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CRM ALPHA ALUMINA

analysis listed in mass % 51 other trace elements on certificate 250 g units

Number	Alpha-Alumina	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SO_3	SiO_2	TiO_2	LOI
IMS-135	99.04	(99.863)	<0.01	<0.01	<0.001	<0.01	<0.001	<0.01	(0.001)	(0.002)	(0.06)	(0.005)	(0.15)

ALUMINA

= class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg T = Total

#	Number	Al_2O_3	Be*	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO*	Na_2O	P*	P_2O_5	SiO_2	TiO_2	LOI	Units
AVAILABLE INDIVIDUALLY																
~~2~~	~~CERAM AN27~~	~~99.76~~	~~.~~	~~0.03~~	~~.~~	~~0.02~~	~~<0.01~~	~~<0.01~~	~~.~~	~~0.08~~	~~.~~	~~.~~	~~0.08~~	~~<0.01~~	~~.~~	~~25 or 100 g~~
2	CERAM AN26	99.76	.	0.03	.	0.03	<0.01	<0.01	.	0.02	.	.	0.12	<0.01	(0.08)	25 or 100 g
2	CERAM AN25	99.39	.	0.03	.	0.03	0.01	<0.01	.	0.53	.	<0.01	<0.01	<0.01	(0.34)	25 or 100 g
1	VS SH12/3	73.6	.	18.8	0.46	0.66T	.	2.15	.	.	.	.	0.76	.	.	100 g
1	NCS DC62107b	67.64	.	0.60	.	2.48	0.11	0.21	.	0.03	SO_3:0.03		10.85	3.14	14.50	20 g
1	DSZU 123.45-03	.	.	.	2.7*	0.02	V_2O_5: 3.7*		2.3	0.33	.	4.0*	0.022	0.0046	.	50 g last
AVAILABLE ONLY AS SET 1-5																
~~1~~	~~DSZU 123.46-03-1~~	~~.~~	~~.~~	~~.~~	~~.~~	~~0.022~~	~~.~~	~~.~~	~~.~~	~~0.20~~	~~.~~	~~.~~	~~0.020~~	~~.~~	~~.~~	~~20 g SET 1-5 only~~
~~1~~	~~DSZU 123.46-03-2~~	~~.~~	~~.~~	~~.~~	~~.~~	~~0.022~~	~~.~~	~~.~~	~~.~~	~~0.33~~	~~.~~	~~.~~	~~0.021~~	~~.~~	~~.~~	~~20 g SET 1-5 only~~
~~1~~	~~DSZU 123.46-03-3~~	~~.~~	~~.~~	~~.~~	~~.~~	~~0.037~~	~~.~~	~~.~~	~~.~~	~~0.44~~	~~.~~	~~.~~	~~0.037~~	~~.~~	~~.~~	~~20 g SET 1-5 only~~
~~1~~	~~DSZU 123.46-03-4~~	~~.~~	~~.~~	~~.~~	~~.~~	~~0.055~~	~~.~~	~~.~~	~~.~~	~~0.47~~	~~.~~	~~.~~	~~0.054~~	~~.~~	~~.~~	~~20 g SET 1-5 only~~
~~1~~	~~DSZU 123.46-03-5~~	~~.~~	~~.~~	~~.~~	~~.~~	~~0.090~~	~~.~~	~~.~~	~~.~~	~~0.72~~	~~.~~	~~.~~	~~0.077~~	~~.~~	~~.~~	~~20 g SET 1-5 only~~

CRM ALUMINA SET

SET/3 ONLY for R034, others set or individually trace informational Cl, NiO, SO_3 50 g

Number	B_2O_3	CaO	CuO	Fe_2O_3	Ga_2O_3	K_2O	MgO	Na_2O	SiO_2	SrO	TiO_2	ZnO	ZrO_2	LOI
JCRM R034	(<0.0006)	0.0002	(<0.0003)	(0.0003)	0.0021	0.0020	(<0.0001)	0.0018	0.0045	(<0.0001)	(<0.0004)	(<0.0002)	(<0.0002)	0.188
JCRM R035	(<0.0006)	0.0188	0.0018	0.0151	0.0074	0.0005	0.0013	0.222	0.0116	0.0007	0.0029	0.0012	0.0009	0.156
JCRM R036	0.0533	0.0242	(<0.0003)	0.0139	0.0076	(0.0002)	0.0006	0.0316	0.0569	0.0002	0.0032	0.0007	0.0004	0.072

CRM ALUMINOUS SET

available in SET/3 only 100 g units

Number	Type	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	Na_2O	P_2O_5	SiO_2	TiO_2	ZrO_2+HfO_2	LOI
JCRM R303	**Bauxite**	88.49	0.012	1.51	.	0.006	.	0.064	5.55	2.93	0.110	.
JCRM R304	**Sillimanite**	55.94	0.427	0.585	0.329	0.451	0.273	.	35.90	1.33	0.105	4.26
JCRM R041	**Mullite**	70.18	0.059	0.598	0.174	0.190	0.197	0.136	28.11	0.185	0.058	.

CRM ALUMINUM FLUORITE

analysis listed in mass % 100 g units

Number	F	Al	Fe_2O_3	Na	P_2O_5	SiO_2	SO_4	LOI
NCS DC91016	64.97	31.92	0.025	0.028	0.0275	0.196	0.076	1.25
NCS DC91008	61.79	30.70	0.132	0.097	0.0253	0.104	0.585	(4.61)
NCS DC91011	61.51	32.28	0.021	0.121	0.1317	0.429	0.627	0.754
NCS DC91010	60.96	30.52	0.126	0.125	0.0265	0.251	0.748	(5.48)
NCS DC91013	60.88	33.12	0.020	0.315	0.0013	0.017	0.098	0.467
NCS DC91007	60.76	30.27	0.156	0.104	0.0295	0.146	0.654	(6.00)
NCS DC91015	59.99	30.70	0.107	0.111	0.0247	0.301	0.702	(5.61)
NCS DC91012	59.74	33.93	0.037	0.126	0.0027	0.016	0.136	0.547
NCS DC91009	57.79	34.68	0.028	0.113	0.0008	0.015	0.093	0.662
NCS DC91014	57.72	34.76	0.015	0.113	0.0007	0.014	0.104	0.640

CRM ANDALUSITE

100 g units

Number	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	Na_2O	SiO_2	TiO_2	LOI
SARM 34	59.15	(0.13)	0.75	0.23	0.13	0.093	39.04	0.16	0.62

CRM ANDESITE WITH EXTENSIVE ANALYSIS

analysis listed in mass %

Number	Si	SiO_2	Al	Al_2O_3	CO_2	CaO	Fe	FeO	Fe_2O_3	$T.Fe_2O_3$	H_2O		K_2O	MgO	MnO	Na_2O	P_2O_5	TiO_2	LOI
JA-1	29.90	63.97	8.06	15.22	.	5.70	4.95	3.98	2.59	7.07	+0.72	-0.30	0.77	1.57	0.157	3.84	0.165	0.85	.
JA-1a	.	63.66	.	15.40	.	5.74	.	3.67	.	7.17	.	.	0.78	1.55	0.157	3.90	0.165	0.87	.
GBW 07110	.	63.06	.	16.1	1.03	2.47	.	0.19	4.51	.	+1.79	.	5.17	0.84	0.089	3.06	0.36	0.80	.
JA-3	29.11	62.27	8.23	15.56	.	6.24	4.62	4.83	1.15	6.60	+0.20	-0.11	1.41	3.72	0.104	3.19	0.116	0.70	.
GBW 07104	.	60.62	.	16.17	3.47	5.20	.	2.39	.	4.90	+(1.5)	.	1.89	1.72	.	3.86	.	.	4.44
~~US AGV-2a~~	~~27.7~~	~~59.3~~	~~8.95~~	~~16.91~~	~~.~~	~~5.20~~	~~4.68~~	~~.~~	~~.~~	~~6.69~~	~~.~~	~~.~~	~~2.88~~	~~1.79~~	~~.~~	~~4.19~~	~~0.48~~	~~1.05~~	~~.~~
USZ 48-2009	.	59.20	.	16.72	.	5.58	.	(1.66)	.	5.43	.	.	2.42	3.52	0.081	4.46	0.264	0.71	1.39
CGL 019	.	58.64	.	16.0	.	3.85	.	.	.	5.91	(0.58)		4.85	1.74	0.0469	4.41	1.002	1.395	(1.33)
JA-2	26.37	56.42	8.16	15.41	.	6.29	4.34	3.69	2.16	6.21	+1.12	-1.25	1.81	7.60	0.108	3.11	0.146	0.66	.

continued analysis listed in mg/kg except * which is ppb and % which is mass %

Number	Ag	As	Au*	B	Ba	Be	Bi	Ca%	Cd	Ce	Cl	Co	Cr	Cs	Cu	Dy	Er	Eu
JA-1	.	2.78	0.16	21.0	311	0.50	.	4.07	0.11	13.3	43.0	12.3	7.83	0.62	43.0	4.55	3.04	1.20
JA-1a	.	.	.	.	(322)	.	.	.	.	.	.	(12.9)	(4.1)	.	(41.8)	.	.	.
GBW 07110	0.17	5.96	.	10.8	1053	3.64	0.09	.	0.61	117	160	7.9	7.7	7.16	9.1	5.32	2.93	1.96
JA-3	0.084	.	.	24.8	323	0.80	.	4.46	.	22.8	.	21.1	66.2	2.08	43.4	3.01	1.57	0.82
GBW 07104	0.071	2.1	(0.95)	4.7	1020	1.1	0.081	.	0.061	40	(46)	13.2	32	2.3	55	1.85	0.85	1.02
~~US AGV-2a~~	~~.~~	~~.~~	~~.~~	~~.~~	~~1140~~	~~2.3~~	~~.~~	~~3.72~~	~~.~~	~~68~~	~~.~~	~~16~~	~~17~~	~~(1.16)~~	~~53~~	~~3.6~~	~~(1.79)~~	~~(1.54)~~
USZ 48-2009	(0.08)	(3.64)	.	.	672	(2.01)	(0.12)	.	(0.06)	55.2	.	19.2	95.9	1.09	41.2	(2.55)	(1.18)	1.44
CGL 019	.	6.5	.	.	2828	2.22	(0.10)	.	.	219	.	13.4	35	11.7	21.6	4.03	1.62	3.36
JA-2	.	.	0.26	20.7	321	2.05	.	4.50	.	32.7	.	29.5	436	4.63	29.7	2.80	1.48	0.93

Number	F	Ga	Gd	Ge	Hf	Hg	Ho	I	In	K%	La	Li	Lu	Mg%	Mn%	Mo	Na%	Nb
JA-1	161	16.7	4.36	1.33	2.42	.	0.95	.	.	0.64	5.24	10.8	0.47	0.95	0.122	1.59	2.85	1.85
JA-1a	.	.	.	.	.	.	.	.	.	.	.	(11.6)	.	.	.	(1.2)	.	.
GBW 07110	1120	19.8	6.54	1.11	7.5	0.014	1.10	0.07	0.11	.	62.5	17.5	0.49	.	.	0.95	.	20.8
JA-3	.	16.3	2.96	.	3.42	.	0.51	.	.	1.17	9.33	14.5	0.32	2.24	0.081	1.89	2.37	3.41
GBW 07104	280	18.1	2.7	0.93	2.9	0.012	0.34	(0.14)	0.037	.	22	18.3	0.12	.	0.0604	0.54	.	6.8
~~US AGV-2a~~	~~(440)~~	~~20~~	~~(4.69)~~	~~.~~	~~(5.08)~~	~~.~~	~~(0.71)~~	~~.~~	~~.~~	~~2.39~~	~~38~~	~~(11)~~	~~(0.25)~~	~~1.08~~	~~0.0770~~	~~.~~	~~3.11~~	~~15~~
USZ 48-2009	.	21.1	(3.93)	.	3.80	(0.004)	(0.46)	.	.	.	26.2	(13.2)	(0.15)	.	.	(0.60)	.	3.23
CGL 019	.	21.7	(7.8)	.	8.3	0.658	.	.	.	.	112	22.7	0.179	.	.	(1.74)	.	14.8
JA-2	.	16.9	3.06	.	2.86	.	0.50	.	.	1.50	15.8	27.3	0.27	4.58	0.084	0.60	2.31	9.47

Number	Nd	Ni	P%	Pb	Pr	Rb	S	Sb	Sc	Se	Sm	Sn	Sr	Ta	Tb	Te	Th	Ti%
JA-1	10.9	.	0.072	6.55	1.71	12.3	21.6	0.22	28.5	.	3.52	.	263	0.13	0.75	.	0.82	0.51
JA-1a	.	(2.3)	.	.	.	.	.	.	.	.	.	.	(268)	.	.	.	.	.
GBW 07110	47.2	12.6	.	97.7	13.2	183	230	1.34	7.52	0.03	8.63	3.12	318	1.42	0.99	(0.007)	16.7	.
JA-3	12.3	32.2	0.051	7.70	2.40	36.7	.	.	22.0	.	3.05	.	287	0.27	0.52	.	3.25	0.42
GBW 07104	19	17	0.1030	11.3	4.9	38	192	0.12	9.5	(0.04)	3.4	0.79	790	0.40	0.41	0.017	2.6	0.3090
~~US AGV-2a~~	~~30~~	~~19~~	~~0.21~~	~~13~~	~~8.3~~	~~68.6~~	~~.~~	~~(0.6)~~	~~13~~	~~.~~	~~(5.7)~~	~~(2.3)~~	~~658~~	~~(0.89)~~	~~(0.64)~~	~~.~~	~~6.1~~	~~0.63~~
USZ 48-2009	27.2	61.2	.	18.7	(6.77)	49.7	.	(0.27)	11.8	.	5.16	(0.86)	1116	(0.25)	0.49	.	6.46	.
CGL 019	90.7	27	.	34.1	25.3	104	.	8.5	8.6	.	13.2	1.8	2692	0.74	0.871	.	11.4	.
JA-2	13.9	130	0.064	19.2	3.84	72.9	.	.	19.6	.	3.11	1.68	248	0.80	0.44	.	5.03	0.40

Number	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Units
JA-1	.	0.47	0.34	105	.	30.6	3.03	90.9	88.3	20 g
JA-1a	.	.	.	(107)	.	.	.	(91)	(94.9)	100 g
GBW 07110	1.02	0.50	3.04	64.3	1.62	28.0	3.15	164	335	50 g
JA-3	.	.	1.18	169	.	21.2	2.16	67.7	118	20 g
GBW 07104	0.16	0.15	0.90	94	(0.45)	9.3	0.89	71	99	70 g
~~US AGV-2a~~	~~(0.27)~~	~~(0.26)~~	~~1.88~~	~~120~~	~~.~~	~~20~~	~~1.6~~	~~86~~	~~230~~	~~25 g~~
USZ 48-2009	(0.22)	(0.17)	1.96	123	(1.70)	11.8	1.00	71.5	141	100 g
CGL 019	(0.45)	0.207	1.72	102	(0.93)	17.7	1.231	89	368	100 g
JA-2	0.32	0.28	2.21	126	.	18.3	1.62	64.7	116	20 g

CRM ANHYDRITE

analysis listed in mass % 50 g units

Number	Al_2O_3	CO_2	CaO	Fe_2O_3	H_2O	K_2O	MgO	MnO	Na_2O	SO_3	SiO_2	Sr	TiO_2
GUW AN	(0.023)	0.65	40.7	0.014	(0.5)	0.013	0.34	(0.002)	0.032	57.6	(0.22)	0.14	(0.003)

continued analysis listed in mg/kg

Number	B	Ba	Cl	Cr	Cs	Cu	Ga	Li	Mo	Rb	Sb	Ta	Th	V	Zn	Zr
GUW AN	100	14.8	0.033	0.90	0.037	4	4.3	9	1.2	4.7	0.044	0.007	0.048	18	7.9	13

