.00	1.14	1.42	0.590	0.166	0.088	18	74	92	8.96	98.40	237	26	15	2
	6841499 JHC-12-137	4.75	4.35	1.15	1.44	0.517	0.361	0.087	15	75	275	8.49	97.44	223	27	14	2
	6841501 JHC-12-138	3.09	0.98	1.35	1.87	0.435	0.053	0.067	11	71	342	5.81	98.38	187	22	14	3
	6841502 JHC-12-139	2.10	0.75	1.74	1.78	0.424	0.040	0.064	2	97	382	4.94	98.73	125	70	15	2
	6841503 JHC-12-140	1.60	3.15	0.20	2.10	0.548	0.047	0.792	102	103	21550	13.45	96.04	2050	21	22	3
	6841504 JHC-12-141	1.30	2.27	0.16	1.70	0.346	0.029	0.488	54	68	5832	13.19	97.21	961	22	15	3
	6841505 JHC-12-142	6.15	5.81	1.79	1.65	4.001	0.255	1.449	1	522	6882	4.18	96.32	232	50	27	9
	6841506 JHC-12-143	1.54	3.36	1.85	1.93	0.231	0.031	0.112	4	41	18590	4.06	94.77	64	3	11	2
	6841507 JHC-12-144	1.19	0.46	2.67	2.03	0.224	0.021	0.072	4	33	78800	1.83	92.72	47	3	11	2
	6841508 JHC-12-145	2.12	1.05	-0.01	0.24	0.002	0.202	0.024	-1	3	284	18.66	43.21	7	1	60	5

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**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	MgO	CaO	Na2O	K2O	TiO2	MnO	P2O5	Cr	Zr	Ba	LOI	Total	V	Co	Ga	Ge
		Units	wt. %	ppm	ppm	ppm	wt. %	wt. %	ppm	ppm	ppm	ppm					
		Analysis Method	ICP-OES	Grav	ICP-MS	ICP-MS	ICP-MS	ICP-MS									
	Detection Limit	0.01	0.01	0.01	0.01	0.001	0.001	0.001	1	1	1	0.01	5	1	1	1	
6841509	JHC-12-146	2.40	0.29	0.28	3.75	0.424	0.110	0.071	-1	170	4625	6.23	95.75	12	1	18	3
6841511	JHC-12-147	3.75	4.83	5.33	0.86	3.161	0.199	1.805	-1	59	557	1.81	98.21	170	13	20	4
6841512	JHC-12-148	3.77	3.80	6.73	0.16	1.000	0.098	0.230	2	77	55	2.46	98.20	212	23	17	4
6841513	JHC-12-149	2.47	1.92	0.49	2.87	0.591	0.042	0.645	101	129	588	14.51	98.06	884	21	19	5
6841514	JHC-12-150	2.29	8.02	5.59	2.71	1.608	0.154	0.376	118	108	462	6.82	99.04	54	34	22	4
6841515	JHC-12-151	2.55	3.63	7.05	2.34	1.458	0.230	0.542	132	116	875	2.91	98.34	94	33	23	4
6841516	JHC-12-152	2.70	8.18	6.08	0.19	1.329	0.219	0.167	4	89	229	6.09	98.80	337	32	19	3
6841517	JHC-12-153	0.95	1.71	5.48	0.13	0.129	0.157	0.011	-1	293	41	1.32	99.28	8	3	17	2
6841518	JHC-12-154	2.47	0.50	3.54	3.99	0.538	0.330	0.153	2	227	4731	3.25	99.20	-5	1	19	2
6841519	JHC-12-155	2.54	1.40	4.51	2.47	0.640	0.267	0.153	-1	285	2330	2.37	98.02	10	1	27	4
6841521	JHC-12-156	1.44	1.63	7.71	1.78	0.606	0.180	0.170	-1	257	1491	1.10	98.79	6	1	20	4
6841522	JHC-12-157	1.91	1.76	0.07	1.07	0.324	0.123	1.321	70	85	746	11.34	98.08	1816	38	22	5
6841523	JHC-12-158	0.65	1.81	-0.01	2.38	0.348	0.823	1.179	52	90	325	21.55	98.35	1259	76	15	9
6841524	JHC-12-159	1.47	3.63	0.10	2.77	0.453	0.105	2.272	137	116	304	22.28	99.25	2457	26	20	7
6841525	JHC-12-160	0.51	3.15	-0.01	1.61	0.233	1.138	2.256	67	68	146	25.81	98.95	1364	43	12	10
6841526	JHC-12-161	1.29	3.14	-0.01	3.26	0.520	0.850	1.368	76	114	419	21.65	98.50	1888	72	21	10
6841527	JHC-12-162	0.51	2.74	-0.01	1.72	0.266	0.775	1.936	53	79	243	23.17	98.95	821	46	13	9
6841528	JHC-12-090A	2.33	0.12	4.39	1.86	0.308	0.081	0.050	1	239	1201	2.06	98.94	20	3	18	2

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**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	As	As	Rb	Rb	Sr	Y	Nb	Mo	Cd	In	Sn	Cs	La	Ce	Pr	Nd	Sm
		Units	ppm															
		Analysis Method	ICP-MS	ICP-ES	ICP-MS	ICP-ES	ICP-MS											
		Detection Limit	5	2	2	1	2	1	0.5	2	0.2	0.2	1	0.5	0.5	0.1	0.05	0.1
6841351	JHC-12-001	-99	-99	-99	-99	-99	-99	-99.0	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99
6841352	JHC-12-002	-5	-99	44	-99	22	65	6.5	-2	1.8	-0.2	3	-0.5	34.8	72.3	8.98	37.4	9.4
6841353	JHC-12-003	20	-99	97	-99	11	96	12.7	29	1.4	0.2	6	0.9	44.8	93.4	11.66	50.5	13.1
6841354	JHC-12-004	9	-99	37	-99	38	76	9.9	-2	-0.2	-0.2	3	-0.5	36.8	81.3	10.28	44.3	11.0
6841355	JHC-12-005	-5	-99	25	-99	421	15	11.2	-2	-0.2	-0.2	1	1.0	64.8	139.7	17.11	69.9	10.1
6841356	JHC-12-006	24	-99	17	-99	33	73	7.9	-2	-0.2	-0.2	3	-0.5	33.1	71.8	9.06	37.9	9.6
6841357	JHC-12-007	-5	-99	37	-99	27	99	8.9	-2	0.3	-0.2	5	-0.5	34.5	74.3	9.69	40.0	10.8
6841358	JHC-12-008	11	-99	36	-99	21	86	5.5	-2	0.7	0.3	3	-0.5	31.4	70.8	9.29	41.3	10.7
6841359	JHC-12-009	-5	-99	3	-99	93	24	2.6	-2	0.4	-0.2	1	-0.5	11.0	21.9	2.88	12.8	3.3
6841361	JHC-12-010	-5	-99	6	-99	97	45	5.2	-2	0.3	-0.2	1	-0.5	17.3	42.2	5.68	26.5	6.8
6841362	JHC-12-011	-5	-99	2	-99	158	34	2.7	-2	-0.2	-0.2	1	-0.5	8.3	18.9	2.67	13.7	4.1
6841363	JHC-12-012	-5	-99	3	-99	125	42	2.8	-2	-0.2	-0.2	1	-0.5	9.7	23.3	3.37	16.4	5.0
6841364	JHC-12-013	-5	-99	144	-99	34	127	10.8	-2	-0.2	0.2	4	1.6	54.7	117.5	14.59	61.5	16.4
6841365	JHC-12-014	5	-99	129	-99	34	124	11.4	-2	-0.2	0.2	3	1.7	47.7	101.1	12.13	55.2	12.9
6841366	JHC-12-015	6	-99	2	-99	34	76	8.5	-2	-0.2	-0.2	2	-0.5	30.7	63.2	7.80	33.2	8.4
6841367	JHC-12-016	-5	-99	6	-99	75	73	13.1	2	-0.2	-0.2	3	-0.5	35.9	74.6	9.31	38.7	9.8
6841368	JHC-12-017	14	-99	8	-99	92	85	13.0	-2	-0.2	-0.2	3	-0.5	41.5	87.6	10.74	47.8	12.1
6841369	JHC-12-018	-5	-99	11	-99	97	78	9.4	-2	0.2	-0.2	3	-0.5	17.1	40.4	5.29	25.0	8.3
6841371	JHC-12-018b	-5	-99	4	-99	72	73	6.4	-2	-0.2	-0.2	2	-0.5	35.1	74.6	9.39	40.9	8.6
6841372	JHC-12-019	-5	-99	8	-99	94	81	10.2	-2	0.4	-0.2	3	-0.5	31.7	68.3	8.67	38.0	10.0
6841373	JHC-12-020	23	-99	83	-99	24	102	8.3	-2	0.8	-0.2	4	-0.5	35.7	75.7	9.44	41.8	10.7
6841374	JHC-12-022	7	-99	64	-99	43	94	8.3	-2	0.6	-0.2	4	-0.5	32.7	71.3	9.32	41.0	11.3
6841375	JHC-12-023	-5	-99	21	-99	70	93	8.0	-2	0.6	-0.2	4	-0.5	34.9	74.6	9.75	43.1	11.6
6841376	JHC-12-024	37	-99	104	-99	24	97	11.9	2	1.1	0.3	6	0.5	41.8	94.4	12.17	52.6	14.6
6841377	JHC-12-025	30	-99	2	-99	34	2	2.3	25	238.2	26.7	11	-0.5	-0.5	0.4	-0.05	0.3	0.1
6841378	JHC-12-026	36	-99	75	-99	12	71	7.6	9	13.7	11.3	9	-0.5	31.0	65.4	8.29	36.1	10.8
6841379	JHC-12-027	-99	-99	-99	-99	-99	-99	-99.0	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99
6841381	JHC-12-028	24	-99	97	-99	23	97	11.7	-2	0.2	-0.2	7	-0.5	37.0	79.1	10.73	46.9	11.8
6841382	JHC-12-029	17	-99	47	-99	12	76	6.2	5	4.7	0.9	11	-0.5	22.2	49.1	6.46	29.1	8.0
6841383	JHC-12-030	8	-99	34	-99	25	69	6.0	2	0.3	0.2	2	0.5	27.0	59.2	7.58	33.9	8.8
6841384	JHC-12-031	9	-99	17	-99	53	74	6.4	-2	2.5	-0.2	2	-0.5	24.1	53.4	7.12	31.3	8.3
6841385	JHC-12-032	7	-99	54	-99	18	81	7.2	-2	0.4	-0.2	5	-0.5	41.6	86.3	10.61	46.3	11.7
6841386	JHC-12-033	8	-99	46	-99	17	69	6.7	-2	0.3	-0.2	5	-0.5	31.8	65.1	8.24	33.9	8.7
6841387	JHC-12-034	45	-99	44	-99	19	90	8.2	7	15.6	2.4	7	-0.5	37.1	72.7	9.29	41.5	11.8
6841388	JHC-12-035	10	-99	20	-99	229	49	6.4	-2	3.9	0.3	2	-0.5	36.3	68.9	8.75	39.4	9.5

**Open File 012A/1580**

**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	As	As	Rb	Rb	Sr	Y	Nb	Mo	Cd	In	Sn	Cs	La	Ce	Pr	Nd	Sm	
		Units	ppm																
		Analysis Method	ICP-MS	ICP-ES	ICP-MS	ICP-ES	ICP-MS												
29	JHC-12-036	Detection Limit	5	2	2	1	2	1	0.5	2	0.2	0.2	1	0.5	0.5	0.1	0.05	0.1	0.1
	JHC-12-037		5	-99	41	-99	60	75	8.3	-2	1.7	0.3	3	-0.5	53.7	120.1	14.49	60.3	15.6
	JHC-12-038		24	-99	61	-99	82	97	6.3	5	0.8	-0.2	3	0.5	31.5	64.6	8.02	36.6	9.5
	JHC-12-039		357	-99	5	-99	1864	14	0.9	10	172.4	12.7	15	-0.5	13.2	11.6	1.59	8.0	3.7
	JHC-12-039		120	-99	3	-99	632	4	-0.5	35	308.7	82.0	48	-0.5	-0.5	0.9	0.15	0.5	0.7
	JHC-12-040		5	-99	62	-99	13	87	6.7	-2	2.0	0.9	4	-0.5	29.7	63.6	8.30	37.8	9.9
	JHC-12-041		-5	-99	11	-99	61	90	6.5	-2	-0.2	-0.2	4	-0.5	25.4	60.2	7.83	35.8	10.5
	JHC-12-042		9	-99	33	-99	77	97	13.0	-2	3.8	0.3	4	-0.5	43.0	89.3	11.42	49.4	11.8
	JHC-12-043		17	-99	4	-99	54	98	8.8	-2	6.0	0.8	5	-0.5	30.6	67.1	8.60	37.4	10.5
	JHC-12-044		9	-99	4	-99	242	41	3.6	-2	5.6	1.1	2	-0.5	10.1	23.6	3.36	16.9	5.5
	JHC-12-045		-5	-99	58	-99	195	83	10.0	-2	1.5	0.7	3	-0.5	34.1	74.8	9.31	39.8	11.4
	JHC-12-046		22	-99	352	-99	2469	148	918.3	20	0.9	0.5	27	4.6	532.6	937.0	89.20	279.5	42.7
	JHC-12-047		8	-99	5	-99	59	92	11.1	-2	3.5	0.6	4	-0.5	41.3	90.9	11.67	51.6	13.9
	JHC-12-048		6	-99	12	-99	141	82	9.0	-2	2.8	0.6	4	-0.5	33.6	71.3	9.10	40.1	10.7
	JHC-12-049		-5	-99	72	-99	60	95	9.8	-2	2.3	0.5	4	0.5	45.2	94.9	11.71	50.7	13.2
	JHC-12-050		-5	-99	5	-99	94	71	9.2	-2	0.6	0.2	4	-0.5	33.4	74.0	9.69	40.6	10.8
	JHC-12-051		-5	-99	45	-99	218	44	7.5	-2	2.5	0.2	2	-0.5	17.5	41.6	5.50	25.4	6.8
	JHC-12-052		-5	-99	62	-99	104	33	5.1	-2	2.2	0.3	1	-0.5	10.9	25.1	3.57	16.8	4.6
	JHC-12-053		-5	-99	10	-99	220	93	8.3	-2	6.2	0.7	3	-0.5	33.7	71.5	9.42	40.3	10.7
	JHC-12-054		-5	-99	12	-99	83	21	2.4	-2	0.3	-0.2	1	-0.5	7.7	14.8	1.82	8.5	2.6
	JHC-12-055		-5	-99	8	-99	50	76	7.9	-2	2.2	-0.2	3	-0.5	27.9	59.5	7.63	33.0	9.1
	JHC-12-056		-5	-99	18	-99	74	94	8.9	-2	2.0	0.3	4	-0.5	26.3	62.8	8.38	37.3	10.1
	JHC-12-057		5	-99	26	-99	69	90	17.7	-2	0.3	0.2	3	0.8	20.3	43.1	5.73	24.9	7.1
	JHC-12-058		-5	-99	29	-99	42	104	15.7	-2	0.3	-0.2	5	0.6	22.7	54.1	6.95	32.0	9.0
	JHC-12-059		12	-99	83	-99	21	117	11.7	-2	0.9	-0.2	4	1.1	35.7	76.9	10.01	41.6	11.8
	JHC-12-060		28	-99	34	-99	13	85	9.7	3	1.4	0.3	4	-0.5	26.2	52.3	6.65	28.7	8.0
	JHC-12-061		20	-99	81	-99	14	109	11.5	2	0.9	-0.2	4	0.6	44.3	94.1	12.16	53.4	14.2
	JHC-12-062		-5	-99	30	-99	66	81	7.9	-2	0.8	-0.2	3	-0.5	36.3	75.2	9.49	40.5	10.2
	JHC-12-063		29	-99	65	-99	96	57	5.9	3	0.6	-0.2	2	-0.5	27.9	58.2	7.38	32.7	9.4
	JHC-12-065		-5	-99	114	-99	15	87	12.4	-2	-0.2	-0.2	3	1.2	36.7	78.9	9.98	42.9	10.6
	JHC-12-066		238	-99	25	-99	2096	59	5.5	10	32.4	3.4	5	-0.5	26.1	39.0	4.99	21.9	6.6
	JHC-12-067		7	-99	7	-99	71	85	6.2	-2	0.5	-0.2	2	-0.5	34.6	72.0	9.65	42.5	12.5
	JHC-12-068		-5	-99	61	-99	113	94	11.6	-2	0.4	-0.2	4	-0.5	33.7	72.8	9.40	40.4	11.8
	JHC-12-069		-5	-99	3	-99	101	52	6.7	-2	0.7	-0.2	2	-0.5	16.2	39.8	5.35	25.9	7.4
	JHC-12-070		37	-99	85	-99	25	74	8.2	4	4.5	0.8	3	-0.5	35.2	76.6	10.17	43.0	10.6
	JHC-12-071		15	-99	65	-99	13	76	9.0	-2	3.1	0.3	3	-0.5	34.8	74.3	9.17	39.3	10.3
	JHC-12-072		-5	-99	39	-99	43	61	5.7	-2	0.6	-0.2	3	-0.5	26.6	58.4	7.41	31.6	7.5