CRM ANORTHOSITE

analysis listed in mass % — 40 g units

Number	SiO_2	Al_2O_3	Ba	CaO	CO_2	FeO	Fe_2O_3	$T.Fe_2O_3$	H_2O	H_2O+	$T.H_2O$	K_2O	MgO	MnO	Na_2O	P_2O_5	S	TiO_2
VS MO11	53.46	27.42	0.0319	10.95	0.0	1.09	0.53	1.74	0.088	0.33	0.42	0.65	0.49	0.037	4.39	0.041	0.0100	0.18
VS 2120-81	51.77	22.78	0.051	10.06	0.36	4.66	6.26	.	0.40	.	.	0.76	2.10	0.076	4.04	0.140	0.069	1.87
~~VS MO10~~	~~51.65~~	~~23.91~~	~~0.0294~~	~~10.18~~	~~0.14~~	~~4.40~~	~~1.45~~	~~6.34~~	~~0.095~~	~~0.26~~	~~0.36~~	~~0.50~~	~~2.24~~	~~0.073~~	~~3.99~~	~~0.13~~	~~0.0460~~	~~0.83~~

continued analysis listed in mg/kg except % which is mass %

Number	B	Be	Co	Cr	Cs	Cu	F	Ga	La	Li	Mo	Nb	Ni	Pb	Rb	Sc	Sn	Sr	V%	Y	Yb	Zn	Zr
VS MO11	4.5	0.8	9.6	12	0.73	26	420	21	20	7.5	1.2	2.6	14	6.8	2.7	5	5.1	802	0.0024	8	1.1	50	42
VS 2120-81	.	0.9	23	36	.	31	.	17	.	.	.	.	10	7	.	23	.	.	0.013	.	.	83	72
~~VS MO10~~	~~8.7~~	~~1.1~~	~~27~~	~~23~~	~~0.55~~	~~44~~	~~380~~	~~26~~	~~24~~	~~7.1~~	~~2.0~~	~~3.9~~	~~32~~	~~8.0~~	~~5.5~~	~~11~~	~~5.0~~	~~477~~	~~0.0109~~	~~17~~	~~2.0~~	~~96~~	~~58~~

CRM ANTIMONY ORE

analysis listed in mass — 200 g units

Number	Al	As	C	Ca	Cu	Fe	H_2O	K	Mg	Na	Pb	S	Sb	Si	LOI
CAN CD-1	(5.5)	0.66	(0.2)	(1.4)	(<0.01)	(2.8)	(0.2)	(1.8)	(0.6)	(0.1)	(0.02)	(3.1)	3.57	(32.9)	(4.0)

CRM ANTIMONY ORE

analysis listed in mass % — analysis in mg/kg * Sb calculated from certified results for 4ACID, ICP, and XRF

Number	Sb	Pb	S	Se	Zn	Ag	As	Au	Bi	Cd	Co	Cu	Ga	Li	Nb	Ni	Sn	Units
GSb-3 *	53.69	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	10 g
GSb-2	31.0838	.	.	.	.	.	.	23.64	.	.	.	.	.	.	.	.	.	10 g
GSb-11 *	21.10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	10 g
GSb-10 *	11.66	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	10 g
GSb-6 *	9.88	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	10 g
GSb-9 *	6.50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	10 g
GSb-4 *	3.43	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	10 g
~~NCS DC70013~~	~~1.01~~	~~0.012~~	~~1.02~~	~~0.010~~	~~0.037~~	~~7.3~~	~~25.3~~	~~.~~	~~(0.24)~~	~~2.6~~	~~2.2~~	~~51.3~~	~~9.1~~	~~22.0~~	~~5.4~~	~~3.2~~	~~3.0~~	~~50 g~~
GSb-7 *	1.75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	10 g
GSb-8 *	1.63	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	10 g
GSb-5 *	0.18	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	10 g
GSb-1	0.1636	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	10 g

CRM ARAGONITE/CALCITE

100 g units

Number	Al_2O_3	CO_2	CaO	F	Fe_2O_3	K_2O	MgO	Na_2O	P_2O_5	S	SiO_2	SrO	LOI
UNS AK	0.11	43.0	54.9	0.20	0.130	0.037	0.110	0.047	0.029	0.046	0.64	0.28	43.27

CRM ASCHARITE ORE

Number	B_2O_3	CaO	T.Fe	FeO	MgO	P	S	SiO_2	Ins.Res.	Units
NCS DC16005	5.65	0.15	52.98	26.13	11.64	0.016	1.242	4.51	4.72	100 g

CRM BARITE ORE

70 g units

Number	BaO	$BaSO_4$	CaF_2	Cu	$T.Fe_2O_3$	Pb	Salt	SO_3	Sr	Zn
NCS DC86002	65.40	98.47	.	(0.00029)	.	.	(0.11)	34.37	0.10	(0.00060)
NCS DC86004	57.36	86.14	.	0.00421	.	.	(0.13)	31.44	1.22	(0.00056)
NCS DC86005	44.80	66.93	.	0.0129	.	.	(0.21)	24.50	1.12	0.00269
NCS DC86003	28.36	41.46	14.03	0.00067	.	.	(0.37)	14.99	0.054	0.00124
NCS DC86001	28.34	42.41	.	0.0109	49.37	.	(0.28)	15.94	0.39	0.00223
NCS DC86007	27.01	40.54	.	0.00102	.	.	(0.21)	13.95	0.059	0.00364
NCS DC86006	13.00	18.87	.	0.14	20.96	0.41	0.93	51.33	0.058	3.76

CRM **BASALT WITH EXTENSIVE ANALYSIS** analysis listed in mass %

Number	SiO_2	Al_2O_3	CO_2	CaO	FeO	Fe_2O_3	$T.Fe_2O_3$	H_2O	H_2O+	$T.H_2O$	K_2O	MgO	MnO	Na_2O	P_2O_5	TiO_2	
~~US BCR 2~~	~~54.1~~	~~13.5~~	~~.~~	~~7.12~~	~~.~~	~~.~~	~~13.8~~	~~.~~	~~.~~	~~.~~	~~1.79~~	~~3.59~~	~~.~~	~~3.16~~	~~0.35~~	~~2.26~~	
JB-2a	53.22	14.67	.	9.79	9.83	.	14.18	.	.	.	0.41	4.58	0.214	2.03	0.095	1.18	
USZ 46-2008	51.85	14.50	.	5.41	6.15	9.85	.	.	.	.	3.99	6.33	0.13	4.40	0.85	2.11	
JB-1b	51.11	14.38	.	9.6	5.16	3.29	9.02	1.06-	1.53	.	1.32	8.14	0.147	2.63	0.256	1.26	
JB-3	50.96	17.20	.	9.79	7.85	3.20	11.82	0.07-	0.18	.	0.78	5.19	0.177	2.73	0.294	1.44	
JB-3a	50.87	17.16	.	9.75	7.71	.	11.83	.	.	.	0.78	5.17	0.179	2.74	0.291	1.44	
~~US BHVO 2~~	~~49.9~~	~~13.5~~	~~.~~	~~11.4~~	~~.~~	~~.~~	~~12.3~~	~~.~~	~~.~~	~~.~~	~~0.52~~	~~7.23~~	~~.~~	~~2.22~~	~~0.27~~	~~2.73~~	
VS MO15	49.55	16.93	0.20	8.30	4.60	4.96	10.07	0.32-	1.34	1.66	1.51	5.23	0.059	4.35	0.39	1.68	
GUW BM	49.51	16.25	1.35	6.47	7.28	9.67	.	3.62	.	.	0.20	7.47	0.140	4.65	0.106	1.14	
VS 2116-81	49.15	16.53	(0.13)	18.87	7.71	1.07	.	1.34	.	.	0.98	6.56	0.164	3.74	0.40	1.65	
SRM 688	48.4	17.36	.	(12.17)	7.64	10.35	.	.	.	.	0.187	(8.4)	.	2.15	0.134	1.17	
CGL 014	48.34	13.03	.	8.88	(7.91)	.	12.66	(0.13)	(0.37)	.	1.72	8.03	0.15	3.63	0.70	2.68	
~~US BIR 1a~~	~~47.96~~	~~15.5~~	~~.~~	~~13.3~~	~~0.34~~	~~2.06~~	~~11.3~~	~~.~~	~~.~~	~~.~~	~~0.030~~	~~9.70~~	~~0.175~~	~~1.82~~	~~0.021~~	~~0.96~~	
VS MO14	46.85	17.06	0.0	9.60	6.83	3.26	10.85	0.81	1.73	2.54	(0.46)	8.05	0.15	3.00	0.37	1.62	**Olivine**

continued analysis listed in mg/kg except % which is mass % and * which is ppb

Number	Ag	Al%	As	Au*	B	Ba	Be	Bi	C	Ca%	Cd	Ce	Cl	Co	Cr	Cs	Cu
~~US BCR 2~~	~~.~~	~~7.14~~	~~.~~	~~.~~	~~.~~	~~683~~	~~.~~	~~.~~	~~.~~	~~5.09~~	~~.~~	~~53~~	~~.~~	~~37~~	~~18~~	~~(1.1)~~	~~(19)~~
JB-2a	.	.	.	.	.	(222)	.	.	.	.	.	.	.	(39)	(28)	.	(272)
USZ 46-2008	.		.			772	2.81	.	.	.	.	103	.	36.3	222	1.15	32.21
JB-1b	.	.	1.24	.	.	.	1.3	.	419	.	.	.	.	40.3	439	1.21	55.5
JB-3	0.075	9.10	1.84	1.99	18.0	245	0.81	.	(120)	7.00	0.081	21.5	(259)	34.3	58.1	0.94	194
JB-3a	.	.	.	.	.	(244)	(0.69)	.	.	.	.	.	.	(35.5)	(57)	.	(195)
~~US BHVO 2~~	~~.~~	~~7.16~~	~~.~~	~~.~~	~~.~~	~~136~~	~~.~~	~~.~~	~~.~~	~~0.17~~	~~.~~	~~38~~	~~.~~	~~45~~	~~286~~	~~.~~	~~127~~
VS MO15	.	.	.	.	9.9	225	2.2	.	.	.	.	.	.	34	136	1.4	28
GUW BM	(0.8)	.	13	.	(12)	250	1.3	.	.	.	.	.	.	36	121	2.0	43
VS 2116-81	.	.	.	.	.	300	2.3	.	.	.	.	.	.	37	99	.	61
SRM 688	.	.	.	.	.	.	.	.	.	.	.	.	.	.	332	.	.
CGL 014	.	.	.	.	.	474	.	.	.	.	.	67.51	.	46.50	188	(0.6)	64.00
~~US BIR 1a~~	~~.~~	~~.~~	~~(0.44)~~	~~.~~	~~(0.33)~~	~~(6)~~	~~(0.58)~~	~~.~~	~~.~~	~~.~~	~~.~~	~~1.9~~	~~(26)~~	~~52~~	~~370~~	~~.~~	~~125~~
VS MO14	.	.	.	.	8.7	172	1.9	.	.	.	.	.	.	50	152	1.5	66

Number	Dy	Er	Eu	F%	Fe	Ga	Gd	Ge	Hf	Hg	Ho	In	K%	La	Li	Lu	Mg%
~~US BCR 2~~	~~.~~	~~.~~	~~2.0~~	~~(0.0440)~~	~~9.65~~	~~23~~	~~6.8~~	~~.~~	~~(4.8)~~	~~.~~	~~(1.33)~~	~~.~~	~~1.49~~	~~25~~	~~(9)~~	~~(0.51)~~	~~2.16~~
JB-2a	.	.	.	.	.	.	.	.	.	.	.	.	.	.	(7.9)	.	.
USZ 46-2008	4.67	1.84	2.62	.	.	22.63	7.17	1.29	6.63	.	0.78	.	.	55.99	11.08	0.19	.
JB-1b	.	.	.	.	.	.	.	.	.	.	.	.	.	.	10.8	.	.
JB-3	4.54	2.49	1.32	0.0253	8.27	19.8	4.67	1.12	2.67	(0.0024)	0.80	.	0.65	8.81	7.21	0.39	3.13
JB-3a	.	.	.	.	.	.	.	.	.	.	.	.	.	(7.3)	.	.	.
~~US BHVO 2~~	~~.~~	~~.~~	~~.~~	~~(0.0370)~~	~~8.63~~	~~21.7~~	~~(6.3)~~	~~.~~	~~4.1~~	~~.~~	~~(1.04)~~	~~.~~	~~0.43~~	~~15~~	~~(5)~~	~~(0.28)~~	~~4.36~~
VS MO15	.	.	.	0.1600	.	20	.	.	.	.	.	.	.	69	16	.	.
GUW BM	(4.6)	(2.7)	1.12	0.028	.	16	(5.8)	(1.3)	3.0	.	(1.4)	.	.	9	72	0.41	.
VS 2116-81	.	.	.	0.0480	.	22	.	1.1	.	.	.	.	.	4.0	9.3	.	.
SRM 688	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CGL 014	(5.23)	(2.21)	(2.48)	(0.08)	.	21.20	(7.3)	.	(5.25)	.	(0.91)	.	.	35.11	(9.33)	(0.22)	.
~~US BIR-1a~~	~~4~~	~~.~~	~~0.55~~	~~(0.0044)~~	~~.~~	~~(16)~~	~~2~~	~~.~~	~~0.6~~	~~.~~	~~.~~	~~.~~	~~.~~	~~0.63~~	~~3.6~~	~~(0.3)~~	~~.~~
VS MO14	.	.	.	0.0470	.	15	.	.	.	.	.	.	.	34	7.5	.	.

Number	Mn%	Mo	Na%	Nb	Nd	Ni	P%	Pb	Pr	Rb	S	Sb	Sc	Se	Si%	Sm	Sn
~~US BCR-2~~	~~0.1520~~	~~248~~	~~2.34~~	~~.~~	~~28~~	~~.~~	~~0.15~~	~~(11)~~	~~(6.8)~~	~~48~~	~~.~~	~~.~~	~~33~~	~~.~~	~~23.3~~	~~(6.7)~~	~~.~~
JB-2a	.	.	.	.	.	(15.5)	.	.	.	(7.2)	.	.	.	.	.	.	.
USZ 46-2008	.	5.20	.	52.21	46.62	162	.	8.70	11.90	63.05	.	0.28	10.10	.	.	8.72	2.66
JB-1b	.	.	.	.	.	148	.	6.8	.	39.1	10	0.2	.	.	.	.	.
JB-3	0.137	1.09	2.03	2.47	15.6	36.2	0.128	5.58	3.11	15.1	9.86	0.12	33.8	(0.069)	23.82	4.27	0.94
JB-3a	.	.	.	.	.	(39)	.	(5.7)	.	(15.1)	.	.	.	.	.	.	.
~~US BHVO 2~~	~~0.1290~~	~~.~~	~~1.64~~	~~(18)~~	~~25.0~~	~~119~~	~~0.12~~	~~.~~	~~.~~	~~9.8~~	~~.~~	~~.~~	~~32~~	~~.~~	~~23.3~~	~~(6.2)~~	~~(1.9)~~
VS MO15	.	3.4	.	13	.	90	.	8.8	.	50	160	.	29	.	.	.	4.2
GUW BM	.	(0.8)	.	.	15	57	.	13	(3.0)	10	.	2.3	34	.	.	3.6	.
VS 2116-81	.	1.8	.	.	.	86	.	12	.	14	(90)	.	22	.	.	.	7.0
SRM 688	0.167	.	.	.	.	.	.	.	.	1.91	.	.	.	.	.	.	.
CGL 014	.	(2.92)	.	56.50	36.33	163	.	5.66	(8.19)	28.60	SO3:	(0.10)	19.33	.	.	(7.74)	.
~~US BIR 1a~~	~~.~~	~~.~~	~~.~~	~~(0.6)~~	~~2.5~~	~~170~~	~~.~~	~~(3)~~	~~.~~	~~.~~	~~.~~	~~(0.58)~~	~~44~~	~~.~~	~~.~~	~~(1.1)~~	~~.~~
VS MO14	.	2.5	.	11	.	111	.	8.6	.	4.0	60	.	25	.	.	.	2.4

Number	Sr	Ta	Tb	Th	Ti%	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	LOI	Units
~~US BCR 2~~	~~346~~	~~.~~	~~(1.07)~~	~~6.2~~	~~1.35~~	~~.~~	~~(0.54)~~	~~1.69~~	~~416~~	~~.~~	~~37~~	~~3.5~~	~~127~~	~~188~~	~~.~~	~~50 g~~
JB-2a	(179)	.	.	.	.	.	.	.	(574)	.	(25.4)	.	(108)	(61.8)	.	100 g
USZ 46-2008	927	3.20	0.95	6.95		0.12	0.23	1.64	105	1.15	20.48	1.34	114	287	.	100 g
JB-1b	439	.	.	.	.	.	.	.	214	.	.	.	80	.	.	100 g
JB-3	403	0.15	0.73	1.27	0.86	0.048	0.42	0.48	372	(1.06)	26.9	2.55	100	97.8	.	20 g
JB-3a	(405)	.	.	.	.	.	.	.	(377)	.	(27.7)	.	(102)	(100)	.	100 g
~~US BHVO 2~~	~~389~~	~~(1.4)~~	~~(0.9)~~	~~(1.2)~~	~~1.63~~	~~.~~	~~.~~	~~.~~	~~317~~	~~.~~	~~26~~	~~(20)~~	~~103~~	~~172~~	~~.~~	~~50 g~~
VS MO15	554	.	.	.	.	.	.	.	234	.	39	2.6	33	152	.	40 g
GUW BM	220	(0.3)	0.9	(3.0)	.	.	.	(1.1)	190	0.9	27	3.0	120	100	.	50 g
VS 2116-81	500	.	.	.	.	.	.	.	150	.	29	2.6	82	190	.	40 g
SRM 688	169.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	60 g
CGL 014	741	(3.24)	(1.02)	(4.76)	.	.	(0.27)	(0.93)	197	(3.41)	23.60	(1.69)	133	201	(0.17)	100 g
~~US BIR 1a~~	~~110~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~310~~	~~.~~	~~16~~	~~1.7~~	~~70~~	~~18~~	~~.~~	~~25 g~~
VS MO14	468	.	.	.	.	.	.	.	181	.	39	3.0	108	162	.	40 g

BAUXITE

= class, 1=CRM and 2=RM BCS: 100g CERAM: 25 or 100g CETEM: 90-120g GBAP: 10g NCS: 50g SRM 600: 90g other SRM: 60g

#	Number	Al_2O_3	$A.Al_2O_3$	CaO	Cr_2O_3	Fe	Fe_2O_3	K_2O	MgO	Na_2O	P_2O_5	SiO_2	$R.SiO_2$	TiO_2	V_2O_5	ZrO_2	LOI
1	BCS 394/1	88.88	.	0.0173	.	.	1.372	.	0.0047	.	0.0574	6.47	.	2.969	.	.	.
1	NCS HC28815	88.55	.	0.15	.	.	1.75	0.11	0.073	0.017	0.23	4.88	.	3.69	.	.	.
1	JCRM R301	87.5	.	0.03	.	.	1.40	0.04	0.02	0.03	0.07	7.24	.	2.90	.	0.13*	0.35
1	NCS DC61105	85.07	.	0.24	.	.	1.18	0.44	0.21	0.080	.	8.17	.	3.76	.	.	0.29
1	NCS HC28814	83.07	.	0.22	.	.	2.71	0.17	0.088	0.022	0.18	9.69	.	3.64	.	.	0.15
1	NCS DC91017	71.14	.	0.75	.	.	2.01	0.477	0.090	0.022	0.221	3.16	.	3.04	.	.	.
1	NCS HC28813	70.28	.	0.37	.	.	6.64	0.20	0.18	0.051	0.25	14.20	.	2.85	.	.	4.57
1	NCS DC91018	64.53	.	0.26	.	.	6.06	0.22	0.246	0.030	0.185	8.02	.	2.59	.	.	.
1	NCS HC28812	60.41	.	0.51	.	.	9.69	0.22	0.26	0.070	0.30	17.82	.	2.22	.	.	7.96
1	DSZU 123.62-13	57.4	.	0.12	0.035	.	0.88	.	0.075	.	0.073	8.73	.	2.51	0.044	.	.
1	NCS DC91019	57.15	.	0.089	.	.	16.11	1.00	0.235	0.31	0.077	6.31	.	2.65	.	.	.
1	SRM 696	54.5	.	0.018	0.047	.	8.70	0.009	0.012	(0.007)	0.050	3.79	.	2.64	0.072	0.14	29.9
1	IPT 131	54.1	.	.	.	.	11.5	0.022	.	.	0.15	0.78	.	1.77	0.042	0.35	30.0
1	BCS 395	52.4	.	0.05	(0.07)	.	16.3	(0.02)	0.02	(0.02)	.	1.24	.	1.93	.	.	27.8
1	CETEM BXSP-1	50.1	40.0	(0.03)	0.003	.	6.7	0.53	(0.06)	(0.02)	0.203	14.7	7.8	1.24	0.016	0.15	26.1
1	SRM 69b	48.8	.	0.13	0.011	.	7.14	0.068	0.085	(0.025)	0.118	13.43	.	1.90	0.028	0.29	27.2
1	SRM 698	48.2	.	0.62	0.080	.	19.6	0.010	0.058	.	0.37	0.69	.	2.38	0.064	0.061	27.3
1	**IMS PBS-75**	46.76	.	0.022	0.045	.	19.15	0.024	0.070	0.027	0.070	15.90	.	2.53	0.060	0.122	15.22
1	NCS HC28811	46.52	.	0.69	.	.	14.01	0.25	0.37	0.10	0.35	22.96	.	1.36	.	.	12.75
1	SRM 697	45.8	.	0.71	0.100	.	20.0	0.062	0.18	.	0.97	6.81	.	2.52	0.063	0.065	22.1
1	DSZU 123.61-13	42.8	.	0.13	0.22	.	27.2	.	0.046	.	0.086	3.36	.	2.15	0.071	.	.
1	GBAP-16	42.60	.	0.11	0.047	.	16.52	0.126	0.146	0.057	0.034	21.56	.	3.587	0.081	0.107	14.94
1	**IMS PBS-74**	42.53	.	0.016	0.041	.	19.73	0.019	0.050	0.025	0.043	18.41	.	1.86	0.064	0.072	17.2
1	**IMS PBS-62**	40.39	.	0.038	0.068	.	27.44	0.039	0.066	0.034	0.051	9.59	.	3.77	0.118	0.099	18.33
1	GBAP-17	40.01	.	0.041	.	.	18.42	0.184	.	0.030	0.080	16.02	.	1.62	0.042	.	19.79
1	SRM 600	40.0	.	0.22	0.024	.	17.0	0.23	0.05	0.022	0.039	20.3	.	1.31	0.060	0.060	20.5
1	GBAP-18	39.77	.	0.010	.	.	18.44	0.256	.	0.015	0.049	19.00	.	1.35	0.059	.	20.8
#	Number	Al_2O_3	$A.Al_2O_3$	CaO	Cr_2O_3	Fe	Fe_2O_3	K_2O	MgO	Na_2O	P_2O_5	SiO_2	$R.SiO_2$	TiO_2	V_2O_5	ZrO_2	LOI

$A.Al_2O_3$: Available Alumina $R.SiO_2$: Reactive Silica * Includes HfO_2

Number	BaO	MnO	MnO_2	SO_3	ZnO	
BCS 394/1	.	.	.	.	.	
NCS HC28815	.	.	.	.	.	C: 0.018
JCRM R301	.	.	.	.	.	
NCS DC61105	.	.	.	.	.	
NCS HC28814	.	0.011	.	.	.	C: 0.050
NCS DC91017	.	0.036	.	S:0.031	0.0018	Ga_2O_3: 0.0114
NCS HC28813	.	0.053	.	.	.	C: 0.099
NCS DC91018	.	0.012	.	S:0.040	0.0040	Ga_2O_3: 0.0106
NCS HC28812	.	0.082	.	.	.	C: 0.14
DSZU 123.62-13	.	0.009	.	S:0.030	.	C: 0.10 CO_2: 0.09 Ga_2O_3: 0.013 100 g unit
NCS DC91019	.	0.021	.	S:0.033	0.0036	Ga_2O_3: 0.008
SRM 696	.	0.004	.	0.150	0.0014	
IPT 131	.	0.31	.	.	0.013	
BCS 395	.	.	.	.	.	
CETEM BXSP-1	.	.	0.070	(0.07)	0.009	
SRM 69b	.	0.110	.	0.551	0.0035	
SRM 698	.	0.38	.	0.143	0.029	
IMS PBS-75	(0.013)	0.042	.	0.061	.	**17034**
NCS HC28811	.	0.13	.	.	.	C: 0.20
SRM 697	.	0.41	.	0.0770	0.037	
DSZU 123.61-13	.	0.023	.	S:0.045	.	C: 0.22 CO_2: 0.19 Ga_2O_3: 0.009 100 g unit
GBAP-16	(0.011)	0.022	.	0.068	.	
IMS PBS-74	(0.009)	0.010	.	0.034	.	**17034**
IMS PBS-62	.	0.020	.	0.074	.	**17034**
GBAP-17	.	.	.	1.20	.	Ga_2O_3: 0.009
SRM 600	.	0.013	.	0.155	0.003	
GBAP-18	.	.	.	0.21	.	Ga_2O_3: 0.009
Number	BaO	MnO	MnO_2	SO_3	ZnO	

RM BAUXITE

Al_2O_3: Available Alumina C.Org: Organic Carbon BXT-04, BXT-06 500 g units others 100 g

Number	Al_2O_3	C.Org	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SO_3	SiO_2	TiO_2	V_2O_5	ZnO	ZrO_2	A.Al_2O_3	LOI
ALC-BXT-10	54	(0.08)	(<0.01)	(0.03)	12.4	(<0.01)	.	(0.01)	.	(0.05)	.	2.7	2.01	(0.06)	.	(0.07)	.	28.6
ALC-BXT-09	53.4	(0.2)	(0.01)	0.037	14.5	(0.01)	(0.03)	(0.04)	(0.01)	(0.07)	(0.06)	7.57	2.98	(0.06)	(0.002)	(0.12)	.	20.8
ALC-BXT-13	53.4	0.051	(0.02)	0.016	11.44	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.09)	4.82	1.54	(0.04)	(0.002)	(0.08)	53.3	28.52
ALC-BXT-08	51.5	(0.082)	(0.02)	(0.049)	9.6	(0.018)	(0.03)	(0.021)	(0.02)	(0.26)	.	3.2	9.5	(0.17)	(0.006)	(0.089)	.	25.6
ALC-BXT-14	51.2	0.162	(0.01)	(0.01)	13.17	(0.01)	(0.01)	(0.02)	(0.01)	(0.062)	(0.11)	5.86	1.11	(0.01)	(0.005)	0.131	50.4	28.35

CRM BERYLLIUM ORE

analysis listed in mass %

Number	BeO	Al_2O_3	CaO	F	FeO	T.Fe_2O_3	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI	Units
NCS DC86313	3.02	15.55	0.52	0.0088 (F-)	0.15	0.47	(0.63)	3.28	0.083	0.020	3.63	(0.018)	71.97	0.010	0.86	70 g
NCS DC86302	0.365	14.86	0.584	0.041	(0.18)	0.593	0.59	3.89	0.069	0.036	4.67	0.013	73.99	0.016	0.73	70 g
NCS DC86301	0.060	14.86	0.582	0.019	(0.18)	0.513	0.60	4.10	0.071	0.030	4.79	(0.012)	73.97	0.015	0.68	70 g

continued analysis listed in mg/kg

Number	CeO_2	Dy_2O_3	Er_2O_3	Eu_2O_3	Gd_2O_3	Ho_2O_3	La_2O_3	Lu_2O_3	Mo	Nd_2O_3	Pr_6O_{11}	RExOy*	Sc_2O_3	Sm_2O_3	Tb_4O_7	Tm_2O_3	W	Y_2O_3	Yb_2O_3
NCS DC86313	13.1	3.62	1.95	0.11	2.83	0.67	6.08	0.25	3.37	5.96	1.58	63.6	1.91	1.99	0.57	0.29	.	23.0	1.88
NCS DC86302	14.8	4.6	2.2	0.15	3.8	0.87	7.7	0.36	1.2	7.6	2.0	78.6	3.1	2.7	0.80	0.36	5.5	28.9	2.5
NCS DC86301	14.3	4.5	2.1	0.14	3.6	0.82	7.0	0.31	0.41	6.6	1.7	75.6	1.7	2.5	0.80	0.32	1.3	29.2	2.2

* RE_xO_y: Rare Earth Oxide

BORATE ORE

= class, 1=CRM and 2=RM analysis listed in mass % BCS: 100 g units SRM: 60 g units

#	Number	B_2O_3	Al_2O_3	BaO	CaO	F	Fe_2O_3	K_2O	MgO	MnO	Na_2O	SO_3	SiO_2	SrO	TiO_2	LOI+H_2O
1	SRM 1835	18.739	3.474	0.0497	21.622	0.348	1.141	1.261	3.411	0.0333	3.484	1.477	18.408	0.9418	0.1332	25.724
2	BCS 205a	18.46	5.38	.	12.58	.	0.15	1.04	0.62	.	8.53	.	52.0	.	0.04	.