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**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	As	As	Rb	Rb	Sr	Y	Nb	Mo	Cd	In	Sn	Cs	La	Ce	Pr	Nd	Sm
		Units	ppm															
		Analysis Method	ICP-MS	ICP-ES	ICP-MS	ICP-ES	ICP-MS											
30	JHC-12-073	5	2	2	1	2	1	0.5	2	0.2	0.2	1	0.5	0.5	0.1	0.05	0.1	0.1
	JHC-12-074	9	-99	45	-99	38	80	7.4	-2	-0.2	-0.2	3	-0.5	32.6	74.1	9.57	41.3	12.1
	JHC-12-075	15	-99	40	-99	34	88	6.7	-2	0.9	-0.2	4	-0.5	31.4	70.7	9.24	40.3	11.0
	JHC-12-076	6	-99	56	-99	25	67	6.3	-2	0.6	-0.2	3	-0.5	44.8	95.5	12.26	52.5	12.2
	JHC-12-077	9	-99	44	-99	68	85	6.8	-2	1.0	-0.2	4	-0.5	33.1	73.1	9.83	41.7	10.7
	JHC-12-077b	50	-99	48	-99	46	69	11.9	2	1.2	0.6	4	-0.5	35.1	75.0	9.42	41.6	9.4
	JHC-12-078	-5	-99	7	-99	260	43	4.9	-2	0.5	-0.2	1	-0.5	10.7	25.2	3.60	18.1	5.6
	JHC-12-079	8	-99	6	-99	114	37	3.8	-2	0.7	-0.2	1	-0.5	7.7	18.3	2.72	14.5	4.8
	JHC-12-079	9	-99	44	-99	477	16	10.8	-2	0.4	-0.2	1	-0.5	70.4	157.2	19.22	76.4	11.8
	JHC-12-080	-5	-99	-2	-99	-2	-1	2.9	11	-0.2	-0.2	-1	-0.5	-0.5	-0.1	-0.05	-0.1	-0.1
	JHC-12-081	-5	-99	27	-99	49	92	8.3	-2	0.3	-0.2	4	-0.5	31.6	65.6	8.48	37.3	9.8
	JHC-12-082	55	-99	48	-99	66	88	6.2	8	1.7	0.5	4	-0.5	29.2	63.7	8.19	35.8	10.4
	JHC-12-083	-5	-99	46	-99	54	78	5.6	-2	0.5	0.2	3	-0.5	24.3	53.9	7.05	32.4	8.0
	JHC-12-084	-5	-99	66	-99	72	39	8.2	-2	0.7	-0.2	2	-0.5	18.7	39.1	5.25	22.8	6.4
	JHC-12-085	12	-99	51	-99	85	74	6.2	17	2.8	0.9	4	-0.5	26.4	56.4	7.37	32.0	8.3
	JHC-12-086	-5	-99	60	-99	39	63	6.7	-2	-0.2	-0.2	4	-0.5	49.0	98.3	11.89	48.4	10.0
	JHC-12-088	27	-99	175	-99	11	93	10.1	10	-0.2	-0.2	5	0.8	44.0	100.4	12.83	57.7	14.8
	JHC-12-089	61	-99	104	-99	13	49	7.2	2	0.5	-0.2	4	-0.5	31.1	81.7	9.49	40.5	9.8
	JHC-12-090B	-5	-99	43	-99	26	75	6.0	-2	0.3	-0.2	3	-0.5	23.2	51.2	6.62	27.8	7.5
	JHC-12-091	18	-99	2	-99	36	32	3.5	-2	0.5	-0.2	1	-0.5	12.9	31.0	4.14	19.5	5.0
	JHC-12-092	-5	-99	15	-99	41	54	13.3	-2	0.2	-0.2	2	-0.5	31.0	67.5	8.12	34.2	7.8
	JHC-12-093	19	-99	11	-99	40	60	13.6	2	-0.2	0.3	3	-0.5	32.5	68.2	8.39	34.3	8.0
	JHC-12-094	6	-99	35	-99	39	66	10.4	2	-0.2	-0.2	3	-0.5	34.3	76.0	9.54	40.2	9.9
	JHC-12-095	-5	-99	46	-99	32	67	9.9	-2	0.2	-0.2	3	-0.5	32.4	71.7	8.93	36.0	9.3
	JHC-12-096	7	-99	41	-99	135	29	2.8	-2	0.3	-0.2	2	-0.5	7.5	16.8	2.38	11.4	3.8
	JHC-12-097	6	-99	47	-99	90	24	2.8	-2	-0.2	-0.2	1	0.8	8.6	20.6	2.85	13.2	3.5
	JHC-12-098	-5	-99	23	-99	80	28	2.3	2	-0.2	-0.2	1	-0.5	7.9	18.9	2.46	12.5	3.5
	JHC-12-099	-5	-99	22	-99	82	57	12.8	-2	-0.2	-0.2	3	-0.5	22.7	48.3	6.08	26.8	7.1
	JHC-12-100	-5	-99	16	-99	98	25	1.9	-2	0.3	-0.2	1	-0.5	6.8	14.3	1.79	7.7	2.0
	JHC-12-101	-5	-99	22	-99	117	22	1.1	-2	0.2	-0.2	1	-0.5	5.5	13.1	1.81	8.9	2.8
	JHC-12-102	10	-99	38	-99	220	21	4.1	2	0.6	-0.2	1	-0.5	7.0	15.8	2.18	10.8	3.0
	JHC-12-103	5	-99	30	-99	59	20	3.0	-2	-0.2	-0.2	1	-0.5	8.1	17.0	2.25	9.2	2.4
	JHC-12-104	-5	-99	28	-99	64	22	2.6	-2	-0.2	-0.2	1	-0.5	7.5	15.7	2.04	8.7	2.2
	JHC-12-105	10	-99	24	-99	78	23	5.1	2	0.5	-0.2	-1	-0.5	9.0	20.1	2.41	10.8	2.7
	JHC-12-106	24	-99	30	-99	67	21	2.0	2	0.5	-0.2	1	-0.5	8.2	17.2	2.14	9.1	2.3
	JHC-12-107	23	-99	39	-99	56	29	2.0	3	1.8	0.6	1	-0.5	8.3	16.6	2.03	8.7	2.3
	JHC-12-108	-5	-99	17	-99	82	22	1.8	-2	-0.2	-0.2	1	-0.5	8.7	18.0	2.22	9.7	2.7

**Open File 012A/1580**  
**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	As	As	Rb	Rb	Sr	Y	Nb	Mo	Cd	In	Sn	Cs	La	Ce	Pr	Nd	Sm
		Units	ppm															
		Analysis Method	ICP-MS	ICP-ES	ICP-MS	ICP-ES	ICP-MS											
31	JHC-12-109	5	2	2	1	2	0.5	2	0.2	0.2	1	0.5	0.5	0.1	0.05	0.1	0.1	0.1
	JHC-12-110	-5	-99	46	-99	30	58	8.3	-2	0.3	-0.2	3	-0.5	31.1	66.7	8.40	34.6	8.7
	JHC-12-112	-99	-99	-99	-99	-99	-99.0	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99
	JHC-12-113	-5	-99	-2	-99	-2	-1	-0.5	-2	-0.2	-0.2	-1	-0.5	-0.5	-0.1	-0.05	-0.1	-0.1
	JHC-12-114	11	-99	30	-99	66	22	4.7	2	0.4	-0.2	1	-0.5	7.2	16.5	2.14	10.7	3.3
	JHC-12-115	23	-99	24	-99	98	24	3.3	-2	1.9	-0.2	1	-0.5	3.1	8.6	1.40	7.3	2.5
	JHC-12-116	-5	-99	19	-99	83	29	3.5	-2	0.4	-0.2	1	-0.5	8.9	20.8	2.69	12.2	3.5
	JHC-12-117	-5	-99	8	-99	96	40	2.6	-2	0.6	-0.2	1	0.6	8.8	24.2	3.83	21.0	6.4
	JHC-12-118	-5	-99	10	-99	21	61	8.8	-2	0.3	-0.2	2	-0.5	16.9	38.7	4.54	21.8	5.9
	JHC-12-119	-5	-99	46	-99	65	69	3.7	-2	0.3	-0.2	1	-0.5	18.7	40.3	5.64	28.8	9.1
	JHC-12-120	-5	-99	129	-99	34	118	17.5	-2	0.2	-0.2	6	0.8	52.4	115.4	14.68	61.7	15.0
	JHC-12-121	-5	-99	19	-99	56	106	11.4	-2	0.3	-0.2	4	-0.5	33.2	74.6	9.47	41.1	11.1
	JHC-12-122	6	-99	12	-99	66	73	9.2	-2	0.6	-0.2	5	-0.5	31.3	72.0	8.51	36.6	9.9
	JHC-12-123	14	-99	103	-99	44	134	12.9	-2	0.4	0.2	5	1.1	54.0	119.0	15.10	64.7	16.9
	JHC-12-124	-5	-99	68	-99	28	83	12.5	-2	0.5	-0.2	6	0.7	41.0	97.0	11.94	50.7	13.0
	JHC-12-125	24	-99	35	-99	71	47	4.0	-2	-0.2	-0.2	1	-0.5	22.2	51.3	6.59	30.2	8.1
	JHC-12-126	138	-99	67	-99	16	41	12.2	338	0.2	-0.2	3	1.0	29.6	52.8	7.49	29.8	5.8
	JHC-12-127	128	-99	54	-99	45	69	10.4	123	-0.2	-0.2	2	0.8	29.1	49.2	7.44	33.5	7.7
	JHC-12-128	34	-99	55	-99	17	39	10.1	96	-0.2	-0.2	2	0.7	34.1	64.5	8.59	35.1	6.8
	JHC-12-129	35	-99	55	-99	69	71	7.8	74	0.2	-0.2	2	1.0	36.7	61.9	10.06	44.4	10.5
	JHC-12-130	104	-99	79	-99	29	40	8.8	155	0.4	-0.2	2	1.5	17.3	30.2	4.41	17.9	4.1
	JHC-12-131	29	-99	94	-99	36	40	8.6	4	0.7	-0.2	2	1.0	38.7	111.2	9.46	37.4	8.0
	JHC-12-132	-5	-99	93	-99	37	49	8.9	21	0.4	-0.2	3	0.9	40.0	119.4	10.19	40.6	8.8
	JHC-12-133	18	-99	9	-99	107	14	4.4	-2	0.7	-0.2	1	-0.5	2.8	6.3	0.82	3.8	1.1
	JHC-12-134	-5	-99	7	-99	164	22	3.6	-2	0.7	-0.2	1	-0.5	5.2	12.2	1.59	7.3	2.0
	JHC-12-135	16	-99	21	-99	81	20	3.1	-2	1.1	-0.2	1	-0.5	6.3	14.1	1.78	8.0	2.2
	JHC-12-136	13	-99	14	-99	79	22	2.9	-2	1.2	0.4	1	-0.5	6.5	14.6	1.96	8.9	2.4
	JHC-12-137	30	-99	21	-99	95	23	2.6	-2	0.4	-0.2	1	-0.5	7.8	16.8	2.20	9.4	2.6
	JHC-12-138	9	-99	23	-99	62	25	2.6	-2	0.6	-0.2	1	-0.5	8.7	18.1	2.22	9.6	2.7
	JHC-12-139	10	-99	20	-99	67	27	2.9	-2	0.8	-0.2	1	-0.5	10.1	21.2	2.59	10.9	2.5
	JHC-12-140	6	-99	60	-99	107	52	12.0	67	0.3	-0.2	2	1.1	38.4	72.0	9.09	37.3	7.7
	JHC-12-141	72	-99	48	-99	121	47	7.0	81	-0.2	-0.2	1	0.6	27.5	54.5	6.37	26.3	5.3
	JHC-12-142	42	-99	67	-99	556	41	152.0	5	0.3	-0.2	3	3.6	100.3	202.8	23.65	93.8	16.5
	JHC-12-143	-5	-99	34	-99	111	15	2.5	2	1.7	-0.2	1	-0.5	5.5	9.8	1.29	5.4	1.4
	JHC-12-144	9	-99	17	-99	148	13	3.8	-2	-0.2	-0.2	1	-0.5	4.2	13.5	1.55	6.5	1.7
	JHC-12-145	253	-99	6	-99	7	18	1.0	64	704.6	25.0	4	-0.5	1.1	2.4	0.33	1.4	0.8

**Open File 012A/1580**  
**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	As	As	Rb	Rb	Sr	Y	Nb	Mo	Cd	In	Sn	Cs	La	Ce	Pr	Nd	Sm
		Units	ppm															
		Analysis Method	ICP-MS	ICP-ES	ICP-MS	ICP-ES	ICP-MS											
32	Detection Limit	5	2	2	1	2	1	0.5	2	0.2	0.2	1	0.5	0.5	0.1	0.05	0.1	0.1
	JHC-12-146	76	-99	57	-99	10	38	3.8	6	2.8	0.8	2	-0.5	19.8	41.7	5.23	23.4	6.3
	JHC-12-147	-5	-99	8	-99	106	43	1.8	-2	0.3	-0.2	1	-0.5	10.1	27.3	4.43	24.5	7.6
	JHC-12-148	10	-99	3	-99	133	26	2.4	-2	0.4	-0.2	1	-0.5	5.7	13.8	2.06	10.4	3.3
	JHC-12-149	102	-99	39	-99	43	73	11.8	54	0.4	-0.2	2	-0.5	39.4	82.2	10.46	45.1	10.5
	JHC-12-150	-5	-99	50	-99	160	34	3.6	-2	-0.2	-0.2	1	-0.5	12.8	29.6	4.05	19.2	5.2
	JHC-12-151	-5	-99	49	-99	107	38	8.1	-2	0.2	-0.2	1	-0.5	17.9	39.6	4.71	21.2	5.4
	JHC-12-152	-5	-99	4	-99	141	21	3.8	-2	0.2	-0.2	1	-0.5	8.5	19.1	2.43	11.9	3.0
	JHC-12-153	10	-99	3	-99	68	66	5.7	-2	0.5	-0.2	2	-0.5	22.6	47.5	6.28	28.0	7.6
	JHC-12-154	15	-99	55	-99	27	58	5.4	-2	1.0	-0.2	2	-0.5	24.4	48.3	6.26	28.5	7.1
	JHC-12-155	-5	-99	42	-99	76	62	6.3	-2	-0.2	-0.2	2	-0.5	26.4	56.4	7.38	32.8	9.0
	JHC-12-156	-5	-99	38	-99	96	56	5.8	-2	0.4	-0.2	2	-0.5	21.0	48.7	6.38	28.3	7.9
	JHC-12-157	186	-99	20	-99	41	54	7.5	200	1.2	-0.2	3	-0.5	37.7	45.3	9.16	39.5	7.9
	JHC-12-158	189	-99	42	-99	28	75	6.6	79	-0.2	-0.2	2	-0.5	43.9	52.0	11.10	48.0	11.3
	JHC-12-159	274	-99	80	-99	47	102	9.5	27	0.7	-0.2	2	1.6	25.3	30.1	5.98	26.1	6.4
	JHC-12-160	358	-99	31	-99	39	100	9.1	61	0.4	-0.2	2	-0.5	58.0	58.7	13.05	57.2	12.3
	JHC-12-161	324	-99	64	-99	33	76	13.0	105	0.7	-0.2	3	-0.5	66.8	89.1	16.69	71.4	14.8
	JHC-12-162	383	-99	30	-99	39	89	7.4	75	1.1	-0.2	1	-0.5	48.1	55.0	12.11	52.7	12.6
	JHC-12-090A	-5	-99	37	-99	36	26	6.0	-2	0.4	-0.2	2	-0.5	28.8	51.7	5.52	21.0	4.1

**Open File 012A/1580**  
**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Tl	Bi	Th	U	Be	Cu
		Units	ppm																
		Analysis Method	ICP-MS	ICP-ES	ICP-ES														
		Detection Limit	0.05	0.1	0.1	0.1	0.1	0.05	0.1	0.05	0.2	0.5	1	0.1	0.4	0.1	0.1	0.1	1
6841351	JHC-12-001	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	1.9	85	
6841352	JHC-12-002	1.71	11.7	1.9	11.6	2.5	7.7	1.13	7.8	1.15	8.9	0.5	-1	-0.1	-0.4	14.1	2.8	1.8	17
6841353	JHC-12-003	2.16	14.3	2.6	17.0	3.5	11.7	1.73	12.0	1.92	11.0	1.6	4	0.5	-0.4	11.6	2.6	1.2	480
6841354	JHC-12-004	2.07	12.3	2.1	13.9	3.0	8.9	1.30	9.9	1.41	11.1	1.3	3	0.3	-0.4	11.9	2.8	1.3	10
6841355	JHC-12-005	2.99	6.7	0.7	3.0	0.6	1.5	0.18	1.3	0.17	3.4	1.0	3	0.2	-0.4	10.4	2.2	1.3	37
6841356	JHC-12-006	1.78	10.7	1.9	13.5	2.8	8.8	1.34	9.2	1.36	10.0	0.9	2	0.1	-0.4	10.7	2.5	1.8	40
6841357	JHC-12-007	2.11	13.9	2.5	17.8	3.6	11.3	1.70	11.8	1.75	12.6	0.9	2	-0.1	-0.4	13.3	3.4	2.5	50
6841358	JHC-12-008	2.47	13.6	2.3	15.9	3.2	10.2	1.40	10.0	1.50	10.4	1.0	1	-0.1	1.0	6.9	1.7	1.8	35
6841359	JHC-12-009	1.32	4.1	0.7	4.7	0.9	2.7	0.39	2.8	0.40	2.4	-0.5	-1	-0.1	0.9	1.2	0.4	0.5	11
6841361	JHC-12-010	2.56	8.1	1.3	8.3	1.6	5.1	0.72	4.8	0.77	5.2	1.3	2	-0.1	-0.4	2.9	0.3	0.8	-1
6841362	JHC-12-011	1.40	5.1	1.0	6.5	1.3	3.9	0.54	3.7	0.54	3.2	-0.5	1	-0.1	-0.4	1.3	0.4	0.5	6
6841363	JHC-12-012	1.84	7.1	1.2	7.5	1.6	5.0	0.66	4.5	0.65	3.8	-0.5	-1	-0.1	-0.4	1.6	0.5	0.7	7
6841364	JHC-12-013	2.91	19.3	3.4	24.5	5.0	15.3	2.14	14.6	2.04	17.5	0.7	2	0.8	-0.4	14.2	0.2	2.0	-1
6841365	JHC-12-014	2.22	16.8	3.1	19.6	4.3	14.6	2.16	15.6	2.29	16.2	1.2	3	0.2	-0.4	12.5	0.4	3.4	-1
6841366	JHC-12-015	1.15	10.4	2.0	13.5	3.1	9.7	1.56	11.1	1.73	10.4	-0.5	-1	0.1	-0.4	8.5	0.9	1.5	6
6841367	JHC-12-016	2.08	11.1	2.0	13.0	2.7	8.6	1.24	8.9	1.33	9.0	1.3	4	0.2	-0.4	6.4	1.5	1.1	16
6841368	JHC-12-017	2.64	14.4	2.5	14.8	3.2	9.6	1.40	9.5	1.41	13.1	1.0	2	0.3	-0.4	9.6	1.0	1.0	5
6841369	JHC-12-018	1.83	9.9	1.9	13.5	2.8	9.2	1.32	9.5	1.40	10.4	0.7	1	0.2	-0.4	7.4	1.8	1.5	1
6841371	JHC-12-018b	1.93	10.0	1.7	12.2	2.6	9.1	1.42	10.2	1.64	8.2	0.6	-1	-0.1	-0.4	5.9	1.2	1.2	1
6841372	JHC-12-019	1.99	12.0	2.1	13.8	2.9	9.4	1.35	9.1	1.44	10.4	1.0	2	0.1	-0.4	7.2	1.8	1.7	2
6841373	JHC-12-020	2.10	14.1	2.6	17.4	3.6	11.6	1.74	12.3	1.83	13.0	0.7	2	-0.1	-0.4	9.0	2.0	2.2	133
6841374	JHC-12-022	2.01	13.6	2.5	16.2	3.5	11.2	1.61	12.0	1.75	12.6	0.7	-1	-0.1	-0.4	8.7	2.0	2.4	3
6841375	JHC-12-023	2.10	14.4	2.6	17.3	3.6	11.9	1.79	12.8	1.92	13.5	0.6	1	-0.1	-0.4	9.0	2.4	2.4	-1
6841376	JHC-12-024	2.20	16.0	2.9	19.2	3.9	12.1	1.80	12.2	1.63	16.8	1.4	8	0.3	-0.4	10.7	0.4	2.8	13
6841377	JHC-12-025	0.34	0.4	-0.1	0.3	-0.1	-0.1	-0.05	-0.1	-0.05	-0.2	0.7	3	0.2	-0.4	-0.1	0.8	-0.1	37020
6841378	JHC-12-026	2.86	12.4	2.0	12.3	2.6	7.8	1.14	8.1	1.22	7.2	0.7	6	-0.1	-0.4	6.1	3.2	2.0	867
6841379	JHC-12-027	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	1.2	29	
6841381	JHC-12-028	1.72	15.7	2.6	17.7	3.7	11.6	1.71	11.9	1.71	14.4	1.3	5	0.3	2.3	9.1	1.3	2.0	8
6841382	JHC-12-029	1.76	10.4	1.8	13.1	2.7	8.9	1.30	9.2	1.43	10.0	0.6	2	-0.1	1.1	6.2	2.0	1.6	424
6841383	JHC-12-030	1.84	10.0	1.8	12.7	2.5	8.0	1.22	9.1	1.21	10.4	0.5	-1	-0.1	0.7	6.3	2.6	0.8	431
6841384	JHC-12-031	1.03	10.7	1.9	13.5	2.8	8.7	1.27	9.0	1.37	10.7	1.9	-1	-0.1	0.5	6.8	2.2	1.2	6
6841385	JHC-12-032	1.48	13.1	2.3	15.6	3.3	10.2	1.47	10.5	1.63	13.4	0.6	1	-0.1	-0.4	11.3	3.5	1.7	153
6841386	JHC-12-033	1.66	10.2	1.7	12.1	2.6	8.6	1.18	9.2	1.28	11.4	3.5	8	1.5	-0.4	8.7	3.3	1.9	264
6841387	JHC-12-034	4.64	13.9	2.3	14.5	2.8	8.2	1.20	8.0	1.23	7.9	1.4	3	2.8	3.2	6.4	6.9	1.5	139
6841388	JHC-12-035	2.38	10.6	1.5	9.8	2.0	6.1	0.96	6.8	1.05	4.9	0.5	5	-0.1	-0.4	4.0	0.5	1.3	17