CRM BRUCITE

T = total 50 g units

Number	Al_2O_3	CaO	CO_2	T.Fe_2O_3	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2
NCS DC60129	0.053	2.51	8.08	0.49	(25.24)	0.0041	61.43	0.036	0.0066	0.12	2.69
NCS DC60130	0.067	6.18	9.95	0.40	(23.22)	0.0066	56.21	0.033	0.013	0.12	4.47

RM CALCINED BONE

25 or 100 g

Number	Al_2O_3	BaO	CaO	F	Fe_2O_3	H_2O	K_2O	MgO	Na_2O	P_2O_5	SiO_2	SO_3	SrO	TiO_2	LOI
CERAM CCB1	0.05	0.031	53.4	0.13	0.04	(0.12)	0.011	1.14	0.52	40.5	1.28	0.114	0.049	<0.01	2.60

~~CRM CARBONATITE~~

~~analysis listed in mass % T = Total 25 g units~~

Number	Al_2O_3	CaO	$T.Fe_2O_3$	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	Ba	Ce	La	Nb	Sr
~~US COQ 1~~	~~0.37~~	~~48.3~~	~~2.94~~	~~0.16~~	~~1.25~~	~~0.43~~	~~0.04~~	~~2.6~~	~~3.47~~	~~0.15~~	~~0.1000~~	~~0.1700~~	~~0.0750~~	~~0.3900~~	~~1.2000~~

analysis listed in mg/kg FOR ALTERNATES SEE LIMESTONE IN THIS CATALOG

Number	Be	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Ho	Nd	Ni	Pr	Sc	Sm	Tb	Th	U	V	Y	Yb	Zn	Zr
~~US COQ 1~~	~~1.2~~	~~<5~~	~~<10~~	~~0.2~~	~~<10~~	~~18~~	~~7~~	~~15~~	~~6~~	~~50~~	~~3~~	~~480~~	~~13~~	~~150~~	~~3~~	~~56~~	~~4~~	~~10~~	~~11~~	~~110~~	~~81~~	~~6~~	~~87~~	~~65~~

CRM CHROME MAGNESITE

analysis listed in mass % BCS, NCS DC25x: 100 g GCR: 10 g NCS DC28x: 50 g NH: 75 g VS: 125 g

Number	MgO	Cr_2O_3	Al_2O_3	B_2O_3	CaO	Fe	Fe_2O_3	K_2O	Li_2O	MnO	Na_2O	P_2O_5	SO_3	SiO_2	TiO_2	LOI
BCS 396	64.6	15.6	5.73	0.09	1.12	.	10.9	(0.03)	(0.05)	0.17	(0.06)	.	.	1.37	0.26	.
NH 95	63.93	18.30	3.50	.	1.23	.	6.77	.	.	.	.	.	.	4.05	.	.
BCS 370	61.8	13.4	12.3	.	1.54	.	7.23	0.03	0.03	0.11	0.06	.	.	3.01	0.13	.
BCS 369	53.5	17.2	14.7	.	1.17	.	10.3	0.03	0.03	0.11	0.05	.	.	2.59	0.14	.
VS K5/2	54.8	22.6	4.28	.	1.15	.	8.47	.	.	.	.	.	.	8.64	.	.
NH 96	46.98	22.37	12.92	.	1.59	.	11.90	.	.	.	.	.	.	2.71	.	.
GCR-04	36.29	0.701	0.42	.	0.039	.	12.288	(0.02)	.	0.0422	.	0.0182	0.093	39.22	0.115	10.666
NH 97	21.26	40.00	16.12	.	0.52	.	14.73	.	.	.	.	.	.	5.94	.	.
NCS DC25002	20.59	36.31	10.97	.	0.82	9.71	.	.	.	.	.	P:(0.0072)	S:(0.017)	11.71	.	100g
GCR-01	14.59	44.95	11.31	.	0.052	.	19.63	0.448	.	0.4448	.	(0.0098)	0.048	6.63	0.311	1.286
GCR-05	13.21	38.04	11.53	.	0.039	.	25.49	(0.015)	.	0.811	.	(0.0089)	0.018	7.53	0.258	2.848
GCR-02	12.84	43.97	6.87	.	0.107	.	27.13	(0.03)	.	0.716	.	(0.0071)	0.019	5.83	0.317	1.883
GCR-06	9.01	47.92	8.72	.	0.087	.	28.8	0.0198	.	0.716	.	(0.0096)	0.033	3.21	0.343	0.795

CRM CHROMITE

Number	Origin	Cr	Fe	MgO	Ti	Units
~~IGS 30~~	~~Phillipines~~	~~23.95~~	~~11.21~~	~~(16.62)~~	~~0.14~~	~~55 g~~

CHROMIUM ORE

= class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg

#	Number	Cr_2O_3	Al_2O_3	CaO	MgO	Fe	FeO	Fe_2O_3	Mn	MnO	Mn_3O_4	P	P_2O_5	S	SO_3	SiO_2	Ti	TiO_2
1	NCS HC26617	96.19	.	.	.	.	.	0.054	.	.	.	.	.	0.002	.	0.26	.	.
1	NCS DC73013	57.80	10.53	(0.13)	16.45	.	(8.3)	13.70T	0.097	.	.	(0.0012)	.	(0.005)	.	1.10	0.122	.
1	USZ 36-2002	54.37	8.24	0.24	16.09	.	.	14.73T	.	0.15	.	.	0.02	.	0.07	4.73	.	0.11
1	VS R27/1	50.8	8.08	0.131	19.7	9.45	11.2	.	.	.	.	0.0019	.	0.019	.	7.10	.	.
1	VS R14/5	47.0	7.2	0.13	21.6	9.32	10.8	.	.	.	.	0.0017	.	0.037	.	8.79	.	.
1	SARM 146	46.91	14.54	0.10	10.62	.	25.58	.	.	0.22	.	.	.	.	.	0.616	.	0.57
1	NCS DC28130	46.74	14.53	0.053	9.79	20.34	.	.	0.156	.	.	0.0027	.	0.003	.	0.79	0.373	.
1	NCS DC73012	46.56	11.60	0.46	17.92	.	(12.0)	15.34T	0.135	.	.	(0.0013)	.	0.076	.	5.06	0.070	.
1	BCS 308/1	44.91	15.10	0.65	9.15	.	26.58	.	.	0.230	.	.	.	.	.	1.194	.	0.74
1	NCS DC28131	45.10	13.70	0.18	10.37	19.66	.	.	0.150	.	.	0.0033	.	0.0029	.	2.93	0.344	.
1	SARM 131	41.83	14.60	(0.24)	9.15	.	.	30.7	.	0.243	.	.	.	.	.	3.13	.	0.944
1	NCS DC28133	40.20	15.97	0.46	13.41	16.74	.	.	0.142	.	.	0.0037	.	0.017	.	4.73	0.294	.
1	NCS DC28132	36.50	16.22	0.69	15.32	14.83	.	.	0.133	.	.	0.0028	.	0.022	.	7.70	0.244	.
1	NCS DC73011	34.44	11.37	0.32	23.32	.	(8.5)	11.84T	0.090	.	.	0.0020	.	0.024	.	12.24	0.100	.
1	NCS DC28129	33.00	13.94	1.00	17.27	12.90	.	.	0.180	.	.	0.0030	.	0.021	.	12.19	0.136	.
1	NCS DC28128	27.55	18.94	1.27	20.48	9.76	.	.	0.114	.	.	0.0029	.	0.035	.	12.55	0.145	.
2	CERAM AN100	26.60	24.7	1.16	22.38	.	.	12.88	.	.	0.13	.	.	.	.	11.1	.	0.21
1	NCS DC73010	17.59	11.86	0.44	28.12	.	(8.68)	10.51T	0.088	.	.	0.0031	.	0.037	.	20.30	0.085	.
1	FLX CRM111	11.48	4.66	2.07	70.20	.	.	9.54	.	.	0.370	.	0.088	.	(0.13)	1.40	.	0.160

continued

Number	Au*	C	CO_2	Co	H_2O-	H_2O+	HfO_2	K_2O	Na_2O	Ni	NiO	V	WO_3	Zn	ZrO_2	LOI	Units
NCS HC26617	.	0.006	soluble Cr: 1.34%		.	.	.	.	.	.	.	.	.	.	.	.	20 g
NCS DC73013	.	.	(0.14)	0.016	.	(0.59)	.	(0.004)	(0.016)	0.16	.	0.048	.	.	.	.	50 g
USZ 36-2002	0.03	.	0.47	0.01	0.11	.	.	.	.	0.09	.	0.04	.	0.023	.	1.07	200 g
VS R27/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g
VS R14/5	.	(0.113)	.	.	.	.	.	.	.	.	.	0.044	.	.	.	.	100 g
SARM 146	.	.	.	.	.	.	.	.	.	.	V_2O_5:0.32	.	.	.	.	.	100 g
NCS DC28130	.	.	.	0.025	.	.	.	0.014	.	0.092	.	0.215	.	0.071	.	.	50 g
NCS DC73012	.	.	(1.2)	0.016	.	2.5	.	(0.010)	0.018	0.134	.	0.064	.	.	.	.	50 g
BCS 308/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g
NCS DC28131	.	.	.	0.025	.	.	.	0.015	.	0.094	.	0.207	.	0.065	.	.	50 g
SARM 131	.	.	.	.	.	.	.	.	.	.	V_2O_5:0.414	.	.	.	.	.	100 g
NCS DC28133	.	.	.	0.022	.	.	.	0.023	.	0.121	.	0.162	.	0.065	.	.	50 g
NCS DC28132	.	.	.	0.022	.	.	.	0.033	.	0.134	.	0.143	.	0.058	.	.	50 g
NCS DC73011	.	.	(0.46)	0.014	.	(6.4)	.	0.026	0.073	0.175	.	0.044	.	.	.	.	50 g
NCS DC28129	.	.	.	0.027	.	.	.	0.035	.	0.162	.	0.089	.	0.102	.	.	50 g
NCS DC28128	.	.	.	0.016	.	.	.	0.043	.	0.169	.	0.077	.	0.049	.	.	50 g
CERAM AN100	.	.	.	CuO:0.02	.	.	.	0.01	0.04	.	.	.	ZnO:0.04	.	(5.03)		25 or 100 g
NCS DC73010	.	.	(0.6)	0.0124	.	(10.7)	.	0.046	(0.13)	0.188	.	0.043	.	.	.	.	50 g
FLX CRM111	.	.	Co3O4: 0.012		.	.	<0.01	0.010	<0.1	.	0.031	.	<0.02	.	0.057	(0.58)	80 g

CRM CLAY

analysis listed in mass %

Number	Al	B	Ba	Ca	Ce	Co	Cr	Fe	K	Li	Mg	Mn	Na	P	Si	Sr
SRM 97b	20.76	.	(0.018)	0.0249	.	(0.00038)	0.0227	0.831	0.513	0.0550	0.113	0.0047	0.0492	(0.02)	19.81	0.0084
SRM 98b	14.30	.	(0.07)	0.0759	.	(0.00163)	0.0119	1.18	2.81	0.0215	0.358	0.0116	0.1496	(0.03)	26.65	0.0189
SRM 679	11.01	.	0.0432	0.1628	(0.0105)	(0.0026)	0.01097	9.05	2.433	0.00717	0.7552	(0.1730)	0.1304	(0.075)	24.34	0.00734

continued	analysis listed in mass %				analysis listed in mg/kg							
Number	Ti	Zn	Zr	LOI	Cs	Eu	Hf	Rb	Sb	Sc	Th	Units
SRM 97b	1.43	(0.0087)	(0.05)	(13.3)	(3.4)	(0.84)	(13)	(33)	(2.2)	(22)	(36)	60 g powder
SRM 98b	0.809	(0.0110)	(0.022)	(7.5)	(16.5)	(1.3)	(7.2)	(180)	(1.6)	(22)	(21)	60 g powder
SRM 679	0.577	(0.0150)	.	.	(9.6)	(1.9)	(4.6)	(190)	.	(22.5)	(14)	75 g powder

CLAYS and FIRECLAYS

= class, where 1 = CRM and 2 = RM analysis listed in mass % * CERAM AN41 lists Mn3O4 as MnO

#	Number	SiO_2	Al_2O_3	CaO	Cl-	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SO_3	TiO_2	LOI	Units	Other
1	NH 138	68.90	26.01	0.23	.	1.47	0.98	0.22	.	0.10	.	.	0.92	.	75 g	
1	NCS DC62108d	68.59	14.12	1.21	.	5.29	2.33	1.58	.	1.24	.	0.03	0.76	4.22	20 g	
1	GBW 03103	66.64	13.28	3.23	0.011	4.64	2.50	1.84	0.088	1.81	0.106	0.027	.	5.10	60 g	CO_2: 1.66
1	VS K11	62.2	16.8	1.2	.	(6.3)	.	2.01	0.064	.	.	S:0.05	0.98	.	50 g	
1	NH 137	61.46	32.43	0.28	.	1.63	1.31	0.28	.	0.126	.	.	1.13	.	75 g	
1	GBW 03115	55.90	28.57	0.70	.	0.87	1.54	0.30	.	1.74	.	.	1.21	8.72	50 g	
1	GBW 03102a	53.67	31.32	1.80	0.0029	0.33	1.15	0.083	0.020	2.55	0.053	0.023	0.030	8.81	50 g	CO_2: (0.051)
1	IPT 42	51.9	32.2	0.05	.	1.09	0.47	0.19	.	0.02	0.07	.	0.96	12.9	50 g	
1	IPT 32	51.8	28.5	0.17	.	3.46	0.80	0.39	.	0.16	0.13	.	1.49	12.6	50 g	
1	BCS 348	51.13	31.59	0.173	.	1.04	2.23	0.305	.	0.344	0.071	.	1.08	11.75	100 g	
1	GBW 03101a	49.98	26.27	0.13	0.0041	10.55	0.79	0.46	0.052	0.060	0.14	0.49	0.70	10.62	50 g	CO_2: (0.041)
2	FLX 134	F: 0.0678	Fluorine in Ball Clay, single element						.	.	.	.	.	.	30 g	

CRM CLAY - SYNTHETIC MULLITE

80 g units

Number	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	Na_2O	P	SiO_2	TiO_2
NCS HC14809	72.39	0.19	0.93	0.24	0.42	0.16	0.043	21.81	3.64
NCS HC14808	57.47	0.15	0.46	1.69	0.14	0.46	0.022	37.41	1.45
NCS HC14807	43.62	0.23	1.14	1.62	0.21	0.46	0.062	51.43	0.65

CRM COPPER ORE WITH EXTENSIVE ANALYSIS - CONTINUED ON THE NEXT PAGE

analysis listed in mass % except * which is mg/kg # = provisional analysis OREAS samples list multiple methods, more information upon request

Number	Cu	Ag*	Au*	C	F	Fe	Fe_2O_3	Mo	Ni	Pb	Pd*	Pt*	S	Zn	LOI
VS 2891-84	40.4	707.7	.	.	.	(5.78)	.	.	.	2.25	.	.	(15.98)	2.89	.
CGL 203	31.80	(66)	.	.	.	(21.0)	.	0.1399	.	0.01366	.	.	(33.94)	0.1526	.
CAN CCU-1F	23.33	157.0	19.08	(0.06)	(0.0080)	29.50	.	(0.00116)	(0.00192)	0.2095	.	.	34.82	4.085	(19.15)
JCu-1 #	3.73	.	.	(3.06T)	.	.	17.5T	.	(0.0425)	(0.0004)	.	.	(7.00)	0.0679	(15.37)
GBW 07233	1.15	3.9	.	.	0.079	.	55.58	0.00014	0.00096	0.00091	.	.	0.72	0.059	.
CETEM CBPA-1	0.98	.	(0.17)	(0.16 org)	(0.0708)	.	16.5	(0.0010)	0.0276	(0.0033)	.	.	(0.16)	0.0126	(3.8)
SRM 330a	0.845	.	.	.	.	(1.06)	.	(0.00045)	0.002895	(0.0027)	.	.	.	0.00949	.
CGL 103	0.8080	2.05	.	.	.	2.75	.	0.0160	(0.000950)	(0.00727)	.	.	2.12	0.0096	(4.27)
OREAS 904	0.519	.	0.045	.	.	.	.	.	.	.	(<0.002)	(<0.010)	.	.	.
OREAS 904 4	0.612	0.551	.	.	.	6.68	.	0.000212	0.00401	0.00106	.	.	0.063	0.00263	.
OREAS 904 A	0.630	0.366	(0.02)	.	.	6.40	.	0.000202	0.00366	0.000849	.	.	0.034	0.00224	.
CAN HV-2a	0.3808	1.448	.	(0.4)	.	2.044	.	0.01254	0.000647	0.00069	.	.	0.344	0.00565	(3.01)
GBW 07234	0.19	0.7	.	.	0.080	.	12.25	0.00024	0.00056	0.00130	.	.	0.14	0.013	.
USZ 4-85	0.115	(1.1)	.	.	.	.	3.9T	0.007	(0.00165)	(0.00510)	.	.	2.03	(0.00680)	(4.26)
OREAS 901	0.083	.	0.363	.	.	.	.	.	.	.	(0.002)	.	.	.	.
OREAS 901 4	0.141	0.439	.	.	.	4.03	.	0.000336	0.00399	0.00174	.	.	0.036	0.00240	.
OREAS 901 A	0.144	0.276	0.34	.	.	3.70	.	0.000323	0.00347	0.00146	.	.	0.033	0.00202	.