**Open File 012A/1580**  
**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Tl	Bi	Th	U	Be	Cu
		Units	ppm																
		Analysis Method	ICP-MS	ICP-ES	ICP-ES														
34	JHC-12-036	0.05	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.05	0.2	0.5	1	0.1	0.4	0.1	0.1	0.1	
	JHC-12-037	3.02	16.6	2.6	15.7	3.0	9.1	1.28	8.6	1.26	12.0	0.8	1	-0.1	-0.4	7.1	0.2	1.9	
	JHC-12-038	2.15	12.5	2.3	16.6	3.4	10.6	1.52	10.2	1.46	10.0	0.6	2	-0.1	0.6	7.9	2.0	1.9	
	JHC-12-039	14.99	5.4	0.6	2.5	0.4	1.0	0.15	0.8	0.13	0.8	-0.5	2	-0.1	1.7	0.7	3.4	0.2	
	JHC-12-039	5.04	1.0	0.2	0.8	0.1	0.3	-0.05	0.2	-0.05	-0.2	-0.5	-1	-0.1	-0.4	-0.1	2.6	-0.1	
	JHC-12-040	2.10	12.7	2.2	14.6	3.1	10.2	1.45	10.5	1.60	11.3	0.6	-1	-0.1	-0.4	7.3	2.0	2.4	
	JHC-12-041	1.93	12.8	2.3	15.5	3.2	10.1	1.50	9.8	1.47	12.0	0.7	-1	0.2	-0.4	7.9	1.4	1.8	
	JHC-12-042	3.36	13.5	2.4	16.4	3.6	11.6	1.71	11.5	1.81	12.1	1.1	3	0.1	-0.4	6.6	0.5	2.2	
	JHC-12-043	1.41	12.2	2.3	16.7	3.6	11.3	1.67	12.1	1.76	12.1	0.9	2	-0.1	-0.4	7.4	2.3	1.7	
	JHC-12-044	1.83	7.0	1.2	7.6	1.5	4.8	0.67	4.7	0.70	3.7	-0.5	7	-0.1	-0.4	1.6	0.8	0.6	
	JHC-12-045	3.12	13.2	2.3	15.4	3.2	10.1	1.42	10.0	1.41	11.8	0.8	2	-0.1	-0.4	6.5	0.3	2.3	
	JHC-12-046	11.70	37.8	5.0	28.4	5.1	15.4	2.16	15.6	2.22	91.8	63.3	13	-0.1	1.2	103.2	28.2	1.4	
	JHC-12-047	2.29	14.7	2.6	16.6	3.4	10.8	1.61	10.9	1.59	13.1	1.5	-1	-0.1	-0.4	8.3	2.2	1.8	
	JHC-12-048	2.25	12.1	2.2	14.1	3.0	9.2	1.36	9.5	1.38	11.1	0.7	-1	-0.1	-0.4	7.8	2.0	2.1	
	JHC-12-049	2.62	14.8	2.5	16.7	3.4	11.1	1.61	11.6	1.70	14.4	0.8	1	-0.1	-0.4	10.0	2.0	2.9	
	JHC-12-050	2.06	11.4	2.0	13.7	2.7	8.6	1.24	8.6	1.33	11.8	1.5	-1	-0.1	-0.4	6.5	0.4	1.2	
	JHC-12-051	2.41	8.0	1.3	7.9	1.6	4.8	0.64	4.3	0.56	3.3	0.9	3	0.1	-0.4	1.6	0.5	1.6	
	JHC-12-052	1.61	5.9	1.0	6.3	1.3	3.8	0.52	3.4	0.49	3.3	0.6	2	-0.1	-0.4	1.3	0.4	2.0	
	JHC-12-053	2.58	13.1	2.4	15.7	3.5	10.9	1.57	10.5	1.60	10.5	0.6	2	-0.1	1.0	5.7	1.7	0.6	
	JHC-12-054	0.84	3.4	0.5	3.5	0.8	2.5	0.38	2.4	0.37	2.1	-0.5	1	-0.1	-0.4	0.9	0.8	1.1	
	JHC-12-055	1.55	10.2	1.9	12.8	2.7	8.9	1.30	8.8	1.34	9.4	0.5	-1	-0.1	1.0	5.3	1.1	1.0	
	JHC-12-056	2.03	12.4	2.3	15.7	3.3	11.2	1.63	11.4	1.71	12.6	0.7	1	-0.1	-0.4	12.5	3.2	2.2	
	JHC-12-057	1.09	10.4	2.2	15.4	3.4	10.2	1.54	10.2	1.58	10.4	2.3	9	0.5	-0.4	6.4	2.2	1.0	
	JHC-12-058	1.70	12.2	2.4	17.2	3.6	12.3	1.83	12.5	1.86	13.2	1.9	5	0.3	-0.4	13.8	3.2	3.0	
	JHC-12-059	2.59	13.7	2.5	17.9	3.9	12.9	1.82	12.6	1.85	12.3	1.6	3	0.2	0.6	10.0	3.6	2.2	
	JHC-12-060	3.04	10.2	1.8	12.9	2.7	8.8	1.35	8.7	1.45	7.7	0.8	4	2.0	1.9	6.2	8.3	1.3	
	JHC-12-061	4.16	16.3	2.9	18.6	4.0	12.2	1.76	12.3	1.75	13.5	1.0	4	-0.1	0.5	9.5	2.9	1.8	
	JHC-12-062	2.08	11.6	2.0	13.2	2.8	9.1	1.31	9.3	1.36	9.7	0.6	-1	-0.1	0.5	5.6	1.3	2.2	
	JHC-12-063	3.20	9.5	1.6	10.4	2.0	6.7	0.92	6.6	0.96	7.1	-0.5	6	-0.1	0.5	6.1	1.6	2.0	
	JHC-12-065	1.74	12.2	2.4	15.3	3.1	10.4	1.55	10.6	1.56	11.9	0.7	11	5.0	-0.4	8.9	2.0	2.5	
	JHC-12-066	14.98	8.4	1.5	9.9	2.2	7.2	1.08	7.4	1.07	8.6	-0.5	5	-0.1	1.8	6.5	6.3	0.9	
	JHC-12-067	1.95	14.6	2.5	16.9	3.2	10.1	1.52	11.3	1.59	11.4	1.9	3	0.1	-0.4	7.4	1.8	2.3	
	JHC-12-068	1.77	14.7	2.6	17.0	3.5	11.3	1.63	11.4	1.75	12.3	0.9	2	-0.1	-0.4	8.0	2.2	2.2	
	JHC-12-069	2.39	8.6	1.4	9.1	1.9	5.7	0.82	5.6	0.87	5.1	0.6	2	-0.1	0.6	2.8	0.5	1.0	
	JHC-12-070	2.90	12.5	1.9	12.9	2.8	8.5	1.28	8.3	1.32	9.0	1.1	5	-0.1	0.7	8.5	2.7	3.9	
	JHC-12-071	2.35	11.6	2.0	13.9	2.7	8.9	1.33	9.3	1.46	10.4	0.7	2	-0.1	0.8	12.5	3.5	2.0	
	JHC-12-072	1.20	8.8	1.5	10.4	2.3	8.0	1.19	8.5	1.25	8.9	0.5	1	-0.1	-0.4	11.0	2.8	1.3	

**Open File 012A/1580**

**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Tl	Bi	Th	U	Be	Cu
		Units	ppm																
		Analysis Method	ICP-MS	ICP-ES	ICP-ES														
		Detection Limit	0.05	0.1	0.1	0.1	0.1	0.05	0.1	0.05	0.2	0.5	1	0.1	0.4	0.1	0.1	1	
6841429	JHC-12-073	1.67	11.6	2.2	13.9	2.8	9.5	1.40	9.0	1.48	10.9	0.6	2	0.3	-0.4	9.2	2.4	1.4	3
6841431	JHC-12-074	1.72	12.9	2.4	16.1	3.3	11.1	1.63	11.4	1.77	12.6	0.6	1	-0.1	-0.4	10.5	3.2	1.8	13
6841432	JHC-12-075	2.03	12.7	2.0	12.2	2.4	7.5	1.08	7.3	1.14	7.8	-0.5	1	-0.1	-0.4	9.3	3.4	1.8	5
6841433	JHC-12-076	1.75	12.8	2.3	16.0	3.4	10.9	1.63	11.4	1.74	12.6	0.5	1	-0.1	-0.4	10.9	3.2	1.4	4
6841434	JHC-12-077	2.32	10.8	1.8	11.7	2.4	7.6	1.13	8.1	1.21	9.1	1.0	5	-0.1	-0.4	8.6	1.9	2.0	8
6841435	JHC-12-077b	2.02	7.0	1.2	8.1	1.7	5.1	0.70	4.7	0.67	3.6	0.5	2	-0.1	-0.4	1.6	0.5	1.0	19
6841436	JHC-12-078	1.67	5.9	1.1	7.0	1.4	4.3	0.59	4.0	0.60	3.5	-0.5	1	-0.1	-0.4	1.5	0.5	0.7	2
6841437	JHC-12-079	2.98	7.5	0.8	3.7	0.6	1.7	0.21	1.4	0.18	3.7	1.9	-1	-0.1	-0.4	11.4	1.8	1.7	40
6841438	JHC-12-080	-0.05	-0.1	-0.1	-0.1	-0.1	-0.1	-0.05	-0.1	-0.05	-0.2	-0.5	2	0.1	-0.4	-0.1	-0.1	1.3	2
6841439	JHC-12-081	1.66	12.2	2.2	15.5	3.3	10.8	1.63	11.5	1.72	11.5	0.6	-1	-0.1	-0.4	8.4	2.4	1.6	2
6841441	JHC-12-082	2.24	12.7	2.3	14.8	3.1	9.3	1.38	9.9	1.43	10.1	0.7	3	-0.1	1.0	11.4	4.6	1.9	155
6841442	JHC-12-083	1.99	10.4	1.9	13.6	2.8	9.3	1.33	9.3	1.39	9.7	0.5	1	-0.1	-0.4	6.8	1.8	1.9	2
6841443	JHC-12-084	2.19	7.8	1.2	7.6	1.6	4.7	0.71	4.3	0.69	4.1	1.3	4	-0.1	0.9	3.1	0.9	2.1	2
6841444	JHC-12-085	1.90	11.5	2.0	13.9	2.7	8.5	1.24	8.7	1.25	8.7	0.8	2	-0.1	0.5	10.0	4.3	2.0	1143
6841445	JHC-12-086	1.40	10.2	1.8	11.4	2.4	7.7	1.14	8.3	1.25	8.2	0.7	-1	-0.1	-0.4	13.1	2.4	1.4	2
6841446	JHC-12-088	3.30	17.2	3.2	20.5	4.0	11.9	1.66	10.8	1.53	14.8	1.1	4	1.4	-0.4	15.1	0.8	3.1	8
6841447	JHC-12-089	2.15	10.8	1.9	11.7	2.1	6.0	0.84	5.5	0.74	12.5	0.8	2	-0.1	-0.4	12.1	0.5	2.2	132
6841448	JHC-12-090B	1.41	9.5	1.8	13.1	2.9	9.0	1.35	9.6	1.46	10.1	-0.5	-1	-0.1	-0.4	6.9	1.9	1.7	3
6841449	JHC-12-091	1.53	5.8	1.0	6.4	1.3	3.7	0.49	3.6	0.51	3.6	-0.5	-1	-0.1	0.9	2.5	0.8	1.6	214
6841451	JHC-12-092	1.42	7.8	1.3	8.7	1.9	5.9	0.93	6.8	1.08	8.7	1.5	4	-0.1	-0.4	8.8	2.4	1.6	121
6841452	JHC-12-093	1.33	9.5	1.5	10.4	2.1	6.9	0.99	7.6	1.11	9.7	1.4	3	-0.1	0.7	10.6	2.8	1.0	245
6841453	JHC-12-094	1.82	10.6	1.7	11.4	2.3	7.7	1.17	8.1	1.24	9.9	1.1	3	-0.1	-0.4	9.5	3.0	1.7	9
6841454	JHC-12-095	1.53	9.3	1.7	11.8	2.5	7.6	1.11	8.2	1.21	9.6	0.9	2	-0.1	-0.4	9.4	2.8	1.9	2
6841455	JHC-12-096	1.16	4.6	0.8	4.9	1.1	3.3	0.50	3.3	0.50	2.0	-0.5	2	-0.1	-0.4	1.2	0.4	0.5	739
6841456	JHC-12-097	1.54	4.2	0.7	4.4	0.9	2.8	0.42	3.0	0.45	2.2	-0.5	1	-0.1	-0.4	1.5	0.5	0.5	55
6841457	JHC-12-098	1.06	4.2	0.8	4.8	1.0	3.3	0.48	3.3	0.50	2.2	-0.5	1	-0.1	-0.4	1.4	0.5	0.4	40
6841458	JHC-12-099	1.21	8.9	1.5	10.0	2.1	6.5	1.00	7.1	1.03	8.9	1.7	5	0.3	0.4	8.8	2.0	0.6	36
6841459	JHC-12-100	0.64	2.6	0.5	3.8	0.8	3.0	0.44	3.2	0.53	2.6	-0.5	-1	-0.1	-0.4	2.9	0.8	0.4	30
6841461	JHC-12-101	0.92	3.4	0.6	3.8	0.9	2.8	0.40	2.6	0.41	1.7	0.8	4	-0.1	-0.4	1.1	0.4	0.4	36
6841462	JHC-12-102	0.77	3.7	0.6	3.7	0.9	2.5	0.42	2.8	0.46	2.0	0.7	4	-0.1	0.4	1.3	0.5	0.7	42
6841463	JHC-12-103	0.70	2.8	0.5	3.4	0.7	2.4	0.36	2.6	0.43	2.6	-0.5	2	-0.1	-0.4	2.9	1.0	0.5	46
6841464	JHC-12-104	0.75	2.9	0.6	3.8	0.8	2.6	0.41	2.9	0.46	2.6	-0.5	1	-0.1	-0.4	2.8	0.9	0.4	14
6841465	JHC-12-105	0.73	3.2	0.5	3.8	0.8	2.6	0.36	2.8	0.45	2.5	-0.5	1	-0.1	-0.4	2.9	0.9	0.4	45
6841466	JHC-12-106	0.62	3.2	0.5	3.5	0.7	2.3	0.37	2.4	0.39	2.3	-0.5	-1	-0.1	-0.4	2.5	0.8	0.5	50
6841467	JHC-12-107	0.65	3.4	0.6	4.4	1.0	3.1	0.49	3.2	0.48	2.6	-0.5	1	-0.1	-0.4	3.1	0.9	0.5	131
6841468	JHC-12-108	0.60	3.0	0.5	3.6	0.8	2.5	0.39	2.9	0.44	2.5	-0.5	-1	-0.1	-0.4	2.9	0.8	0.4	26

**Open File 012A/1580**  
**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Tl	Bi	Th	U	Be	Cu
		Units	ppm																
		Analysis Method	ICP-MS	ICP-ES	ICP-ES														
36	JHC-12-109	0.05	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.05	0.2	0.5	1	0.1	0.4	0.1	0.1	0.1	
	JHC-12-110	1.66	8.3	1.5	9.4	2.1	6.7	1.00	7.4	1.13	8.5	0.5	1	-0.1	-0.4	10.2	3.1	2.3	
	JHC-12-112	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	-99	1.0	2	
	JHC-12-113	3.04	18.7	3.5	23.1	4.9	16.0	2.30	16.2	2.60	19.7	2.9	6	-0.1	0.8	19.7	5.4	1.3	
	JHC-12-114	-0.05	-0.1	-0.1	-0.1	-0.1	-0.1	-0.05	-0.1	-0.05	-0.2	-0.5	-1	-0.1	0.6	-0.1	1.2	4	
	JHC-12-115	0.84	3.6	0.6	4.4	0.9	2.8	0.41	2.8	0.43	2.7	-0.5	2	-0.1	-0.4	2.4	0.8	0.6	
	JHC-12-116	0.90	3.4	0.6	4.1	0.9	2.7	0.37	2.7	0.39	1.4	-0.5	-1	-0.1	-0.4	0.4	0.1	0.3	
	JHC-12-117	1.24	4.6	0.8	5.4	1.1	3.5	0.51	3.4	0.47	2.0	-0.5	-1	-0.1	-0.4	1.5	0.6	0.4	
	JHC-12-118	2.63	8.2	1.2	7.9	1.6	4.4	0.58	3.8	0.54	2.3	-0.5	-1	-0.1	0.4	1.5	0.4	0.6	
	JHC-12-119	1.06	7.1	1.5	10.0	2.3	7.2	1.04	7.0	1.05	9.7	0.6	1	-0.1	-0.4	9.5	1.6	1.7	
	JHC-12-120	2.54	12.3	2.0	12.3	2.4	7.2	1.01	6.4	0.96	3.9	-0.5	4	-0.1	-0.4	3.7	4.2	2.0	
	JHC-12-121	2.87	17.0	3.3	20.6	4.3	13.7	2.14	14.5	2.13	18.6	2.2	6	-0.1	-0.4	17.9	1.7	6.0	
	JHC-12-122	2.22	13.6	2.5	18.1	3.9	12.6	1.88	13.1	1.93	13.6	1.2	5	-0.1	-0.4	13.9	1.5	1.8	
	JHC-12-123	1.87	11.0	1.8	12.3	2.7	8.8	1.33	9.5	1.41	12.5	0.8	3	-0.1	-0.4	12.6	1.0	2.3	
	JHC-12-124	3.63	19.6	3.5	24.3	4.8	15.4	2.23	15.3	2.24	18.8	1.0	2	-0.1	-0.4	17.8	0.2	4.4	
	JHC-12-125	2.91	15.1	2.6	16.5	3.1	9.9	1.40	10.0	1.47	15.5	0.9	1	-0.1	-0.4	15.1	0.2	3.3	
	JHC-12-126	2.79	9.6	1.5	8.9	1.7	5.3	0.75	4.7	0.74	4.7	-0.5	1	-0.1	-0.4	4.8	0.9	0.7	
	JHC-12-127	1.02	5.8	0.9	6.2	1.3	4.3	0.64	4.6	0.69	2.8	1.2	8	-0.1	-0.4	9.1	163.5	3.8	
	JHC-12-128	2.20	9.3	1.4	9.6	2.0	6.6	0.94	6.6	1.03	2.5	1.0	5	-0.1	-0.4	8.1	70.7	2.8	
	JHC-12-129	1.28	7.1	1.0	6.5	1.3	3.9	0.53	3.6	0.55	2.4	0.9	3	-0.1	-0.4	8.5	68.1	3.4	
	JHC-12-130	2.81	12.7	1.9	11.6	2.2	6.4	0.86	5.5	0.86	2.4	1.0	3	-0.1	-0.4	7.2	51.3	3.0	
	JHC-12-131	0.98	4.5	0.8	5.2	1.1	3.8	0.54	3.9	0.61	2.3	1.0	4	-0.1	-0.4	6.5	53.1	3.3	
	JHC-12-132	1.93	8.2	1.2	7.2	1.4	4.3	0.65	4.1	0.58	4.7	0.9	2	-0.1	-0.4	9.1	2.8	2.5	
	JHC-12-133	1.87	9.6	1.5	9.1	1.8	5.3	0.78	5.4	0.77	5.5	1.0	2	-0.1	-0.4	9.3	6.9	2.7	
	JHC-12-134	0.40	1.6	0.3	2.3	0.5	1.5	0.26	1.7	0.25	0.9	0.7	2	-0.1	-0.4	0.7	0.6	0.3	
	JHC-12-135	0.65	3.2	0.5	3.7	0.7	2.4	0.36	2.5	0.39	2.1	0.6	2	-0.1	-0.4	1.6	0.5	0.3	
	JHC-12-136	0.59	2.7	0.5	3.2	0.7	2.2	0.33	2.3	0.35	2.1	0.6	1	-0.1	-0.4	1.9	0.8	0.3	
	JHC-12-137	0.68	3.1	0.5	3.6	0.8	2.5	0.33	2.7	0.37	2.4	0.7	1	-0.1	-0.4	1.9	0.6	0.4	
	JHC-12-138	0.82	3.5	0.6	3.8	0.8	2.6	0.36	2.6	0.39	2.3	-0.5	2	-0.1	-0.4	1.9	0.7	0.4	
	JHC-12-139	0.79	3.4	0.6	3.8	0.8	2.6	0.39	2.8	0.41	2.4	-0.5	3	-0.1	-0.4	2.4	0.8	0.4	
	JHC-12-140	0.83	3.6	0.7	4.4	0.9	3.0	0.46	3.2	0.49	3.1	-0.5	1	-0.1	-0.4	3.4	1.0	0.5	
	JHC-12-141	3.17	8.4	1.3	7.8	1.6	4.8	0.68	4.4	0.64	2.9	1.8	5	-0.1	-0.4	9.9	47.0	4.5	
	JHC-12-142	1.38	5.9	0.9	5.9	1.3	4.2	0.61	3.8	0.53	1.8	0.6	1	-0.1	-0.4	6.5	40.7	2.9	
	JHC-12-143	5.04	13.9	1.7	9.1	1.5	4.2	0.55	3.7	0.48	11.5	9.6	4	-0.1	-0.4	10.0	2.8	2.8	
	JHC-12-144	1.77	1.9	0.3	2.4	0.5	1.5	0.24	1.7	0.27	1.3	0.6	2	-0.1	-0.4	1.0	1.9	0.5	
	JHC-12-145	6.27	2.0	0.3	2.0	0.4	1.4	0.23	1.6	0.23	0.9	-0.5	1	-0.1	-0.4	0.8	1.2	0.3	
	JHC-12-146	0.42	2.2	0.4	3.1	0.6	1.4	0.19	1.1	0.15	-0.2	-0.5	-1	-0.1	-0.1	1.8	-0.1	0.6	

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**Open File 012A/1580**  
**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Tl	Bi	Th	U	Be	Cu	
		Units	ppm																	
		Analysis Method	ICP-MS	ICP-ES	ICP-ES															
		Detection Limit	0.05	0.1	0.1	0.1	0.1	0.05	0.1	0.05	0.2	0.5	1	0.1	0.4	0.1	0.1	1		
6841509	JHC-12-146		2.85	7.4	1.2	7.3	1.4	4.6	0.64	4.7	0.67	4.7	-0.5	5	-0.1	-0.4	4.1	2.4	1.5	546
6841511	JHC-12-147		3.30	9.8	1.5	9.1	1.7	4.8	0.54	3.9	0.52	1.8	-0.5	-1	-0.1	-0.4	1.1	0.4	0.6	-1
6841512	JHC-12-148		1.15	4.2	0.7	5.0	1.0	3.0	0.41	3.0	0.43	2.2	-0.5	-1	-0.1	-0.4	1.4	0.6	0.5	24
6841513	JHC-12-149		2.33	12.2	1.8	12.3	2.4	7.7	1.05	6.8	0.95	3.6	0.8	2	-0.1	-0.4	9.7	53.4	2.3	232
6841514	JHC-12-150		1.96	6.6	1.0	6.6	1.2	3.7	0.50	3.4	0.49	3.0	-0.5	-1	-0.1	-0.4	1.3	0.5	1.7	7
6841515	JHC-12-151		1.84	6.6	1.0	6.1	1.2	3.8	0.51	3.6	0.50	3.2	0.9	3	-0.1	-0.4	1.7	0.4	1.8	8
6841516	JHC-12-152		1.04	3.7	0.6	4.1	0.8	2.5	0.36	2.4	0.35	2.4	0.5	2	-0.1	0.5	1.1	0.2	0.7	3
6841517	JHC-12-153		1.19	8.6	1.5	11.4	2.4	8.0	1.11	8.0	1.15	8.1	0.8	1	-0.1	-0.4	4.9	1.6	0.8	3
6841518	JHC-12-154		2.81	8.9	1.4	9.5	2.0	6.4	0.94	6.4	0.96	6.4	0.6	4	-0.1	-0.4	5.1	1.2	1.7	6
6841519	JHC-12-155		3.59	10.5	1.8	11.6	2.3	7.4	1.11	7.6	1.08	8.0	0.6	2	-0.1	-0.4	6.4	3.4	1.6	1
6841521	JHC-12-156		2.48	9.1	1.5	10.0	2.2	6.4	0.90	5.9	0.88	7.3	-0.5	3	-0.1	-0.4	6.1	1.5	1.5	39
6841522	JHC-12-157		1.99	8.5	1.3	7.7	1.6	4.9	0.69	4.4	0.64	2.1	0.6	4	-0.1	-0.4	6.0	9.5	1.8	280
6841523	JHC-12-158		2.57	11.8	1.9	11.9	2.3	7.2	0.96	6.6	0.90	1.9	-0.5	5	-0.1	-0.4	5.8	24.2	3.3	256
6841524	JHC-12-159		1.59	10.0	1.7	12.1	2.8	9.3	1.25	8.7	1.26	2.5	0.7	2	-0.1	-0.4	6.6	16.1	4.0	337
6841525	JHC-12-160		3.23	15.0	2.2	13.8	2.7	8.3	1.10	6.7	0.92	1.7	0.9	6	-0.1	-0.4	4.2	15.2	2.1	197
6841526	JHC-12-161		3.26	15.1	2.2	12.8	2.4	7.5	1.01	6.5	0.91	2.8	1.0	7	-0.1	-0.4	8.3	39.5	4.5	249
6841527	JHC-12-162		2.92	14.4	2.3	13.9	2.8	8.0	1.07	7.0	0.92	1.7	-0.5	4	-0.1	-0.4	5.2	32.8	2.8	265
6841528	JHC-12-090A		0.73	4.0	0.7	4.2	0.9	2.9	0.45	3.0	0.50	6.0	-0.5	3	-0.1	0.4	12.1	3.3	1.6	2

**Open File 012A/1580**  
**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	Li	Mn	Ni	Pb	Sc	Ti	Zn	Al	CCPI	Zr+Hf+Nb+Y
	Units	ppm		ppm							
	Analysis Method	ICP-ES		ppm							
	Detection Limit	0.1	1	1	1	0.1	1	1			
6841351	JHC-12-001	7.3	3300	3	76	4.8	949	6036	96.93	66.70	32.00
6841352	JHC-12-002	7.7	2519	3	21	6.7	1087	323	78.33	66.97	445.41
6841353	JHC-12-003	13.1	2514	10	6220	5.5	1317	6501	99.08	79.23	563.73
6841354	JHC-12-004	3.0	1210	1	3	6.1	1354	311	47.73	41.79	527.02
6841355	JHC-12-005	16.2	1171	191	10	21.3	1795	78	49.88	84.28	181.56
6841356	JHC-12-006	2.7	1030	2	306	6.6	1237	400	32.98	42.24	496.85
6841357	JHC-12-007	5.9	1037	2	-1	6.3	1217	493	59.79	52.86	621.48
6841358	JHC-12-008	6.4	1232	2	4	1.6	990	1424	77.39	67.77	540.88
6841359	JHC-12-009	5.9	1781	11	-1	29.5	6764	74	19.42	69.90	126.01
6841361	JHC-12-010	5.1	1000	10	-1	22.5	10293	109	20.12	62.85	232.35
6841362	JHC-12-011	2.9	1460	8	-1	25.5	8348	68	8.86	63.41	143.94
6841363	JHC-12-012	4.9	1866	9	-1	30.6	10872	93	31.36	69.03	169.57
6841364	JHC-12-013	6.7	353	12	-1	16.2	2938	88	58.20	43.76	801.25
6841365	JHC-12-014	8.6	707	4	-1	10.7	1942	124	61.17	49.32	727.61
6841366	JHC-12-015	0.6	195	-1	23	2.9	895	69	2.29	24.98	456.88
6841367	JHC-12-016	1.2	659	-1	4	8.8	1776	166	10.14	31.44	420.09
6841368	JHC-12-017	3.5	619	4	6	10.1	1898	137	15.14	37.39	591.06
6841369	JHC-12-018	4.1	1095	2	5	9.2	1900	139	21.03	42.30	450.84
6841371	JHC-12-018b	2.0	924	2	4	8.0	1593	106	13.08	39.24	370.61
6841372	JHC-12-019	2.6	825	2	4	9.1	1652	103	16.52	40.80	465.62
6841373	JHC-12-020	7.8	748	2	37	5.3	1293	220	82.61	50.30	579.30
6841374	JHC-12-022	7.2	930	2	17	5.2	1268	130	60.03	44.28	559.89
6841375	JHC-12-023	5.5	1232	2	3	5.3	1529	171	30.27	42.59	580.48
6841376	JHC-12-024	7.1	586	4	4	11.5	2131	102	83.53	50.31	685.71
6841377	JHC-12-025	0.2	600	23	1035	0.2	-1	34302	76.38	99.68	10.08
6841378	JHC-12-026	6.9	569	7	40	14.5	1685	27016	94.21	70.44	348.84
6841379	JHC-12-027	4.7	1127	1	80	7.0	768	1306	71.55	55.04	76.00
6841381	JHC-12-028	5.8	487	3	4	12.6	1682	66	65.22	47.41	629.05
6841382	JHC-12-029	5.4	826	2	753	4.6	1154	592	97.45	59.19	440.18
6841383	JHC-12-030	17.3	3499	3	10	8.1	1288	547	69.73	70.68	428.35
6841384	JHC-12-031	4.6	547	3	5	7.9	812	60	29.80	48.86	446.07
6841385	JHC-12-032	6.4	428	3	-1	4.3	929	62	21.44	77.83	273.65
6841386	JHC-12-033	9.5	885	3	3	3.9	712	105	94.27	77.73	499.14
6841387	JHC-12-034	2.8	107	6	43	2.9	646	8301	99.69	78.45	387.05
6841388	JHC-12-035	3.5	8858	12	339	7.6	2048	527	21.58	78.62	240.30