continued analysis listed in mass %

Number	Al	Al_2O_3	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	Na	Na_2O	P	P_2O_5	SiO_2	Ti	TiO_2
VS 2891-84	.	.	.	.	.	.	.	.	.	.	.	.	.	.	(21.74)	.	.
CGL 203	.	.	.	.	.	.	.	.	.	.	.	.	.	.	(6)	.	.
CAN CCU-1F	0.1203	.	0.140	.	(0.0161)	.	0.383	.	0.00829	.	(0.02)	.	(0.0013)	.	2.015	(0.00528)	.
JCu-1 #	.	0.29	.	23.5	.	0.015	.	2.13	.	0.59	.	0.052	.	(<0.005)	(28.68)	.	0.013
GBW 07233	.	1.73	.	9.61	.	0.071	.	3.91	.	0.60	.	0.044	.	.	9.27	.	0.079
CETEM CBPA-1	.	10.1	.	2.97	.	1.85	.	3.29	0.058	.	.	1.42	.	1.00	(56.4)	(0.35)	.
SRM 330a	7.053	.	0.323	.	5.47	.	0.868	.	.	.	0.657	.	(0.0326)	.	Si: 33.4	(0.1223)	.
CGL 103	.	16.19	.	0.285	.	3.71	.	0.69	.	(0.0160)	.	1.48	.	0.139	67.07	.	0.463
OREAS 904	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 904 4	6.30	.	0.046	.	3.31	.	0.556	.	0.041	.	0.034	.	0.098	.	.	(0.19)	.
OREAS 904 A	1.25	.	0.0404	.	0.603	.	0.143	.	0.041	.	(0.01)	.	0.095	.	.	(0.007)	.
CAN HV-2a	7.96	.	1.891	.	2.31	.	0.329	.	0.0545	.	2.335	.	0.0427	.	Si:31.34	.	0.128
GBW 07234	.	15.18	.	4.95	.	2.71	.	1.30	.	0.12	.	3.21	.	.	53.36	.	0.50
USZ 4-85	.	.	.	.	.	(3.38)	.	.	.	.	.	(1.74)	.	(0.15)	.	.	.
OREAS 901	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 901 4	6.81	.	0.092	.	3.67	.	0.600	.	0.0290	.	0.042	.	0.062	.	.	(0.23)	.
OREAS 901 A	0.992	.	0.091	.	0.512	.	0.124	.	0.030	.	(0.01)	.	0.059	.	.	(0.01)	.

continued analysis listed in mg/kg

Number	As	Ba	Be	Bi	Cd	Ce	Co	Cr	Cs	Dy	Er	Eu	Ga	Gd	Ge	Hf
VS 2891-84	.	.	.	.	290	.	.	.	.	.	.	.	.	.	.	.
CGL 203	.	.	.	.	(9.31)	.	(86.87)	(42.97)	.	.	.	.	.	.	.	.
CAN CCU-1F	821	(7)	.	(0.649)	110.2	(0.80)	304.2	(7)	.	.	.	.	(3.39)	.	(0.8)	
JCu-1 #	(173)	(3.5)	.	.	(3.6)	.	(324)	(10)	.	.	.	.	.	.	.	.
GBW 07233	4.2	.	.	1.5	0.42	13.2	.	(7)	.	1.1	0.78	0.28	22.6	1.1	0.89	.
CETEM CBPA-1	(9)	(478)	.	.	(3)	(427)	78	26	.	.	.	.	(22.2)	.	.	.
SRM 330a	.	1560	.	.	3.391	22.32	4.542	77.0	.	.	.	.	17.4	.	.	.
CGL 103	167	958	(1.04)	.	(0.57)	(40.35)	12	(18)	(2.27)	.	.	.	(18.92)	.	.	.
OREAS 904	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 904 4	98	194	7.86	4.05	(0.07)	86	83	54	3.79	(5.6)	(3.4)	(1.4)	16.7	(6.6)	0.18	5.0
OREAS 904 A	91	68	6.54	3.74	0.058	70	82	17.5	0.62	(3.0)	(1.6)	(1.0)	3.40	(4.9)	(0.1)	(0.6)
CAN HV-2a	12.1	869	(1.02)	(1.58)	(0.2)	19.1	3.40	100	2.70	1.126	0.646	(0.502)	19.56	1.40	.	(2)
GBW 07234	1.5	(800)	.	0.43	0.14	72.6	.	(10)	(10)	2.4	1.3	1.3	22.6	3.6	0.93	.
USZ 4-85	(47)	.	(4.5)	(21.7)	.	.	(12)	(22)	.	.	.	.	.	.	.	.
OREAS 901	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 901 4	71	229	6.17	4.75	(0.05)	95	73	57	5.12	(6.4)	(3.7)	(1.7)	18.7	(8.2)	(0.2)	5.27
OREAS 901 A	66	86	4.49	4.35	(0.05)	78	73	23.0	0.97	(3.5)	(1.8)	(1.1)	3.15	(5.6)	0.11	(0.8)

CRM COPPER ORE WITH EXTENSIVE ANALYSIS - CONTINUED FROM THE PREVIOUS PAGE

analysis listed in mg/kg # = provisional analysis OREAS samples list multiple methods, more information upon request

Number	Hg	Ho	In	La	Li	Lu	Nb	Nd	Pr	Rb	Re	Sb	Sc	Se	Sm	Sn
VS 2891-84	.	.	.	.	.	.	.	.	.	.	28.2	.	.	.	.	.
CGL 203	.	.	.	.	.	.	.	.	.	.	.	(400)	.	(77)	.	.
CAN CCU-1F	12.19	.	(5.71)	.	(0.4)	.	.	.	.	(0.3)	(0.005)	85.5	(0.5)	(211)	.	(9)
JCu-1 #	.	.	.	.	(2.9)	.	.	.	.	(1.9)	.	(3.8)	.	.	.	.
GBW 07233	.	0.26	1.4	7.5	(9)	0.16	.	4.7	1.4	.	.	0.36	1.8	5.1	1	11.1
CETEM CBPA-1	.	.	.	(267)	.	.	(10)	(143)	.	(101)	.	.	(16)	.	(20)	(7)
SRM 330a	.	.	.	.	22.19	.	(5.7)	.	.	.	.	.	5.693	.	.	.
CGL 103	.	.	.	(19.38)	.	.	.	.	.	(83.76)	.	23	.	.	.	.
OREAS 904	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 904 4	.	(1.1)	0.22	43.2	16.7	0.47	(6.3)	(36)	(9.7)	130	(<0.002)	1.48	11.2	3.30	(7.1)	2.83
OREAS 904 A	(0.04)	(0.6)	0.17	33.9	(3.5)	0.21	(0.09)	(32)	(7.7)	22.4	(<0.001)	0.78	3.83	2.81	(5.4)	0.58
CAN HV-2a	.	(0.2)	.	9.1	(11)	(0.109)	(2)	8.77	(2.32)	48.3	(0.1)	0.689	(3)	(0.7)	1.69	(1.2)
GBW 07234	.	0.48	0.25	40.3	(15)	0.2	.	29.4	8.1	(94)	.	0.23	5.4	0.89	5.1	3.8
USZ 4-85	.	.	.	.	.	.	.	.	.	(80)	.	.	.	(5.4)	.	.
OREAS 901	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 901 4	.	(1.3)	0.26	47.0	17.9	0.53	(8.0)	(46)	(13)	161	(0.002)	2.61	14.0	(3.2)	(9.0)	3.33
OREAS 901 A	(0.02)	(0.7)	0.21	38.1	(3.1)	0.22	(0.1)	(35)	(8.9)	23.9	(0.002)	1.47	5.55	2.68	(6.4)	0.58

Number	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb	Zr	Units	Other
VS 2891-84	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	
CGL 203	.	.	.	.	.	.	.	.	.	.	.	.	.	100 or 250 g	
CAN CCU-1F	(2)	49.9	.	.	.	1.51	.	(0.4)	(3)	(1.12)	(0.8)	.	.	200 g	H_2O%:(0.96)
JCu-1 #	(75)	.	.	.	.	.	.	.	(9)	.	.	.	.	100 g	H_2O%:(0.54-, 1.00+)
GBW 07233	.	.	0.21	0.62	0.9	0.06	0.11	.	.	4.1	7.3	0.28	.	50 g	
CETEM CBPA-1	(67)	(5)	.	.	(25)	.	.	(41)	(168)	.	(69)	.	(149)	135 g	
SRM 330a	218.1	.	.	.	(7.6)	.	.	.	(43)	.	20.01	.	80.5	90 g	
CGL 103	181	.	.	.	.	.	.	(0.96)	(59.43)	(13.55)	.	.	(102.76)	100 g	
OREAS 502b 4	350	1.17	0.74	0.15	15.8	0.80	0.33	4.28	126	3.43	23.3	2.30	71	10 or 60 g	4-Acid except FA Au Pd Pt
OREAS 502b A	63	(0.73)	0.52	0.16	15.0	0.60	(0.22)	3.93	114	2.29	15.2	1.39	10.9	10 or 60 g	Aqua Regia
OREAS 904	.	.	.	.	.	.	.	.	.	.	.	.	.	10 g last of stock	
OREAS 904 4	27.2	0.54	1.00	(0.04)	14.3	0.52	(0.5)	8.43	76	2.12	31.5	3.14	171	" 4 acid digestion	
OREAS 904 A	16.5	(<0.01)	0.70	(0.03)	7.56	0.15	(0.2)	5.20	21.7	(0.6)	17.2	1.41	(17)	" aqua regia	B: (12ppm)
CAN HV-2a	472	(0.2)	(0.19)	.	1.28	(0.1)	(0.10)	1.08	(52.2)	(7.89)	(5.96)	(0.680)	(65.8)	200 g	H_2O%:(0.3)
GBW 07234	.	.	0.48	0.13	8.8	0.36	0.18	.	.	3.9	11.8	1.2	.	50 g	
USZ 4-85	.	.	.	(6.8)	.	.	.	.	.	(16)	.	.	(149)	100 g	
OREAS 901	.	.	.	.	.	.	.	.	.	.	.	.	.	10 g or 60 g, various methods	
OREAS 901 4	31.0	0.76	1.18	0.090	16.1	0.78	(0.5)	10.3	81	(3.5)	37.4	3.58	176	" 4 acid digestion	
OREAS 901 A	21.0	(0.02)	0.77	0.076	9.13	0.34	(0.3)	5.84	(21)	(1.1)	18.8	1.49	28.1	" aqua regia	B: (13ppm)

CRM COPPER ORE

analysis listed in mass % F = Sodium Peroxide Fusion ICP A = Four Fcid Digestion ICP-OES/MS values 10 g

Number	Cu	Ag	Al_2O_3	As	CaO	Cd	Co	Fe	MgO	Pb	S	Sb	SiO_2	Zn
OREAS 113 4	13.5	0.00226	.	0.0234	.	0.00155	0.0766	28.2	.	0.0230	.	0.0008	.	0.4178
OREAS 113 F	13.3	(0.0025)	.	0.0238	.	(0.0016)	0.0754	28.0	.	0.0248	.	0.00076	.	0.4158
OREAS 166 4	8.82	0.00108	1.38	.	0.98	.	0.1970	11.38	1.67	0.0140	11.6	.	.	0.0037
OREAS 166 F	8.75	0.0012	1.34	.	0.98	.	0.2077	11.45	1.67	0.0128	11.29	.	61.4	0.0037
OREAS 112 F	5.13	0.0017	.	0.0240	.	0.0015	0.0547	33.3	.	0.0349	.	0.0017	.	0.4302
OREAS 112 4	5.10	0.00132	.	0.0222	.	0.00146	0.0551	34.1	.	0.0360	.	0.0016	.	0.4351
OREAS 165 F	3.21	0.00031	2.61	.	0.11	.	0.2485	8.86	3.48	0.0434	8.28	.	72.0	0.0044
OREAS 165 4	3.20	0.000302	2.59	.	0.081	.	0.2445	8.86	3.53	0.0443	8.5	.	.	0.0037
OREAS 111b 4	2.47	0.00101	.	0.0220	.	0.00143	0.0490	36.1	.	0.0393	.	0.0021	.	0.4334
OREAS 111b F	2.44	<0.0020	.	0.0212	.	0.00148	0.0488	35.5	.	0.0397	.	0.0019	.	0.4370
OREAS 111 4	2.37	0.00101	.	0.0215	.	0.00120	0.0452	35.2	.	0.0377	.	0.0018	.	0.4196
OREAS 111 F	2.30	<0.0020	.	0.0217	.	0.0014	0.0457	34.1	.	0.0375	.	0.0019	.	0.4099
OREAS 164 4	2.25	0.000294	2.07	.	0.393	.	0.0168	6.80	3.07	0.0214	6.2	.	.	0.0045
OREAS 164 F	2.22	<0.0005	2.05	.	0.401	.	0.0167	6.88	3.07	0.0199	5.98	.	77.9	0.0047
OREAS 163 4	1.76	0.00043	3.24	.	0.860	.	0.0230	11.07	5.42	0.0492	10.4	.	.	0.0108
OREAS 163 F	1.71	0.0005	3.16	.	0.92	.	0.0230	11.1	5.34	0.0461	9.98	.	.	0.0102
OREAS 162 4	0.772	0.00035	1.70	.	13.2	.	0.0631	8.57	9.17	0.0340	4.38	.	.	0.0026
OREAS 162 F	0.761	0.000358	1.64	.	13.1	.	0.0660	8.63	9.04	0.0320	4.40	.	.	0.002755