**Open File 012A/1580**  
**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	Li	Mn	Ni	Pb	Sc	Ti	Zn	Al	CCPI	Zr+Hf+Nb+Y
	Units	ppm		ppm							
	Analysis Method	ICP-ES		ppm							
	Detection Limit	0.1	1	1	1	0.1	1	1			
6841389	JHC-12-036	7.4	1934	3	9	9.7	2049	165	40.64	45.58	535.30
6841391	JHC-12-037	7.8	947	5	724	3.8	915	1813	90.23	69.28	471.25
6841392	JHC-12-038	0.6	457	11	34680	0.3	62	41435	45.64	95.26	41.65
6841393	JHC-12-039	1.0	442	23	244	0.2	5	38912	95.19	99.51	10.30
6841394	JHC-12-040	9.9	869	3	11	5.0	1419	437	80.63	53.27	502.98
6841395	JHC-12-041	5.3	1149	3	20	5.6	1452	290	19.56	41.45	512.50
6841396	JHC-12-042	6.2	792	6	6	17.6	3727	173	32.36	49.18	525.08
6841397	JHC-12-043	2.8	681	2	13	3.1	1004	132	21.10	39.77	499.92
6841398	JHC-12-044	7.6	5305	13	20	32.0	10329	128	23.46	69.43	166.35
6841399	JHC-12-045	9.3	923	8	16	16.7	2500	185	44.20	48.54	499.79
6841401	JHC-12-046	1.2	415	1	3	4.0	993	96	11.80	29.30	1467.10
6841402	JHC-12-047	3.0	879	2	13	5.2	1451	135	10.66	35.21	512.24
6841403	JHC-12-048	3.1	1046	3	9	10.6	2053	125	16.17	38.12	446.13
6841404	JHC-12-049	10.2	1024	5	6	11.5	3221	120	72.12	54.83	605.22
6841405	JHC-12-050	2.3	218	5	-1	8.6	1675	116	8.33	32.13	476.97
6841406	JHC-12-051	10.9	1193	54	-1	36.3	4821	109	28.20	61.00	170.80
6841407	JHC-12-052	12.9	890	63	-1	41.6	3893	149	41.65	63.51	157.42
6841408	JHC-12-053	6.4	1700	12	11	31.0	3822	59	11.83	58.98	186.83
6841409	JHC-12-054	7.8	1435	16	1	34.8	7876	101	29.73	70.05	110.46
6841411	JHC-12-055	3.5	496	4	-1	8.1	1537	96	14.70	39.68	421.35
6841412	JHC-12-056	3.7	729	3	9	5.9	1526	110	24.96	47.34	568.53
6841413	JHC-12-057	2.1	391	2	3	2.9	689	65	16.24	40.84	491.05
6841414	JHC-12-058	6.3	915	6	4	6.3	1309	255	36.02	59.14	599.86
6841415	JHC-12-059	8.6	502	2	32	5.0	1048	248	84.59	53.04	575.04
6841416	JHC-12-060	3.1	111	5	34	3.5	709	647	65.14	66.27	410.42
6841417	JHC-12-061	12.9	380	2	23	14.0	1671	752	59.71	31.70	615.03
6841418	JHC-12-062	5.1	2001	3	3	9.9	1681	111	36.11	42.97	447.57
6841419	JHC-12-063	4.4	4871	5	13	16.1	2907	609	64.53	55.28	314.97
6841421	JHC-12-065	7.5	497	4	5	2.2	1075	870	-99	-99	12.33
6841422	JHC-12-066	7.6	1167	7	9364	2.2	468	27567	87.62	50.53	520.10
6841423	JHC-12-067	1.6	752	1	23	5.3	1230	133	11.47	26.75	496.57
6841424	JHC-12-068	9.9	1075	3	9	5.2	1486	236	62.90	50.67	540.88
6841425	JHC-12-069	6.5	1288	10	3	24.2	11109	134	28.35	68.48	240.80
6841426	JHC-12-070	10.6	2608	4	95	11.3	1984	9310	78.58	56.99	410.18
6841427	JHC-12-071	9.5	1646	3	1057	7.7	2247	1473	86.91	53.82	463.39
6841428	JHC-12-072	5.9	2442	1	122	2.2	736	232	64.27	46.44	377.58

**Open File 012A/1580**  
**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	Li	Mn	Ni	Pb	Sc	Ti	Zn	Al	CCPI	Zr+Hf+Nb+Y
		Units	ppm								
		Analysis Method	ICP-ES	ppm							
Detection Limit		0.1	1	1	1	0.1	1	1			
6841429	JHC-12-073	5.1	2010	1	24	4.3	1023	150	57.08	47.44	461.28
6841431	JHC-12-074	4.0	1645	2	121	5.0	1202	202	52.08	39.85	529.28
6841432	JHC-12-075	7.4	2871	2	33	5.7	1704	141	71.76	53.64	339.10
6841433	JHC-12-076	4.4	1090	-1	15	4.9	1149	49	64.44	27.25	573.41
6841434	JHC-12-077	6.5	2235	2	32	8.7	2488	73	56.59	37.76	389.00
6841435	JHC-12-077b	7.3	1661	11	-1	33.5	12121	109	35.62	76.60	176.51
6841436	JHC-12-078	2.1	896	8	-1	31.0	10925	65	9.99	58.88	159.32
6841437	JHC-12-079	19.1	1741	266	8	22.0	5727	103	58.36	84.82	187.46
6841438	JHC-12-080	2.1	646	2	10	5.3	1636	83	21.07	24.03	281.67
6841439	JHC-12-081	3.2	887	3	10	9.4	1635	119	33.22	30.26	525.79
6841441	JHC-12-082	6.9	952	3	830	3.2	1117	2886	57.17	46.51	466.33
6841442	JHC-12-083	4.4	460	1	6	5.5	1325	288	49.00	31.58	435.30
6841443	JHC-12-084	12.7	1621	7	60	22.3	3908	353	46.55	53.50	220.27
6841444	JHC-12-085	8.4	957	3	591	3.9	1168	4549	74.20	49.08	475.85
6841445	JHC-12-086	1.6	190	-1	22	8.0	1297	156	76.10	16.60	384.86
6841446	JHC-12-088	20.0	1143	11	48	10.4	2384	155	98.17	45.29	700.90
6841447	JHC-12-089	18.4	512	13	474	9.0	1882	579	87.67	48.55	517.73
6841448	JHC-12-090B	4.0	715	3	2	5.9	1501	146	47.47	44.81	477.06
6841449	JHC-12-091	8.2	3053	16	-1	29.2	10441	194	54.17	80.44	173.12
6841451	JHC-12-092	3.6	1096	3	2	4.3	550	76	37.27	51.39	398.98
6841452	JHC-12-093	1.2	564	2	5	4.8	792	46	15.70	36.72	425.30
6841453	JHC-12-094	4.1	1016	1	39	5.5	1482	351	44.05	34.39	421.26
6841454	JHC-12-095	4.8	994	1	45	5.6	1514	88	47.43	34.31	422.51
6841455	JHC-12-096	9.3	1089	5	12	26.5	1060	46	48.30	67.09	85.76
6841456	JHC-12-097	9.5	1264	5	12	30.6	763	64	57.95	66.58	94.98
6841457	JHC-12-098	10.3	1100	5	-1	28.6	1165	89	38.11	64.22	97.46
6841458	JHC-12-099	2.9	1362	6	18	23.3	719	37	29.51	70.51	148.67
6841459	JHC-12-100	7.6	1010	6	-1	25.4	541	51	32.88	59.92	104.54
6841461	JHC-12-101	12.0	1489	8	-1	35.5	1103	96	42.45	77.92	71.83
6841462	JHC-12-102	3.7	1330	9	6	41.0	1063	35	45.24	68.62	80.13
6841463	JHC-12-103	7.1	1137	5	-1	25.2	917	61	52.69	68.12	100.59
6841464	JHC-12-104	11.4	1573	5	4	25.8	691	96	54.94	74.60	104.22
6841465	JHC-12-105	12.8	1499	5	17	26.7	713	126	49.01	75.81	107.60
6841466	JHC-12-106	3.7	893	5	50	27.9	713	399	61.58	64.60	107.33
6841467	JHC-12-107	2.1	225	7	1663	25.7	665	3888	76.45	69.18	114.63
6841468	JHC-12-108	10.6	1177	5	19	25.7	582	95	37.90	68.43	104.31

**Open File 012A/1580**  
**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	Li	Mn	Ni	Pb	Sc	Ti	Zn	Al	CCPI	Zr+Hf+Nb+Y
	Units	ppm		ppm							
	Analysis Method	ICP-ES		ppm							
	Detection Limit	0.1	1	1	1	0.1	1	1			
6841469	JHC-12-109	7.0	942	2	40	7.8	2378	119	59.73	42.13	378.79
6841471	JHC-12-110	2.9	127	-1	2	4.7	620	19	27.70	35.90	47.00
6841472	JHC-12-112	8.4	2726	2	-1	5.2	1147	126	34.25	53.14	471.29
6841473	JHC-12-113	4.4	1079	-1	-1	6.0	1414	118	41.48	35.13	339.30
6841474	JHC-12-114	12.8	669	15	-1	27.5	3584	94	43.60	67.06	119.42
6841475	JHC-12-115	15.3	1056	11	-1	38.1	6309	100	38.58	69.56	74.74
6841476	JHC-12-116	13.9	606	15	-1	35.4	5614	87	33.92	59.24	89.55
6841477	JHC-12-117	14.0	2081	12	-1	38.8	14163	123	39.10	79.43	115.88
6841478	JHC-12-118	1.5	102	-1	-1	5.3	1305	74	13.79	28.80	442.52
6841479	JHC-12-119	11.2	673	15	2	31.5	13319	289	44.54	71.00	268.63
6841481	JHC-12-120	16.6	448	8	-1	9.1	2443	173	82.79	52.94	785.08
6841482	JHC-12-121	3.5	547	2	-1	5.9	1923	91	18.54	33.37	614.03
6841483	JHC-12-122	2.1	359	3	19	7.6	1610	86	12.60	27.72	511.71
6841484	JHC-12-123	13.9	627	12	1	8.6	2625	170	69.80	53.61	829.70
6841485	JHC-12-124	12.8	309	16	11	8.3	2431	144	57.09	52.82	644.02
6841486	JHC-12-125	12.1	1130	30	-1	31.9	13436	108	31.69	70.32	209.67
6841487	JHC-12-126	9.7	377	281	171	14.8	2024	917	76.53	77.93	169.95
6841488	JHC-12-127	7.9	337	414	66	11.3	1168	2272	38.69	76.55	165.93
6841489	JHC-12-128	7.7	277	47	111	13.5	1426	783	75.50	73.64	144.49
6841491	JHC-12-129	6.7	305	224	21	11.6	919	3372	33.67	63.59	160.24
6841492	JHC-12-130	7.6	576	753	91	12.1	1172	5599	63.92	77.64	139.12
6841493	JHC-12-131	16.9	2851	72	37	21.6	3276	98	74.06	65.33	217.28
6841494	JHC-12-132	12.9	3517	44	25	19.5	2799	108	69.45	67.23	260.40
6841495	JHC-12-133	23.0	1833	11	-1	39.2	1493	81	29.39	65.61	41.32
6841496	JHC-12-134	23.7	826	14	-1	31.8	566	72	27.15	75.99	88.75
6841497	JHC-12-135	11.7	1259	13	5	28.8	549	64	43.98	81.46	90.15
6841498	JHC-12-136	19.1	1225	15	12	32.9	887	296	61.65	84.36	101.35
6841499	JHC-12-137	14.1	2569	13	13	31.2	576	193	52.93	83.14	102.89
6841501	JHC-12-138	11.2	401	10	7	27.0	863	55	68.05	76.49	100.98
6841502	JHC-12-139	10.7	312	5	5	21.1	720	24	60.94	67.69	130.01
6841503	JHC-12-140	3.8	347	194	21	13.2	1628	640	52.47	75.64	169.85
6841504	JHC-12-141	4.5	224	158	74	8.9	765	358	55.32	79.54	123.78
6841505	JHC-12-142	21.4	1730	30	-1	18.0	24531	125	50.61	86.85	726.50
6841506	JHC-12-143	7.4	225	6	1	8.2	1220	107	39.98	50.30	59.75
6841507	JHC-12-144	7.5	156	9	17	7.5	823	88	50.65	50.33	50.67
6841508	JHC-12-145	2.3	1560	15	21186	0.2	7	43408	69.42	98.74	21.78

**Open File 012A/1580**  
**Appendix B: Major- and trace-element data for samples collected from diamond-drill core**

Lab Number	Sample	Li	Mn	Ni	Pb	Sc	Ti	Zn	Al	CCPI	Zr+Hf+Nb+Y
	Units	ppm		ppm							
	Analysis Method	ICP-ES		ppm							
	Detection Limit	0.1	1	1	1	0.1	1	1			
6841509	JHC-12-146	5.5	848	6	1671	11.0	1203	15099	91.50	72.07	216.52
6841511	JHC-12-147	14.2	1387	9	-1	44.5	18708	167	31.23	72.59	105.55
6841512	JHC-12-148	20.9	710	9	-1	30.4	6238	117	27.18	65.45	107.58
6841513	JHC-12-149	28.3	320	158	53	16.0	3732	405	68.91	82.79	217.44
6841514	JHC-12-150	9.6	1113	55	1	33.8	2253	115	26.86	62.25	148.62
6841515	JHC-12-151	9.2	1650	69	4	31.1	4318	112	31.41	59.04	165.25
6841516	JHC-12-152	6.7	1523	15	2	29.3	5075	135	16.83	70.03	116.22
6841517	JHC-12-153	1.6	1182	-1	50	2.4	564	118	13.13	39.92	372.82
6841518	JHC-12-154	7.7	2473	5	-1	13.6	2994	140	61.49	53.41	296.83
6841519	JHC-12-155	7.7	1963	6	-1	16.6	4092	133	45.90	58.06	361.30
6841521	JHC-12-156	6.1	1334	4	85	15.0	2806	1103	25.66	41.80	326.13
6841522	JHC-12-157	13.9	900	311	173	10.3	905	842	61.94	94.95	148.60
6841523	JHC-12-158	1.1	5867	325	285	8.9	942	1305	62.71	93.52	173.46
6841524	JHC-12-159	10.1	729	321	70	11.9	2014	1746	53.14	89.76	230.05
6841525	JHC-12-160	2.2	7911	269	197	5.6	438	575	40.29	96.06	178.84
6841526	JHC-12-161	6.1	6155	279	111	13.0	1016	479	59.24	89.12	205.84
6841527	JHC-12-162	2.8	5379	291	207	6.7	501	724	44.97	95.50	177.14
6841528	JHC-12-090A	4.8	630	2	-1	4.6	704	49	48.14	43.50	277.03

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**Appendix C: Diamond-drill hole collar information**