Number	Cu	Ag	Al_2O_3	As	CaO	Cd	Co	Fe	MgO	Pb	S	Sb	SiO_2	Zn

CRM COPPER ORE - EXTENSIVE ANALYSIS NOT SHOWN

analysis listed in mass % except * which is mg/kg — 10g, 60g, or 1 kg

Number	Cu	Ag*	Au*	Bi	Co	Ni	Pb	Rb	Se	Sn	Zn	Zr	
OREAS 98 4	14.8	45.1	.	0.00972	0.0121	(0.00353)	0.0345	(0.00817)	0.0158	0.0206	0.1355	(0.00667)	
OREAS 98 A	14.7	42.8	.	0.00928	0.0111	.	0.0343	.	0.0143	0.0171	0.1302	.	
OREAS 935 I	12.43	43.73	.	0.0679	0.0085	(0.0156)	0.0233	(0.0089)	0.0105	0.0119	0.0721	(0.0074)	
OREAS 935 4	12.55	43.87	(<0.1)	0.0709	0.0077	0.00297	0.0225	(0.0080)	0.0088	0.0108	0.0692	0.00474	
OREAS 935 A	12.48	43.67	(0.04)	0.0680	0.0077	0.00262	0.0222	(0.00136)	0.0086	0.0096	0.0666	(0.00133)	
OREAS 935 F	12.54	.	.	.	<0.0100	(0.00158)	(0.0255)	.	.	(0.0138)	0.0688	(0.0050)	
OREAS 934 I	9.50	34.67	.	0.0517	0.0075	(0.00320)	0.0262	(0.0106)	0.0096	0.0095	0.0744	(0.0093)	
OREAS 934 4	9.59	36.46	(<0.1)	0.0527	0.0071	0.00282	0.0240	(0.0097)	0.0085	0.0083	0.0724	0.0058	
OREAS 934 A	9.58	34.40	(0.022)	0.0515	0.0067	0.00257	0.0242	(0.00145)	0.0080	0.0076	0.0692	(0.00162)	
OREAS 934 F	9.51	.	.	.	<0.0100	(0.000917)	0.0242	.	.	(0.0116)	0.0718	(0.0073)	
OREAS 933 I	8.34	29.32	.	0.0466	0.0063	(0.0108)	0.0197	(0.0103)	0.0079	0.0086	0.0617	(0.0101)	
OREAS 933 4	8.37	31.05	(<0.1)	0.0451	0.0060	0.00281	0.0189	(0.0095)	0.0068	0.0073	0.0602	0.0063	
OREAS 933 A	8.27	29.62	(0.027)	0.0449	0.0061	0.00281	0.0187	(0.00126)	0.0066	0.0066	0.0596	(0.00164)	
OREAS 933 F	8.38	.	.	.	<0.0100	(0.000800)	0.0210	.	.	(0.0106)	0.0606	(0.0090)	
OREAS 97 4	6.31	19.6	.	0.00401	0.00629	(0.00370)	0.0147	(0.0126)	0.00714	0.00957	0.0646	(0.00965)	
OREAS 97 A	6.28	19.5	.	0.00403	0.00625	.	0.0142	.	0.00673	0.00838	0.0635	.	
OREAS 932 I	6.17	23.00	.	0.0337	0.0062	(0.00303)	0.0195	(0.0122)	0.0073	0.0067	0.0590	(0.0114)	
OREAS 932 4	6.13	22.41	(<0.1)	0.0324	0.0060	0.00274	0.0184	(0.0112)	0.0067	0.0058	0.0591	0.0073	
OREAS 932 A	6.11	21.96	(0.012)	0.0322	0.0061	0.00282	0.0182	(0.00162)	0.0063	0.0051	0.0579	(0.00191)	
OREAS 932 F	6.19	.	.	.	<0.0100	(0.00133)	0.0200	.	.	(0.0092)	0.0599	(0.0093)	
OREAS 96 4	3.93	11.5	.	0.00263	0.00499	(0.00393)	0.0101	(0.0141)	0.00407	0.00656	0.0457	(0.0109)	
OREAS 96 A	3.91	11.5	.	0.00279	0.00492	.	0.0100	.	0.00410	0.00528	0.0448	.	
OREAS 931 I	3.83	13.62	.	0.0205	0.00466	(0.00362)	0.0155	(0.0134)	0.0050	<0.0060	0.0490	(0.0132)	
OREAS 931 4	3.82	14.04	(<0.1)	0.0204	0.00469	0.00288	0.0147	(0.0128)	0.00435	0.00421	0.0480	(0.0085)	
OREAS 931 A	3.81	14.18	(0.006)	0.0206	0.00453	0.00287	0.0146	(0.00153)	0.00422	0.00330	0.0472	(0.00199)	
OREAS 931 F	3.82	.	.	.	<0.0050	(<0.0010)	(0.0159)	.	.	(0.0064)	0.0495	(0.0097)	
OREAS 930 I	2.51	8.63	.	0.0138	0.00391	(<0.0050)	<0.0150	(0.0150)	0.00336	0.00351	0.0499	(0.0147)	
OREAS 930 4	2.52	9.00	(<0.1)	0.0136	0.00374	0.00311	0.0141	(0.0136)	0.00301	0.00311	0.0492	0.0089	
OREAS 930 A	2.51	9.13	(0.004)	0.0139	0.00364	0.00306	0.0142	(0.00181)	0.00286	0.00234	0.0488	(0.00220)	
OREAS 930 F	2.51	.	.	.	<0.0100	(0.00217)	<0.0160	.	.	(0.0059)	0.0504	(0.0112)	
OREAS 929 I	2.00	<8	.	0.0114	0.00362	(<0.0020)	0.0116	(0.0141)	0.00243	0.00311	0.0492	(0.0141)	
OREAS 929 4	2.00	7.18	(<0.1)	0.0111	0.00336	0.00307	0.0130	(0.0129)	0.00241	0.00291	0.0477	0.0088	
OREAS 929 A	2.02	7.03	(0.004)	0.0114	0.00336	0.00297	0.0131	(0.00175)	0.00240	0.00201	0.0468	(0.00211)	
OREAS 929 F	2.02	.	.	.	(<0.0100)	(0.00275)	0.0143	.	.	(0.00458)	0.0486	(0.0127)	
Number	Cu	Ag*	Au*	Bi	Co	Ni	Pb	Rb	Se	Sn	Zn	Zr	
OREAS 928 I	1.52	<8	.	0.0083	0.00335	(0.00376)	0.0112	(0.0127)	<0.0020	0.00278	0.0432	(0.0141)	
OREAS 928 4	1.53	5.39	(<0.100)	0.0079	0.00313	0.00296	0.0122	(0.0116)	0.00188	0.00262	0.0436	(0.0094)	
OREAS 928 A	1.52	5.11	(0.006)	0.0080	0.00306	0.00281	0.0122	(0.00148)	0.00179	0.00157	0.0429	(0.00199)	
OREAS 928 F	1.52	.	.	.	<0.0050	(0.00208)	(0.0133)	.	.	(0.00300)	0.0435	(0.0108)	
OREAS 504b 4	1.11	3.07	1.61	0.000492	0.00209	0.00345	0.00262	0.0106	0.00124	0.00114	0.0108	0.0060	last
OREAS 504b A	1.10	2.98	1.56	0.000513	0.00187	0.00300	0.00201	0.0051	0.00116	0.00104	0.0096	0.00142	last
OREAS 927 I	1.09	.	.	0.0062	0.00310	0.00302	0.0214	0.0122	.	0.00238	0.0750	.	
OREAS 927 4	1.08	4.08	.	0.0057	0.00287	0.00297	0.0209	0.0119	0.00157	0.00207	0.0716	0.0097	
OREAS 927 A	1.06	3.90	<0.010	0.0059	0.00286	0.00280	0.0203	0.00147	0.00153	0.00122	0.0717	0.00201	
OREAS 502c	0.783	0.779	0.488	0.000067	0.00144	0.00381	0.00235	0.0187	0.000340	0.000340	0.0109	0.0078	
OREAS 903 4 **	0.652	0.432	(<0.050)	0.00089	0.0131	0.0054	0.00113	0.0137	0.000606	0.000263	0.00243	0.0152	
OREAS 903 A	0.671	0.349	(<0.005)	0.00088	0.0131	0.00487	0.000895	0.00126	0.000534	(0.00004)	0.00213	0.00182	
OREAS 925 I	0.621	.	.	0.00336	0.00254	0.00355	0.0115	0.0166	.	0.00179	0.0459	.	
OREAS 925 4	0.615	2.36	.	0.00313	0.00246	0.00348	0.0110	0.0163	0.000907	0.00149	0.0446	0.0106	
OREAS 925 A	0.629	2.41	<0.005	0.00324	0.00238	0.00317	0.0111	0.00189	0.000891	0.000777	0.0437	0.00218	
OREAS 503c	0.538	0.830	0.698	0.000060	0.00146	0.00386	0.00206	0.0178	0.000331	0.000338	0.0087	0.0075	
OREAS 503d	0.524	1.34	0.666	0.000141	0.00167	0.00335	0.00206	0.0181	0.000329	0.000347	0.0075	0.0089	
OREAS 924 I	0.520	.	.	0.00293	0.00244	0.00385	0.0096	0.0173	.	0.00167	0.0389	.	
OREAS 924 4	0.512	1.99	.	0.00273	0.00234	0.00360	0.0092	0.0172	0.000786	0.00136	0.0380	0.0109	
OREAS 924 A	0.516	1.92	<0.005	0.00257	0.00227	0.00326	0.0092	0.00203	0.000732	0.000672	0.0370	0.00222	
OREAS 923 I	0.4328	.	.	0.00212	0.00239	0.00407	0.0086	0.0169	.	0.00161	0.0358	.	
OREAS 923 4	0.4230	1.60	.	0.00214	0.00231	0.00358	0.0083	0.0166	0.000654	0.00133	0.0345	0.0116	
OREAS 923 A	0.4248	1.62	<0.005	0.00218	0.00222	0.00327	0.0081	0.00196	0.000599	0.000599	0.0335	0.00225	
OREAS 501c	0.276	0.461	0.221	0.000069	0.00151	0.0060	0.00215	0.0196	0.000207	0.000338	0.0081	0.0081	
OREAS 922 I	0.2215	.	.	0.00108	0.00209	0.00434	0.0064	0.0167	.	0.00100	0.0277	.	
OREAS 922 4	0.2122	0.888	.	0.00101	0.00204	0.00379	0.0059	0.0164	0.000376	0.000995	0.0267	0.0127	
OREAS 922 A	0.2176	0.851	<0.005	0.00103	0.00194	0.00343	0.0060	0.00227	0.000344	0.000383	0.0256	0.00223	
OREAS 921 I	0.0293	.	.	<0.0002	0.00173	0.00419	0.00271	0.0178	.	<0.0010	0.0139	.	
OREAS 921 4	0.0274	0.152	.	0.000120	0.00165	0.00411	0.00280	0.0176	<0.0002	0.000582	0.0132	0.0147	
OREAS 921 A	0.0278	0.164	<0.005	0.000125	0.00155	0.00380	0.00260	0.00242	0.000104	0.000145	0.0124	0.00214	
OREAS 501b 4	0.260	0.778	0.248	0.000154	0.00158	0.00415	0.00230	0.0184	(0.000363)	0.000558	0.0089	0.0077	
OREAS 501b A	0.258	0.721	0.243	0.000160	0.00149	0.00375	0.000942	0.0126	0.000278	0.000465	0.0080	0.00109	
OREAS 920 I	0.0113	.	.	<0.00008	0.00161	0.00440	0.00229	0.0179	.	<0.0006	0.0122	.	
OREAS 920 4	0.0112	<0.2	.	0.000069	0.00156	0.00418	0.00235	0.0176	<0.0002	0.000504	0.0116	0.0151	
OREAS 920 A	0.0110	0.099	<0.010	0.000068	0.00150	0.00384	0.00215	0.00248	0.000087	0.000121	0.0106	0.00213	
Number	Cu	Ag*	Au*	Bi	Co	Ni	Pb	Rb	Se	Sn	Zn	Zr	

** OREAS 903 also certifies Cu at 0.434% using acid leach

These samples also detail up to 74 additional elements, certificates available upon request.
Each sample is certified for a variety of methods: 4 = 4 ACID DIGESTION, A = AQUA REGIA, F = FUSION, I = ICP

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= class, where 1=CRM and 2=RM; analysis in mass % except * = mg/kg; GBM: 10 or 250g NCS: 50g VS: 100g

#	Number	Cu	Ag*	As	Ni	Pb	Tot.S	Zn	Au*	Bi*	Co*	Cd*	Fe	Hg*	Mo*	Sb*	SiO_2	
1	GBM914-12	27.0618	61.5	.	0.0020	0.1256	29.74	0.824	.	.	.	.	.	.	.	.	.	
1	IMN Ko-P2	26.10	458.7	0.138	1.16	.	.	.	.	.	.	.	.	.	.	.	.	250 g units
1	GBM922-16	24.6093	326.3	.	0.0805	0.7508	26.31	1.2224	.	.	.	.	.	.	.	.	.	
1	GBM313-16	24.2702	109.3	.	0.0153	0.0035	3.64	0.0043	.	.	.	.	.	.	.	.	.	
1	GBM316-12	23.8210	86.0	.	0.0009	0.0236	25.43	0.0480	.	.	.	.	.	.	.	.	.	
1	GBM310-15	23.7854	78.8	.	0.0293	0.3327	27.6	1.1931	.	.	.	.	.	.	.	.	.	
1	IMN W5	22.95	392	0.117	.	1.38	.	C:10.71	Org.C:7.91		.	.	.	.	.	.	.	100 g units
1	GBM913-14	22.7577	200.3	.	0.0053	0.0029	6.22	0.0107	.	.	.	.	.	.	.	.	.	
1	GBM314-15	21.2876	176.2	.	0.0037	0.0145	6.54	0.02	.	.	.	.	.	.	.	.	.	
1	OREAS 991	20.66	48.14	(0.0170)	(0.00320)	(0.0123)	(30.77)	.	47.04	(<50)	(122)	.	(26.92)	.	(490)	.	.	50 g units
1	GBM319-12	19.5549	112.9	.	0.2069	0.2128	13.42	0.8434	.	.	.	.	.	.	.	.	.	
1	GBM319-11	18.0603	108.0	.	0.0914	1.1393	22.96	1.5795	.	.	.	.	.	.	.	.	.	
1	VS R34/1	17.21	81	0.35	.	0.17	38.6	2.45	4.7	60	.	32.9	.	.	97	680	1.92	
1	GBM905-14	17.3667	.	.	0.0531	0.0334	.	0.0074	.	.	.	.	.	.	.	.	.	
1	GBM908-11	17.7033	11.4	.	.	0.0547	29.78	2.3604	.	.	.	.	.	.	.	.	.	last
1	GBM314-16	16.0964	89.4	.	0.0661	0.0884	22.79	0.2898	.	.	.	.	.	.	.	.	.	
1	GBM323-16	15.7320	220.6	.	0.3131	0.4159	23.85	3.4195	.	.	.	.	.	.	.	.	.	
1	GBM913-13	12.1059	74.1	.	0.0084	0.0125	2.43	0.0386	.	.	.	.	.	.	.	.	.	
1	GBM317-13	10.3409	19.0	.	3.9436	0.7361	15.52	2.4779	.	.	.	.	.	.	.	.	.	
1	NCS DC29110	8.53	120	0.020	.	0.027	(15.42)	0.19	.	.	.	13.5	.	(0.039)	.	35.3	.	
1	GBM319-16	6.9993	8.8	.	0.0055	0.0012	0.04	0.0023	.	.	.	.	.	.	.	.	.	
1	GBM319-8	6.9613	8.8	0.0115	0.0057	0.0005	.	0.0023	.	.	53	.	.	.	.	.	.	
1	GBM321-16	6.9389	22.0	.	0.0065	0.0677	7.47	0.1007	.	.	.	.	.	.	.	.	.	
1	GBM319-7	4.3368	51.8	0.1241	0.0008	0.0061	.	0.0669	.	.	45	.	.	.	.	.	.	
1	GBM319-15	4.3324	51.3	.	0.0009	0.0069	0.07	0.0681	.	.	.	.	.	.	.	.	.	
1	NCS DC29109	3.84	59.9	0.046	.	0.024	(8.58)	0.083	.	.	.	5.68	.	(0.043)	.	71	.	
1	GBM916-14	3.6746	26.8	.	0.0023	0.0515	23.66	0.7103	.	.	.	.	.	.	.	.	.	
1	GBM905-11	3.1758	.	.	0.0038	0.0042	.	0.0084	.	.	.	.	.	.	.	.	.	
1	GBM319-14	2.9546	36.4	.	0.0299	0.7331	4.92	2.2491	.	.	.	.	.	.	.	.	.	
1	GBM922-14	2.8331	8.9	.	0.0041	0.0165	3.51	0.0949	.	.	.	.	.	.	.	.	.	
1	GBM916-12	2.6105	17.0	.	0.0023	0.0566	19.10	0.5018	.	.	.	.	.	.	.	.	.	
1	GBM911-16	2.4774	7.9	.	0.0229	0.0325	3.6	0.1210	.	.	.	.	.	.	.	.	.	
1	GBM317-12	2.4309	16.3	.	0.0021	0.0544	18.72	0.5049	.	.	.	.	.	.	.	.	.	
1	GBM318-4	2.4208	20.5	0.0545	0.0077	0.0023	.	0.0407	.	.	40	.	.	.	.	.	.	
1	GBM322-12	2.4118	19.8	.	0.0077	0.0024	0.03	0.0413	.	.	.	.	.	.	.	.	.	
1	GBM316-11	2.2288	21.7	.	0.0021	0.1065	18.11	1.0133	.	.	.	.	.	.	.	.	.	
1	GBM905-12	2.1853	.	.	0.0062	0.0033	.	0.0100	.	.	.	.	.	.	.	.	.	
1	GBM323-11	2.2045	42.2	.	0.0055	0.0799	2.65	0.0909	.	.	.	.	.	.	.	.	.	
1	GBM920-10	2.1707	41.9	0.0083	0.0057	0.0779	.	0.0890	.	.	94	.	.	.	.	.	.	
1	GBM921-11	2.1510	15.6	.	0.0019	0.1469	1.22	0.2519	.	.	.	.	.	.	.	.	.	
1	GBM916-13	2.0136	12.5	.	0.0023	0.0390	17.60	0.3795	.	.	.	.	.	.	.	.	.	
1	GBM319-13	1.5964	7.4	.	0.0075	0.0066	2.18	0.0454	.	.	.	.	.	.	.	.	.	
1	GBM319-1	1.5759	7.2	0.0052	0.0080	0.0061	.	0.0450	.	.	73	.	.	.	.	.	.	
1	GBM920-12	1.5542	5.3	.	0.0269	0.0053	21.84	0.0107	.	.	.	.	.	.	.	.	.	
1	GBM920-2	1.5495	5.4	0.1607	0.0270	0.0038	.	0.0104	.	.	567	.	.	.	.	.	.	
1	GBM920-13	1.5481	5.4	.	0.0284	0.0046	23.50	0.0110	.	.	.	.	.	.	.	.	.	
1	GBM920-3	1.5471	5.3	0.1688	0.0283	0.0038	.	0.0103	.	.	594	.	.	.	.	.	.	
1	GBM915-4	1.1835	25.7	0.0663	0.0118	0.4921	.	1.0035	.	.	69	.	.	.	.	.	.	
1	GBM311-14	1.7501	04.5	.	0.0045	0.0508	2.0	0.0872	.	.	.	.	.	.	.	.	.	
1	GBM311-10	1.7334	3.8	0.0040	0.0031	0.0505	.	0.0841	.	.	65	.	.	.	.	.	.	
1	VS R35	1.65	17.4	0.067	.	0.036	26.7	0.74	1.23	.	.	.	.	.	.	.	35.2	
2	IMN MR2	1.61	29	0.013	.	0.085	.	0.025	.	.	.	.	0.88	.	.	.	.	200 g units
1	GBM322-13	1.3016	4.1	.	0.0210	0.0098	6.32	0.0613	.	.	.	.	.	.	.	.	.	
2	IMN MR1	1.23	58	0.028	.	0.15	.	0.040	.	.	.	.	1.41	.	.	last	.	200 g units
1	GBM915-15	1.0954	11.9	.	0.7954	0.0066	1.29	0.0050	.	.	.	.	.	.	.	.	.	
1	GBM910-6	1.0084	3.6	0.0117	0.0044	0.0173	.	0.0907	.	.	131	.	.	.	.	.	.	
1	GBM922-13	1.0050	3.5	.	0.0052	0.0176	1.52	0.0931	.	.	.	.	.	.	.	.	.	
1	NCS DC29108	0.90	14.9	0.00766	.	0.0080	(1.65)	0.020	.	.	.	.	.	(0.028)	.	11.7	.	
1	NCS DC29107	0.29	6.1	0.00414	.	0.00345	(0.68)	0.010	.	.	.	.	.	(0.15)	.	23.4	.	
1	IMN W2	0.285	6.2	0.00123	.	0.0412	.	C:7.59	Org.C:(0.361)		.	.	.	.	.	.	.	100 g units
1	IMN W7	.	.	.	.	0.00424	.	.	.	.	.	.	.	.	.	.	.	100 g units
#	Number	Cu	Ag*	As	Ni	Pb	Tot.S	Zn	Au*	Bi*	Co*	Cd*	Fe	Hg*	Mo*	Sb*	SiO_2	