<b>DDH_ID</b>	<b>Property</b>	<b>UTMEast</b>	<b>UTMNorth</b>	<b>UTMZone</b>	<b>Datum</b>	<b>Year</b>	<b>Elevation</b>	<b>Azimuth</b>	<b>Dip</b>	<b>EOH_m</b>
HW-06-01	Long Lake	477705	5360853	21	NAD27	2006	325	140	45	182
IS-95-01	Long Lake	486640	5366330	21	NAD27	1995	-99	170	45	100.6
LL-00-02	Long Lake	493771	5368346	21	NAD27	2000	341	159	68	150.6
LL-06-01	Long Lake	483745	5360997	21	NAD27	2006	-99	315	50	200
LL-06-03	Long Lake	477981	5356363	21	NAD27	2006	353	150	45	332
LL-94-01	Long Lake	495865	5369219	21	NAD27	1994	329	156	45	136.6
LL-94-02	Long Lake	493799	5368335	21	NAD27	1994	344	159	45	116.4
LL-94-05	Long Lake	493701	5368293	21	NAD27	1994	344	158	55	122.2
LL-94-13	Long Lake	496466	5369718	21	NAD27	1994	336	159	45	120.1
LL-94-14	Long Lake	493166	5368268	21	NAD27	1994	332	159	45	125.3
LL-94-07	Long Lake	493685	5368336	21	NAD27	1994	-99	156	69	196.6
LL-94-18	Long Lake	493899	5368080	21	NAD27	1994	362	332	75	675.3
LL-94-19	Long Lake	493795	5368293	21	NAD27	1994	357	335	75	67.7
LL-95-022A	Long Lake	493978	5368394	21	NAD27	1995	358	335	71	443
LL-97-31	Long Lake	494705	5368723	21	NAD27	1997	358	336	57	270
LL-97-33A	Long Lake	495071	5368883	21	NAD27	1997	349	336	68	468.7
LL-97-37	Long Lake	494757	5368819	21	NAD27	1997	358	158	55	333.5
LLW-97-03	Long Lake	490930	5366825	21	NAD27	1997	340	174	45	123.4
LLW-97-05	Long Lake	492350	5367150	21	NAD27	1995	-99	160	62	234.4
SG-06-03	Long Lake	476466	5358728	21	NAD27	2006	349	140	45	122
SG-06-04	Long Lake	476432	5359021	21	NAD27	2006	346	140	45	155

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**Appendix D: Major-element ICP-OES-FUS standards and duplicate data**

Lab Number	Sample	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub> T	MgO	CaO	Na <sub>2</sub> O	K <sub>2</sub> O	TiO <sub>2</sub>	MnO	P <sub>2</sub> O <sub>5</sub>	Cr	Zr	Ba	LOI	Total
	Units	wt. %	wt. %	wt. %	wt. %	wt. %	wt. %	wt. %	wt. %	wt. %	wt. %	ppm	ppm	ppm	wt. %	wt. %
	Analysis Method	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	Grav	
	Detection Limit	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.001	0.001	1	1	1	0.01	
6841280	BIR-1	48.81	15.82	11.64	9.76	13.25	1.89	0.07	0.969	0.179	0.019	382	18	7	-99	-99
6841460	BIR-1	47.47	15.75	11.32	9.60	12.93	1.85	0.02	0.970	0.176	0.018	382	14	8	-99	-99
6841780	BIR-1	46.50	15.08	11.27	9.35	12.93	1.73	-0.01	0.925	0.175	0.019	352	16	9	-99	-99
6841480	W-2	52.29	15.37	10.84	6.41	10.68	2.31	0.60	1.061	0.171	0.119	87	86	170	-99	-99
6841300	W-2	52.18	15.19	10.81	6.29	10.64	2.24	0.62	1.058	0.169	0.120	82	89	166	-99	-99
6841320	BHVO-1	50.15	13.81	12.45	7.28	11.33	2.37	0.58	2.722	0.176	0.270	272	163	133	-99	-99
6841500	BHVO-1	49.78	13.62	12.30	7.21	11.16	2.09	0.53	2.754	0.176	0.266	257	159	149	-99	-99
6841340	QLO-1	65.33	15.85	4.38	1.01	3.13	4.34	3.33	0.597	0.092	0.257	-1	168	1384	-99	-99
6841520	QLO-1	65.35	16.17	4.34	1.01	3.17	3.73	3.50	0.609	0.092	0.256	-1	171	1416	-99	-99
6841360	AGV-1	58.56	16.95	6.83	1.53	4.87	4.46	2.90	1.053	0.099	0.497	6	214	1250	-99	-99
6841380	SDC-1	66.81	15.89	7.06	1.72	1.48	2.17	3.16	1.015	0.119	0.145	64	323	661	-99	-99
6841400	STM-1	59.02	18.17	5.28	0.10	1.14	9.12	4.00	0.133	0.221	0.151	2	1197	582	-99	-99
6841440	MAG-1	51.59	16.43	7.24	3.10	1.41	4.22	3.89	0.727	0.103	0.163	101	120	541	-99	-99
6841760	MAG-1	50.62	16.56	7.04	3.10	1.40	3.91	3.63	0.730	0.100	0.165	88	121	499	-99	-99
6841279	12JH007	73.60	13.02	1.96	0.27	2.92	4.64	1.26	0.314	0.027	0.060	-1	113	330	2.31	100.37
6841290	12JH007 DUP	73.92	12.69	1.91	0.25	2.77	4.43	1.27	0.287	0.025	0.055	-1	101	336	2.33	99.95
6841302	12JH024	62.77	16.27	3.94	3.33	4.83	3.83	0.98	0.342	0.042	0.044	7	42	393	3.34	99.71
6841310	12JH024 DUP	61.50	17.14	4.61	3.45	4.67	3.60	1.01	0.374	0.040	0.041	7	45	396	3.69	100.13
6841319	12JH038A02	52.70	12.68	14.87	2.66	1.66	4.50	0.48	0.529	0.057	0.074	18	122	111	8.44	98.64
6841330	12JH038A02 DUP	54.73	12.87	14.30	2.64	1.65	4.57	0.45	0.530	0.056	0.066	17	122	115	8.03	99.89
6841343	12JH054	43.09	15.07	10.42	4.96	10.66	4.61	0.97	1.589	0.213	0.176	177	88	163	7.77	99.52
6841350	12JH054 DUP	43.23	15.25	10.63	5.05	10.61	4.54	0.96	1.642	0.211	0.178	181	86	160	7.04	99.34
6841361	JHC-12-010	55.65	17.88	10.80	2.10	2.28	7.31	0.31	1.727	0.155	0.159	2	177	147	1.45	99.83
6841370	JHC-12-010 DUP	56.33	18.11	10.91	2.15	2.17	7.28	0.24	1.767	0.156	0.156	4	173	151	1.45	100.72
6841386	JHC-12-033	71.66	11.19	5.42	3.74	0.03	0.34	2.29	0.164	0.128	0.014	-1	412	2089	3.37	98.34
6841390	JHC-12-033 DUP	72.19	11.14	5.48	3.82	0.04	0.33	2.21	0.155	0.132	0.014	2	398	2027	3.28	98.80
6841405	JHC-12-050	67.80	16.52	3.71	0.60	0.22	8.86	0.23	0.250	0.029	0.041	-1	385	4221	0.79	99.04
6841410	JHC-12-050 DUP	69.42	16.22	3.51	0.56	0.22	9.07	0.18	0.243	0.026	0.039	2	388	4246	0.72	100.21
6841425	JHC-12-069	52.72	17.49	11.03	3.86	3.35	6.73	0.13	1.755	0.193	0.431	-1	177	60	3.26	100.94
6841430	JHC-12-069 DUP	51.39	17.17	11.16	3.91	3.19	6.50	0.20	1.751	0.191	0.433	-1	169	59	3.30	99.19
6841446	JHC-12-088	61.29	18.84	4.40	2.26	0.20	-0.01	8.04	0.348	0.150	0.043	-1	583	1589	3.37	98.49
6841450	JHC-12-088 DUP	61.46	19.34	4.40	2.30	0.22	0.08	8.24	0.355	0.171	0.041	2	589	1662	3.48	100.09
6841461	JHC-12-101	50.24	15.78	8.83	4.11	6.01	1.92	1.74	0.677	0.205	0.080	4	47	320	8.82	98.42
6841470	JHC-12-101 DUP	50.63	15.72	8.76	4.05	5.90	1.83	1.84	0.674	0.200	0.081	-1	48	376	8.55	98.23
6841482	JHC-12-121	68.22	14.21	3.65	0.53	0.90	7.06	1.29	0.321	0.069	0.036	-1	483	1348	2.42	98.71
6841490	JHC-12-121 DUP	69.86	14.85	3.56	0.52	0.94	6.77	1.40	0.330	0.068	0.040	-1	499	1400	2.59	100.93
6841506	JHC-12-143	65.92	13.45	2.28	1.54	3.36	1.85	1.93	0.231	0.031	0.112	4	41	18590	4.06	94.77
6841510	JHC-12-143 DUP	65.80	14.18	2.41	1.59	3.73	1.69	2.02	0.259	0.031	0.121	5	47	18980	4.38	96.21

**Open File 012A/1580**  
**Appendix E: Trace-element ICP-ES standards and duplicate data**

Lab Number	Sample	As	Be	Cu	Li	Mn	Ni	Pb	Rb	Sc	Ti	Zn
		Units	ppm									
		Analysis Method	ICP-ES									
		Detection Limit	2	0.1	1	0.1	1	1	1	0.1	1	1
6841760	SY-4		3	2.5	6	36.7	809	12	3	55	0.9	1761
6841280	SY-4		-99	2.5	4	31.7	702	10	5	-99	1.0	1649
6841320	SY-4		-99	2.6	4	35.8	694	10	11	-99	1.0	1670
6841360	SY-4		-99	2.6	4	35.4	711	8	-1	-99	0.9	1688
6841400	SY-4		-99	2.8	7	39.0	797	10	5	-99	1.0	1805
6841420	SY-4		-99	2.7	7	36.8	759	10	4	-99	0.9	1711
6841460	SY-4		-99	2.7	6	35.4	766	10	4	-99	0.9	1722
6841500	SY-4		-99	2.6	6	36.2	799	9	-1	-99	0.9	1666
6841780	WGB-1		2	0.3	92	44.1	975	61	1	22	43.5	5198
6841300	WGB-1		-99	0.4	76	44.1	859	55	20	-99	42.7	5080
6841340	WGB-1		-99	0.4	72	42.3	840	55	24	-99	42.0	4854
6841380	WGB-1		-99	0.4	80	42.2	848	48	4	-99	41.1	4944
6841440	WGB-1		-99	0.4	86	44.1	931	63	4	-99	43.7	5053
6841480	WGB-1		-99	0.4	87	43.8	982	60	1	-99	43.6	5120
6841520	WGB-1		-99	0.4	87	43.4	981	60	3	-99	42.9	5022
6841765	14JH008		4	0.6	39	15.9	1897	40	2	7	48.8	1438
6841770	14JH008 DUP		4	0.6	39	15.8	1876	40	2	7	48.2	1902
6841279	12JH007		-99	0.5	8	2.1	174	2	1	-99	7.8	1215
6841290	12JH007 DUP		-99	0.5	14	1.9	168	2	2	-99	7.8	1121
6841302	12JH024		-99	0.5	100	7.4	259	7	27	-99	28.8	1913
6841310	12JH024 DUP		-99	0.4	117	8.4	254	8	28	-99	28.6	2105
6841319	12JH038A02		-99	0.8	226	5.9	361	57	4	-99	15.8	3265
6841330	12JH038A02 DUP		-99	0.8	206	5.8	347	53	6	-99	15.4	3180
6841343	12JH054		-99	0.5	5	12.5	1379	62	-1	-99	33.6	9037
6841350	12JH054 DUP		-99	0.5	4	12.5	1366	61	-1	-99	33.7	9124
6841361	JHC-12-010		-99	0.8	-1	5.1	1000	10	-1	-99	22.5	10293
6841370	JHC-12-010 DUP		-99	0.7	-1	5.6	987	10	-1	-99	22.0	10059

**Open File 012A/1580**  
**Appendix E: Trace-element ICP-ES standards and duplicate data**

Lab Number	Sample	As	Be	Cu	Li	Mn	Ni	Pb	Rb	Sc	Ti	Zn
		Units	ppm									
		Analysis Method	ICP-ES									
Detection Limit		2	0.1	1	0.1	1	1	1	1	0.1	1	1
6841386	JHC-12-033	-99	1.9	264	9.5	885	3	3	-99	3.9	712	105
6841390	JHC-12-033 DUP	-99	1.8	217	9.0	890	3	2	-99	3.7	688	104
6841405	JHC-12-050	-99	1.2	2	2.3	218	5	-1	-99	8.6	1675	116
6841410	JHC-12-050 DUP	-99	1.1	2	2.1	208	5	-1	-99	8.0	1616	106
6841425	JHC-12-069	-99	1.0	-1	6.5	1288	10	3	-99	24.2	11109	134
6841430	JHC-12-069 DUP	-99	1.0	-1	6.6	1286	11	2	-99	24.3	11254	134
6841446	JHC-12-088	-99	3.1	8	20.0	1143	11	48	-99	10.4	2384	155
6841450	JHC-12-088 DUP	-99	3.1	7	19.7	1299	11	42	-99	10.3	2420	177
6841461	JHC-12-101	-99	0.4	36	12.0	1489	8	-1	-99	35.5	1103	96
6841470	JHC-12-101 DUP	-99	0.4	38	12.0	1462	8	-1	-99	35.6	1279	96
6841482	JHC-12-121	-99	1.8	37	3.5	547	2	-1	-99	5.9	1923	91
6841490	JHC-12-121 DUP	-99	1.8	29	3.4	539	2	-1	-99	5.8	1889	81
6841506	JHC-12-143	-99	0.5	15	7.4	225	6	1	-99	8.2	1220	107
6841510	JHC-12-143 DUP	-99	0.5	18	8.8	232	7	3	-99	9.8	1356	103