CRM COPPER ORE

analysis listed in mass % except * which is mg/kg

Number	Cu	As	Bi	Cd	F	Fe	MgO	Mn	Ni	Pb	S	Sb	Zn	Ag*	Au*	Units
NCS DC28058	20.56	0.012	.	<0.001	0.056	24.70	7.63	0.013	0.093	0.015	22.87	.	0.194	17.1	4.68	20 g
NCS DC28055	12.79	4.68	0.023	0.0067	0.028	3.22	0.18	0.110	0.017	0.037	1.54	0.25	0.64	85.9	0.04	50 g
NCS DC28057	10.71	0.034	.	<0.001	0.036	29.34	4.01	0.084	0.072	0.019	25.05	.	0.052	12.0	6.16	20 g
NCS DC28056	8.46	2.14	0.19	0.0064	0.53	10.44	7.04	0.169	0.011	0.087	0.86	0.22	0.503	109.9	0.05	50 g
NCS DC28054	6.78	0.209	0.283	0.0021	1.15	15.39	12.51	0.124	<0.005	0.106	0.082	.	0.456	126.1	0.05	50 g

CRM COPPER ORE

analysis listed in mass % except * which is mg/kg 20 g units

Number	Cu	Ag*	Au*	Al_2O_3	As	Bi	CaO	Cd*	Co	F	Fe	MgO	Mn	Ni	Pb	S	SiO_2	Zn
NCS DC28059a	18.04	157.0	2.48	2.89	0.104	0.897	14.71	64	0.026	0.162	19.80	1.12	0.085	0.045	0.031	9.53	6.22	0.59

CRM CRYOLITE

analysis lsited in mass %

Number	Al	CaO	F	Fe_2O_3	Na	P_2O_5	SO_4^{2-}	SiO_2	LOI	Units
NCS DC91001	17.34	(0.606)	55.45	0.053	21.75	0.0034	0.233	0.087	4.53	100 g
NCS DC91002	15.18	(0.597)	54.66	0.032	26.32	0.025	0.199	0.211	2.97	100 g
NCS DC91003	13.65	(0.719)	53.89	0.036	29.29	0.013	0.205	0.363	2.25	100 g
NCS DC91004	13.16	(0.508)	53.2	0.033	30.26	0.037	0.293	0.389	2.12	100 g
NCS DC91005	12.69	(0.0062)	52.14	0.0098	32.01	0.065	0.45	0.485	1.4	100 g
NCS DC91006	11.75	0.112	51.21	0.04	33.24	0.051	0.683	0.238	1.6	100 g

CRM DIABASE WITH EXTENSIVE ANALYSIS

analysis listed in mass % US: 25 g units NCS: 70 g units

Number	Al_2O_3	CO_2	CaO	F	FeO	Fe_2O_3	Fe_2O_3T	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	S	SO_3	SiO_2	TiO_2	LOI
~~US W 2b~~	~~15.45~~	~~.~~	~~10.86~~	~~(0.0205)~~	~~8.34~~	~~1.53~~	~~10.83~~	~~.~~	~~0.626~~	~~6.37~~	~~0.167~~	~~2.20~~	~~0.14~~	~~(0.0079)~~	~~.~~	~~52.68~~	~~1.06~~	~~.~~
~~NCS DC71311~~	~~13.21~~	~~(0.11)~~	~~7.83~~	~~(0.07)~~	~~7.24~~	~~.~~	~~(13.40)~~	~~(2.44)~~	~~1.49~~	~~5.08~~	~~.~~	~~3.17~~	~~0.55~~	~~.~~	~~0.44~~	~~49.88~~	~~2.94~~	~~2.30~~

continued analysis listed in mg/kg except % which is mass %

Number	Ag	As	B	Ba	Be	Bi	Cd	Ce	Cl%	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd
~~US W 2b~~	~~.~~	~~(1.2)~~	~~(12)~~	~~170~~	~~(1.3)~~	~~.~~	~~.~~	~~23~~	~~(0.0190)~~	~~43~~	~~92~~	~~(0.99)~~	~~110~~	~~3.6~~	~~(2.5)~~	~~(1.0)~~	~~17~~	~~.~~
~~NCS DC71311~~	~~0.33~~	~~5.1~~	~~17.0~~	~~614~~	~~1.5~~	~~0.39~~	~~0.39~~	~~78.1~~	~~(0.04)~~	~~37.5~~	~~111~~	~~1.7~~	~~82.6~~	~~5.5~~	~~(2.6)~~	~~3.5~~	~~21.2~~	~~7.2~~

Number	Ge	Hf	Hg	Ho	La	Li	Lu	Mn%	Mo	Nb	Nd	Ni	Pb	Pr	Rb	Sb	Sc	Se	Sm
~~US W 2b~~	~~.~~	~~2.6~~	~~.~~	~~(0.76)~~	~~10~~	~~9.6~~	~~(0.33)~~	~~.~~	~~.~~	~~(7.9)~~	~~13~~	~~70~~	~~(9.3)~~	~~.~~	~~21~~	~~(0.79)~~	~~36~~	~~.~~	~~3.3~~
~~NCS DC71311~~	~~1.5~~	~~9.2~~	~~0.017~~	~~1.2~~	~~38.1~~	~~20.8~~	~~0.34~~	~~(0.16)~~	~~1.4~~	~~25.3~~	~~42.8~~	~~56.8~~	~~33.0~~	~~10.6~~	~~47.4~~	~~2.3~~	~~27.1~~	~~(0.19)~~	~~8.6~~

Number	Sn	Sr	Ta	Tb	Th	Tm	U	V	W	Y	Yb	Zn	Zr
~~US W 2b~~	~~.~~	~~190~~	~~(0.5)~~	~~(0.63)~~	~~2.4~~	~~(0.38)~~	~~(0.53)~~	~~260~~	~~.~~	~~23~~	~~2.1~~	~~80~~	~~100~~
~~NCS DC71311~~	~~2.0~~	~~470~~	~~1.8~~	~~1.1~~	~~4.9~~	~~0.36~~	~~1.2~~	~~268~~	~~1.4~~	~~24.5~~	~~2.2~~	~~(160)~~	~~359~~

DIORITE WITH EXTENSIVE ANALYSIS

analysis listed in mass % T = Total IAG: RM, ~35 g units all others: CRM, 100 g units

Number	Al_2O_3	CaO	CO_2	Fe	FeO	Fe_2O_3	H_2O+	H_2O-	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI	Type
~~CAN SY-4~~	~~20.69~~	~~8.05~~	~~3.5~~	~~4.2~~	~~2.86~~	~~6.21~~	~~(1.0)~~	~~(0.15)~~	~~1.66~~	~~0.54~~	~~0.108~~	~~7.10~~	~~0.131~~	~~49.9~~	~~0.287~~	~~4.56~~	~~Diorite Gneiss~~
VS 6103-91	16.56	4.84	(0.18)	.	3.79	5.55	(1.6)	(0.14)	2.98	3.05	0.086	3.57	0.17	60.45	0.86	1.59	Quartz
USZ 50-2009	15.97	6.99	.	.	4.82	8.10T	0.35	(0.11)	1.55	3.81	0.12	3.33	(0.39)	57.75	1.34	0.51	Diorite
IAG OU-4	14.83	4.48	.	.	4.52	5.82T	.	.	2.70	2.30	0.14	3.61	0.173	63.34	0.77	1.72	Microdiorite

continued analysis listed in mg/kg

Number	B	Ba	Be	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	F	Ga	Gd	Hf	Ho
~~CAN SY-4~~	~~.~~	~~340~~	~~2.6~~	~~122~~	~~2.8~~	~~12~~	~~1.5~~	~~7~~	~~18.2~~	~~14.2~~	~~2.00~~	~~.~~	~~335~~	~~14.0~~	~~10.6~~	~~4.3~~
VS 6103-91	46	720	2.4	46	17	58	2.9	39	.	.	1.3	710	18	.	.	.
USZ 50-2009	.	425	.	50.8	84.9	100	(5.24)	100	(4.29)	(2.29)	(1.41)	.	419.58	(5.21)	(3.69)	(0.85)
IAG OU-4	.	360.8	1.79	55.7	13.5	54.7	2.07	27.3	7.81	4.83	1.64	.	17.4	7.39	5.54	1.63

Number	La	Li	Lu	Mn	Nb	Nd	Ni	Pb	Pr	Rb	Sb	Sc	Sm	Sn	Sr
~~CAN SY-4~~	~~58~~	~~37~~	~~2.1~~	~~819~~	~~13~~	~~57~~	~~9~~	~~10~~	~~15.0~~	~~55~~	~~.~~	~~1.1~~	~~12.7~~	~~.~~	~~1191~~
VS 6103-91	27	30	0.30	.	12	24	33	24	.	83	.	15	4.8	.	410
USZ 50-2009	24.40	(13.9)	(0.30)	.	6.92	30.48	40.94	8.97	(6.45)	48.5	.	20.46	(5.61)	.	454
IAG OU-4	24.96	35.0	0.71	.	12.8	27.9	21.0	14.1	6.85	98.5	0.30	19.1	6.94	2.42	99.9

Number	Ta	Tb	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
~~CAN SY-4~~	~~0.9~~	~~2.6~~	~~1.4~~	~~.~~	~~2.3~~	~~0.8~~	~~0~~	~~.~~	~~119~~	~~14.8~~	~~93~~	~~517~~
VS 6103-91	.	.	6.8	.	.	.	96	.	21	2.1	71	173
USZ 50-2009	(0.48)	(0.76)	3.88	.	(0.32)	(1.09)	213	266	23.62	2.05	92.77	191
IAG OU-4	1.00	1.25	8.42	0.46	0.72	2.19	82.7	.	47.1	4.70	69.5	195.1

DOLERITE WITH EXTENSIVE ANALYSIS

= class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg

#	Number	SiO_2	Al_2O_3	CaO	F	FeO	Fe_2O_3	Fe_2O_3T	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	S	TiO_2	LOI	Units
1	SARM 50	51.56	15.28	10.80	.	8.49	11.0	.		0.61	7.57	0.17	2.30	0.15	.	0.86	.	100 g
2	IAG OU-2	51.095	13.801	8.994	.	8.404	.	13.253	.	0.990	5.585	0.170	2.480	0.300	.	2.425	.	~35 g
2	IAG OU-5	49.10	13.62	6.63	.	8.74	14.60	.	.	0.826	5.17	0.310	4.29	0.440	.	2.718	2.08	~35 g
1	VS 8671-2005	47.99	14.63	10.42	(0.021)	10.33	.	14.62	(0.88)	0.46	7.51	0.21	2.32	0.17	(0.026)	1.59	(0.42)	100 g
~~1~~	~~US DNC-1a~~	~~47.15~~	~~18.34~~	~~11.49~~	~~(0.0066)~~	~~7.32~~	~~1.79~~	~~9.97~~		~~0.234~~	~~10.13~~	~~0.15~~	~~1.89~~	~~0.07~~	~~.~~	~~0.48~~	~~.~~	~~25 g~~

continued analysis listed in mg/kg

Number	Ag	As	Au	B	Ba	Be	Cd	Ce	Cl	Co	Cr	Cs	Cu	Dy	Er	Eu
SARM 50	.	.	.	.	220	.	.	(30)	.	40	357	.	84	.	.	.
IAG OU-2	.	.	.	.	341.1	1.11	.	60.2	.	44.8	97.0	0.495	63.0	6.09	3.06	2.23
IAG OU-5	.	(2.45)	.	.	309.2	1.31	(0.20)	44.17	.	38.60	38.40	0.555	27.32	9.04	5.49	2.35
VS 8671-2005	(0.05)	.	(0.0026)	(3.8)	227	0.8	.	22	.	52	213	(0.45)	180	5.1	2.9	1.4
~~US DNC-1a~~	~~.~~	~~(0.12)~~	~~.~~	~~(0.9)~~	~~118~~	~~(1)~~	~~.~~	~~.~~	~~(60)~~	~~57~~	~~270~~	~~.~~	~~100~~	~~(3)~~	~~.~~	~~0.59~~