**Open File 012A/1580**  
**Appendix F: Trace-element ICP-MS-FUS standards and duplicate data**

Lab Number	Sample	V	Co	Ga	Ge	As	Rb	Sr	Y	Nb	Mo	Cd	In	Sn	Cs	La	Ce	Pr
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
Analysis Method	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	
Detection Limit	5	1	1	1	5	2	1	1	1	2	0.2	0.2	1	0.5	0.5	0.5	0.05	
control	MAG-1	154	23	28	5	-99	-99	152	27	16.9	3	-0.2	-99	4	8.9	46.9	94.0	10.59
control	MAG-1	149	24	26	4	12	142	155	28	17.1	-2	-0.2	-0.2	4	6.8	45.1	92.7	10.83
control	BIR-1	318	51	15	2	-5	-2	101	13	3.3	-2	-0.2	-0.2	1	-0.5	-0.5	1.6	0.35
control	BIR-1	361	59	18	3	-5	3	117	16	0.7	-2	-0.2	-0.2	1	-0.5	0.7	2.0	0.33
control	BIR-1	330	52	15	2	-99	-99	106	14	0.8	2	-0.2	-99	1	-0.5	2.6	2.3	0.41
control	W-2	236	40	15	4	-5	12	174	17	10.0	-2	-0.2	-0.2	2	-0.5	9.0	19.5	2.46
control	W-2	286	46	20	3	-5	16	203	21	7.8	-2	0.3	-0.2	2	-0.5	11.0	23.7	3.06
control	BHVO-1	300	42	21	3	-5	7	373	22	16.5	-2	-0.2	-0.2	2	-0.5	14.0	34.6	4.77
control	BHVO-1	371	52	25	4	-5	9	443	27	20.9	-2	0.4	-0.2	2	-0.5	17.2	41.7	5.83
control	QLO-1	60	8	20	3	15	62	377	25	15.8	4	-0.2	-0.2	3	0.8	29.7	57.0	6.60
control	QLO-1	52	10	19	3	-5	51	343	23	10.9	2	-0.2	-0.2	2	0.6	26.9	51.3	6.00
control	AGV-1	119	15	22	2	-5	47	637	17	13.2	2	0.5	-0.2	4	-0.5	36.3	65.4	7.90
control	SDC-1	108	19	26	4	-5	114	195	38	20.9	-2	1.2	-0.2	3	3.3	45.1	96.2	11.57
control	STM-1	-5	1	44	6	7	110	743	44	273.9	6	0.8	-0.2	8	1.4	158.1	276.5	27.32
control	DR-N	220	42	21	4	5	53	410	26	7.4	-2	0.7	-0.2	2	2.1	20.9	46.2	5.53
6841765	14JH008	302	38	18	3	-99	-99	108	21	2.6	-2	-0.2	-99	1	-0.5	6.3	13.2	2.01
6841770	14JH008 DUP	317	41	17	3	-99	-99	106	22	2.5	-2	-0.2	-99	1	-0.5	6.3	13.4	2.12
6841302	12JH024	189	9	18	2	53	21	179	15	0.8	-2	-0.2	-0.2	1	-0.5	6.8	12.8	1.49
6841310	12JH024 DUP	205	15	18	2	60	22	176	16	2.9	-2	0.2	-0.2	1	-0.5	7.1	13.1	1.58
6841319	12JH038A02	298	17	15	3	131	7	152	30	5.9	27	-0.2	-0.2	1	-0.5	12.7	23.1	2.87
6841330	12JH038A02 DUP	266	18	16	3	135	7	147	28	5.1	25	-0.2	-0.2	1	-0.5	12.1	20.8	2.45
6841343	12JH054	305	37	18	3	-5	18	223	28	2.6	-2	-0.2	-0.2	1	-0.5	7.0	17.3	2.51
6841350	12JH054 DUP	298	35	18	4	-5	16	216	26	2.7	-2	-0.2	-0.2	1	-0.5	6.7	16.5	2.51
6841361	JHC-12-010	77	18	28	3	-5	6	97	45	5.2	-2	0.3	-0.2	1	-0.5	17.3	42.2	5.68
6841370	JHC-12-010 DUP	76	19	25	4	-5	5	88	40	6.2	-2	0.4	-0.2	1	-0.5	14.8	36.1	4.93
6841386	JHC-12-033	-5	-1	24	3	8	46	17	69	6.7	-2	0.3	-0.2	5	-0.5	31.8	65.1	8.24
6841390	JHC-12-033 DUP	-5	-1	25	3	-5	42	17	75	7.0	-2	0.2	-0.2	5	-0.5	35.1	73.0	9.14
6841405	JHC-12-050	6	1	26	4	-5	5	94	71	9.2	-2	0.6	0.2	4	-0.5	33.4	74.0	9.69
6841410	JHC-12-050 DUP	6	1	22	3	-5	4	88	66	8.2	-2	1.2	0.3	3	-0.5	29.3	63.9	8.28
6841425	JHC-12-069	128	18	27	4	-5	3	101	52	6.7	-2	0.7	-0.2	2	-0.5	16.2	39.8	5.35
6841430	JHC-12-069 DUP	128	19	28	4	-5	3	97	52	5.5	-2	0.8	-0.2	2	-0.5	15.9	39.3	5.62
6841446	JHC-12-088	-5	-1	31	3	27	175	11	93	10.1	10	-0.2	-0.2	5	0.8	44.0	100.4	12.83
6841450	JHC-12-088 DUP	-5	-1	37	4	29	181	14	97	11.3	11	-0.2	-0.2	5	0.6	47.2	106.9	13.59
6841461	JHC-12-101	230	16	16	2	-5	22	117	22	1.1	-2	0.2	-0.2	1	-0.5	5.5	13.1	1.81
6841470	JHC-12-101 DUP	220	19	15	3	9	22	110	22	1.8	-2	0.4	-0.2	-1	-0.5	5.8	13.2	1.91
6841482	JHC-12-121	-5	2	28	3	-5	19	56	106	11.4	-2	0.3	-0.2	4	-0.5	33.2	74.6	9.47
6841490	JHC-12-121 DUP	-5	1	27	5	-5	19	57	111	9.6	2	0.6	-0.2	4	-0.5	38.8	88.5	10.89
6841506	JHC-12-143	64	3	11	2	-5	34	111	15	2.5	2	1.7	-0.2	1	-0.5	5.5	9.8	1.29
6841510	JHC-12-143 DUP	71	8	11	2	-5	33	103	15	2.0	2	-0.2	-0.2	-1	-0.5	6.4	11.7	1.55

**Open File 012A/1580**  
**Appendix F: Trace-element ICP-MS-FUS standards and duplicate data**

Lab Number	Sample	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Tl	Bi	Th	U	
	Units	ppm																		
	Analysis Method	ICP-MS																		
	Detection Limit	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.05	0.2	0.5	1	0.1	0.4	0.1	0.1
control	MAG-1	41.4	7.7	1.50	6.6	1.0	5.6	1.0	3.0	0.41	2.7	0.37	3.8	1.7	4	-0.1	-0.4	12.7	3.0	
control	MAG-1	41.9	8.0	1.51	7.0	1.0	5.8	1.0	3.0	0.43	2.9	0.40	3.8	1.4	2	-0.1	0.4	12.9	2.9	
control	BIR-1	2.1	0.9	0.45	1.7	0.3	2.2	0.5	1.6	0.23	1.5	0.22	0.5	0.6	1	-0.1	-0.4	-0.1	-0.1	
control	BIR-1	2.2	1.2	0.53	2.1	0.4	2.7	0.6	1.8	0.29	1.9	0.27	0.6	-0.5	-1	-0.1	-0.4	-0.1	-0.1	
control	BIR-1	2.6	1.1	0.45	2.0	0.4	2.5	0.6	1.7	0.22	1.6	0.23	0.6	-0.5	-1	-0.1	-0.4	-0.1	-0.1	
control	W-2	11.2	2.6	0.90	3.3	0.5	3.3	0.7	1.8	0.25	1.7	0.26	2.0	0.8	2	-0.1	-0.4	1.8	0.4	
control	W-2	13.6	3.7	1.20	3.9	0.6	3.7	0.8	2.2	0.31	2.1	0.32	2.7	1.2	-1	-0.1	-0.4	2.2	0.5	
control	BHVO-1	22.9	5.6	1.91	6.0	0.9	5.0	0.9	2.3	0.28	1.8	0.26	3.8	1.2	-1	-0.1	-0.4	1.1	0.4	
control	BHVO-1	27.2	6.9	2.28	6.9	1.0	5.6	1.0	2.8	0.32	2.1	0.30	4.6	1.6	-1	-0.1	-0.4	1.2	0.4	
control	QLO-1	27.3	5.3	1.54	5.1	0.7	4.3	0.9	2.7	0.39	2.6	0.41	4.9	1.3	2	0.3	-0.4	5.0	1.9	
control	QLO-1	23.1	5.1	1.35	4.5	0.7	3.9	0.8	2.5	0.33	2.5	0.39	4.8	1.0	-1	-0.1	-0.4	4.6	1.8	
control	AGV-1	31.6	5.7	1.57	5.1	0.6	3.4	0.6	1.8	0.23	1.6	0.24	4.6	0.9	-1	-0.1	0.6	5.8	1.7	
control	SDC-1	44.6	8.7	1.76	7.8	1.2	7.0	1.5	4.5	0.62	4.5	0.67	8.8	1.7	1	-0.1	-0.4	12.1	2.9	
control	STM-1	84.7	13.3	3.77	11.4	1.6	8.6	1.5	4.5	0.67	4.6	0.65	28.4	20.0	5	-0.1	-0.4	31.0	8.8	
control	DR-N	23.5	5.6	1.42	5.4	0.8	4.8	0.9	2.8	0.35	2.4	0.39	3.4	1.0	144	-0.1	0.4	4.6	1.4	
6841765	14JH008	10.0	3.2	1.15	3.9	0.6	4.2	0.8	2.4	0.34	2.1	0.34	2.0	1.3	1	-0.1	-0.4	0.7	0.2	
6841770	14JH008 DUP	10.6	3.1	1.22	4.0	0.7	4.3	0.9	2.5	0.33	2.4	0.32	2.0	1.0	1	-0.1	-0.4	0.7	0.2	
6841302	12JH024	5.8	1.8	0.85	2.1	0.4	2.4	0.5	1.8	0.23	2.0	0.33	1.4	-0.5	-1	0.1	-0.4	2.4	0.6	
6841310	12JH024 DUP	6.8	1.7	0.83	2.2	0.4	2.8	0.6	1.8	0.27	1.9	0.34	1.5	-0.5	2	0.1	-0.4	2.4	0.6	
6841319	12JH038A02	11.4	2.7	0.59	3.4	0.6	4.3	1.0	3.3	0.57	4.0	0.59	3.6	-0.5	-1	-0.1	-0.4	3.3	7.4	
6841330	12JH038A02 DUP	10.9	2.3	0.52	3.2	0.6	3.9	1.0	3.3	0.50	3.6	0.59	3.4	-0.5	-1	-0.1	0.4	3.1	7.0	
6841343	12JH054	13.0	3.6	1.30	4.7	0.8	5.1	1.0	3.1	0.40	2.9	0.43	2.4	-0.5	-1	-0.1	-0.4	1.1	0.3	
6841350	12JH054 DUP	12.1	3.6	1.28	4.2	0.7	4.6	1.0	3.0	0.40	2.7	0.40	2.2	-0.5	-1	-0.1	-0.4	1.0	0.2	
6841361	JHC-12-010	26.5	6.8	2.56	8.1	1.3	8.3	1.6	5.1	0.72	4.8	0.77	5.2	1.3	2	-0.1	-0.4	2.9	0.3	
6841370	JHC-12-010 DUP	23.5	6.9	2.35	7.6	1.2	7.6	1.5	4.8	0.68	4.7	0.73	5.0	-0.5	2	0.1	-0.4	2.7	0.3	
6841386	JHC-12-033	33.9	8.7	1.66	10.2	1.7	12.1	2.6	8.6	1.18	9.2	1.28	11.4	3.5	8	1.5	-0.4	8.7	3.3	
6841390	JHC-12-033 DUP	39.2	10.1	1.81	11.6	2.0	12.8	2.7	8.6	1.36	9.2	1.37	11.4	0.7	2	0.9	0.5	9.3	3.6	
6841405	JHC-12-050	40.6	10.8	2.06	11.4	2.0	13.7	2.7	8.6	1.24	8.6	1.33	11.8	1.5	-1	-0.1	-0.4	6.5	0.4	
6841410	JHC-12-050 DUP	35.2	8.8	1.86	9.7	1.8	12.4	2.5	7.7	1.14	7.7	1.18	10.7	0.8	-1	-0.1	-0.4	5.7	0.4	
6841425	JHC-12-069	25.9	7.4	2.39	8.6	1.4	9.1	1.9	5.7	0.82	5.6	0.87	5.1	0.6	2	-0.1	0.6	2.8	0.5	
6841430	JHC-12-069 DUP	26.3	7.1	2.64	9.0	1.5	9.4	2.0	6.1	0.85	5.9	0.91	4.9	-0.5	-1	-0.1	0.6	2.8	0.5	
6841446	JHC-12-088	57.7	14.8	3.30	17.2	3.2	20.5	4.0	11.9	1.66	10.8	1.53	14.8	1.1	4	1.4	-0.4	15.1	0.8	
6841450	JHC-12-088 DUP	57.9	15.5	3.21	17.1	3.1	20.7	4.0	12.3	1.70	11.8	1.66	16.7	1.1	3	-0.1	-0.4	15.9	0.7	
6841461	JHC-12-101	8.9	2.8	0.92	3.4	0.6	3.8	0.9	2.8	0.40	2.6	0.41	1.7	0.8	4	-0.1	-0.4	1.1	0.4	
6841470	JHC-12-101 DUP	9.0	2.7	0.81	3.4	0.6	3.5	0.8	2.5	0.34	2.5	0.36	1.6	-0.5	1	-0.1	-0.4	1.1	0.3	
6841482	JHC-12-121	41.1	11.1	2.22	13.6	2.5	18.1	3.9	12.6	1.88	13.1	1.93	13.6	1.2	5	-0.1	-0.4	13.9	1.5	
6841490	JHC-12-121 DUP	47.6	11.7	2.38	14.8	2.8	18.8	3.9	12.7	1.85	13.0	1.94	13.9	0.9	4	-0.1	-0.4	13.9	1.6	
6841506	JHC-12-143	5.4	1.4	1.77	1.9	0.3	2.4	0.5	1.5	0.24	1.7	0.27	1.3	0.6	2	-0.1	-0.4	1.0	1.9	
6841510	JHC-12-143 DUP	6.6	1.7	1.88	2.1	0.4	2.6	0.5	1.8	0.26	1.9	0.28	1.5	-0.5	-1	-0.1	-0.4	1.3	2.1	