Number	Ga	Gd	Ge	Hf	Ho	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Rb
SARM 50	.	.	.	.	.	.	.	.	.	(10)	.	(85)	25	.	14
IAG OU-2	23.05	7.26	.	5.29	1.21	27.71	12.79	0.372	3.05	17.25	33.35	51.77	13.12	7.92	25.44
IAG OU-5	21.2	8.64	(2.03)	5.59	1.92	18.10	21.74	0.767	.	9.58	28.47	15.00	4.66	6.29	19.29
VS 8671-2005	17	4.5	1.5	2.7	(1)	8	8.6	0.44	0.98	6	13.2	126	(3)	2.6	11
~~US DNC-1a~~	~~(15)~~	~~(2)~~	~~.~~	~~.~~	~~(0.62)~~	~~3.6~~	~~5.2~~	~~.~~	~~.~~	~~(3)~~	~~5.2~~	~~247~~	~~(6.3)~~	~~.~~	~~(4.5)~~

Number	Sb	Sc	Sm	Sn	Sr	Ta	Tb	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
SARM 50	.	.	.	.	195	.	.	(6)	.	.	.	216	.	23	.	81	86
IAG OU-2	.	28.21	8.70	17.73	403.7	1.20	1.11	3.02	.	0.427	0.63	339.3	.	30.93	2.52	113.0	200.5
IAG OU-5	0.42	42.4	7.64	2.00	226.8	(0.546)	1.46	2.25	(0.125)	0.789	0.500	447.8	(0.865)	51.8	5.10	133.6	219.9
VS 8671-2005	.	41	4	2.64	197	0.35	0.8	1.0	.	0.44	0.45	315	(0.4)	29	3.3	112	125
~~US DNC-1a~~	~~0.96~~	~~31~~	~~.~~	~~.~~	~~144~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~148~~	~~.~~	~~18~~	~~2~~	~~70~~	~~38~~

CRM DOLOMITE WITH EXTENSIVE ANALYSIS

analysis listed in mass %

Number	CaO	MgO	Al_2O_3	CO_2	Cl	F	FeO	Fe_2O_3	H_2O	K_2O	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI	Units
UL DWA1	30.84	21.40	(0.05)	.	.	.	.	0.27	.	0.010	(0.06)	0.042	(0.023)	(0.06)	(0.010)	47.29	50 g
~~CDW 07114~~	~~30.02~~	~~21.8~~	~~0.10~~	~~46.77~~	~~0.012~~	~~0.014~~	~~0.15~~	~~0.04~~	~~(0.34)~~	~~0.038~~	~~0.010~~	~~(0.03)~~	~~0.006~~	~~0.62~~	~~0.015~~	~~.~~	~~50 g~~

continued analysis listed in mg/kg except % which is mass %

Number	Ag	As	B	Ba	Be	Bi	Br	Tot.C%	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd
UL DWA1	.	(1.3)	.	24	.	.	.	.	.	2.2	(0.2)	(4)	.	(4)	0.82	0.50	0.16	.	0.81
~~CDW 07114~~	~~0.04~~	~~0.23~~	~~20.5~~	~~44.3~~	~~(0.22)~~	~~0.03~~	~~0.84~~	~~(12.88)~~	~~0.07~~	~~3.58~~	~~3.88~~	~~2.6~~	~~0.07~~	~~30.2~~	~~0.19~~	~~0.09~~	~~0.05~~	~~(0.21)~~	~~0.18~~

Number	Ge	Hf	Hg	Ho	I	In	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Rb	S%	Sb
UL DWA1	.	(0.03)	.	0.18	.	.	3.6	.	0.05	.	.	3	.	(35)	0.67	.	.	.
~~CDW 07114~~	~~0.15~~	~~(0.10)~~	~~(0.004)~~	~~0.04~~	~~0.23~~	~~(0.066)~~	~~1.54~~	~~2.30~~	~~0.019~~	~~(0.24)~~	~~(2.77)~~	~~1.39~~	~~241~~	~~(4.44)~~	~~(0.44)~~	~~(1.42)~~	~~0.011~~	~~0.04~~

Number	Sc	Se	Sm	Sn	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
UL DWA1	0.24	.	0.62	.	284	.	0.12	.	0.08	.	0.06	1.4	6.9	.	9.4	0.39	83	.
~~CDW 07114~~	~~0.098~~	~~0.08~~	~~0.25~~	~~0.53~~	~~49~~	~~(0.18)~~	~~0.05~~	~~(0.012)~~	~~0.11~~	~~(0.070)~~	~~(0.040)~~	~~0.16~~	~~2.10~~	~~0.11~~	~~(1.40)~~	~~0.09~~	~~11.7~~	~~3.0~~

DOLOMITE

= class, where 1 = CRM and 2 = RM analysis listed in mass %

#	Number	CaO	MgO	SiO_2	Al_2O_3	Cr_2O_3	Fe_2O_3	K_2O	MnO	Na_2O	P	P_2O_5	PbO
1	NCS DC28009a	45.90	6.65	2.56	0.47	.	0.235	0.272	0.0049	0.012	0.0033	.	.
1	NCS DC28206	41.66	11.31	4.64	0.16	.	0.112	.	0.0050	.	0.0032	.	.
1	NCS DC14020b	35.73	15.28	4.21	0.92	.	0.533	0.017	0.022	0.015	0.0032	.	.
1	NCS DC14021b	34.82	17.34	1.30	0.18	.	0.447	0.027	0.0072	0.019	0.0057	.	.
1	NCS DC28203	34.74	17.16	1.45	0.286	.	0.404	.	0.012	.	0.016	.	.
1	NCS DC28015a	33.60	15.50	4.89	1.40	.	0.641	0.35	0.0085	0.019	0.011	.	.
1	NCS DC14018b	31.96	19.92	0.77	0.23	.	0.269	0.030	0.031	0.033	0.0023	.	.
1	NCS DC11003a	31.49	21.06	0.098	0.083	.	0.024	0.0030	0.0061	0.017	0.0016	.	.
1	NCS DC28014a	31.46	18.60	2.97	0.81	.	0.472	0.29	0.012	0.021	0.0061	.	.
1	NCS DC28013a	31.12	19.10	2.65	0.73	.	0.504	0.13	0.011	0.034	0.0034	.	.
~~1~~	~~NCS DC28012a~~	~~30.94~~	~~20.92~~	~~1.48~~	~~0.23~~	~~.~~	~~0.26~~	~~0.085~~	~~0.011~~	~~0.012~~	~~0.014~~	~~.~~	~~.~~
1	NCS DC28208	30.80	20.79	0.99	0.23	.	0.32	.	0.019	.	0.0013	.	.
1	NCS DC28202	30.79	20.73	2.12	0.203	.	0.275	.	0.026	.	0.0013	.	.
1	NCS DC28201	30.62	20.53	6.75	0.048	.	0.085	.	0.0072	.	0.0012	.	.
1	BCS 512	30.61	21.59	0.379	0.055	(<0.001)	0.030	(<0.02)	0.0036	.	.	(<0.02)	(<0.001)
1	CGL 021	30.59	21.40	0.267	0.200	.	0.228	0.062	0.047	(0.040)	.	0.044	.
2	DH 0915	30.59	21.21	0.035	0.019	.	0.191	0.007	0.050	0.026	.	0.008	.
1	ECRM 782-1	30.34	21.29	0.266	0.104	0.0009	0.450	0.0260	0.081	.	.	0.0128	0.0029
1	NCS DC28207	30.33	20.88	1.26	0.27	.	0.44	.	0.013	.	0.018	.	.
2	FLX 135	30.00	21.24	0.969	0.276	.	0.162	0.063	Mn_2O_3: 0.052		.	.	.

Number	S	Sr	SrO	Ti	TiO_2	ZnO	LOI	Units	
NCS DC28009a	0.021	.	0.020	.	0.024	.	43.48	50 g	
NCS DC28206	0.0093	.	0.015	.	0.0056	.	41.70	50 g	
NCS DC14020b	0.030	0.026	.	0.025	.	.	42.69	70 g	
NCS DC14021b	0.009	0.021	.	0.085	.	.	45.37	50 g	
NCS DC28203	0.028	.	.	.	.	.	45.58	50 g	
NCS DC28015a	0.013	.	0.0060	.	0.074	.	43.24	50 g	
NCS DC14018b	0.010	0.0081	.	0.011	.	.	46.24	70 g	
NCS DC11003a	0.011	0.021	.	0.0043	.	.	46.71	70 g	
NCS DC28014a	0.019	.	0.0058	.	0.041	.	44.94	50 g	
NCS DC28013a	0.007	.	0.0064	.	0.034	.	45.49	50 g	
~~NCS DC28012a~~	~~0.003~~	~~.~~	~~0.0070~~	~~.~~	~~0.0080~~	~~.~~	~~45.58~~	~~50 g~~	
NCS DC28208	0.022	.	.	.	.	.	46.20	50 g	
NCS DC28202	0.016	.	.	.	.	.	45.22	50 or 100 g	
NCS DC28201	0.0019	.	.	.	.	.	41.00	50 g	
BCS 512	.	.	0.024	.	0.0020	(<0.01)	46.80	100 g	
CGL 021	.	(0.0057)	.	.	(0.013)	.	(46.63)	50 g	C:(12.925)
DH 0915	.	.	.	.	.	.	.	100 g	
ECRM 782-1	.	.	.	.	0.0042	0.0082	47.25	100 g	
NCS DC28207	0.033	.	.	.	.	.	46.11	50 g	
FLX 135	.	.	.	.	.	.	.	30 g	

RM DOLOMITE SUBSTITUTE

typical analysis in mass % * DH 0710 also contains 0.015 CuO ** DH 0712 also contains 0.167 Na_2O and 0.012 Nb_2O_5 100 g units

Number	CaO	MgO	Al_2O_3	Cr_2O_3	Fe	K_2O	Mn_3O_4	NiO	P_2O_5	PbO	S	SiO_2	SrO	TiO_2	V_2O_5	ZnO	ZrO_2
~~DH 0710 *~~	~~35.36~~	~~35.30~~	~~8.28~~	~~0.591~~	~~5.14~~	~~0.077~~	~~1.079~~	~~0.013~~	~~0.107~~	~~0.011~~	~~0.265~~	~~10.23~~	~~0.028~~	~~0.301~~	~~0.032~~	~~0.159~~	~~0.051~~
DH 0711	32.46	28.57	9.49	0.84	8.81	0.092	1.745	0.020	0.262	0.015	0.314	12.07	0.029	0.370	0.056	0.183	0.068
DH 0709	23.45	63.07	5.62	0.071	1.96	0.053	0.444	0.010	0.133	0.029	0.097	3.69	0.011	0.131	0.021	0.014	0.057
DH 0712 **	20.16	32.62	20.79	0.560	6.72	0.146	0.906	0.050	0.141	0.008	0.129	13.30	0.016	0.671	0.039	0.052	0.383

DUNITE

= class, where 1 = CRM and 2 = RM analysis listed in mass % DH, SARM: 100 g US: 25 g VS 2112: 40 g VS 4233: 100 g

#	Number	MgO	SiO_2	Si	Al_2O_3	Al	CO_2	Tot.C	CaO	Ca	Co	Cr	Cr_2O_3	T.Fe	FeO	Fe_2O_3	T.Fe_2O_3
~~1~~	~~US DTS 2B~~	~~49.4~~	~~39.4~~	~~18.4~~	~~0.45~~	~~0.24~~	~~.~~	~~.~~	~~0.12~~	~~0.09~~	~~0.0120~~	~~1.5500~~	~~.~~	~~5.43~~	~~(4.27 FeII)~~	~~.~~	~~7.76~~
1	SARM 6	43.51	38.96	.	(0.3)	.	.	.	0.28	.	.	.	0.42	.	14.63	0.71	.
1	VS 2112-81	42.40	35.07	.	.	.	0.46	.	.	.	0.0129	.	.	.	.	.	10.06
1	VS 4233-88	41.86	39.58	.	0.97	.	(1.61)	.	1.52	.	0.012	0.41	.	.	(5.54)	.	8.91

continued analysis listed in mass %

Number	H_2O	K_2O	Mg	MnO	Na	Na_2O	Ni	P_2O_5	S	TiO_2	V	LOI @ 900 'C
~~US DTS 2B~~	~~.~~	~~.~~	~~29.0~~	~~.~~	~~(0.02)~~	~~.~~	~~0.3700~~	~~.~~	~~.~~	~~.~~	~~0.0022~~	~~.~~
SARM 6	.	(0.01)	.	0.22	.	(0.04)	.	.	.	(0.02)	.	.
VS 2112-81	11.35	.	.	0.176	.	.	0.133	.	.	.	0.00069	.
VS 4233-88	(+4.82 -0.4)	0.010	.	0.13	.	0.035	0.22	(0.01)	(0.041)	0.018	0.0033	6.31

continued analysis listed in mg/kg except % which is mass %

Number	Ba	Cu	Ge	Li	Mn	Mo	Pb	Rb	Sb	Sc	Sn	Sr	Zn
~~US DTS 2B~~	~~(16)~~	~~(3)~~	~~(0.7)~~	~~.~~	~~830~~	~~.~~	~~(4)~~	~~(2)~~	~~(0.6)~~	~~(3)~~	~~.~~	~~.~~	~~45~~
SARM 6	.	.	.	.	.	.	.	.	.	.	.	.	.
VS 2112-81	.	27	.	.	.	1.4	.	.	.	.	2.2	.	82
VS 4233-88	.	33	1.1	2.0	.	.	.	.	.	9	.	18	30

H_2O+: (4.82)

FELDSPAR

= class, where 1 = CRM and 2 = RM analysis listed in mass %

#	Number	SiO_2	Al_2O_3	BaO	CaO	F	Fe_2O_3	K_2O	MgO	Na_2O	P_2O_5	PbO	Rb_2O	SrO	TiO_2	LOI	Units
1	BCS 532	77.07	13.46	.	0.212	.	0.181	3.80	0.159	4.35	.	.	.	.	.	0.56	100 g
1	FLX CRM129	69.84	16.44	0.130	0.374	.	(0.104)	10.78	.	2.11	0.068	.	.	(0.014)	(0.036)	(0.428)	40 g
1	BCS 375/1	69.24	17.88	.	0.78	.	0.291	1.47	0.180	8.89	0.226	.	.	.	0.312	0.72	100 g
1	FLX CRM128	67.88	19.95	(0.007)	1.08	.	0.021	0.206	.	10.74	(0.008)	.	.	0.049	(0.017)	(0.171)	40 g
2	DH X1602	66.93	17.16	0.323	0.032	0.047	.	14.19	0.001	.	0.087	0.012	.	0.036	0.038	.	100 g
1	GBW 03116	66.26	18.63	.	0.76	.	0.19	9.60	0.054	3.69	.	.	.	.	0.048	0.86	50 g
1	IPT 72	66.2	20.26	.	0.18	.	0.09	1.47	(0.022)	10.0	1.03	.	.	.	0.005	0.66	80 g
1	IPT 53	65.8	18.3	.	0.27	.	0.13	12.1	0.05	2.5	0.072	.	.	.	0.013	0.51	80 g
1	BCS 376/1	65.77	18.63	0.0210	0.421	.	0.085	11.59	(0.03)	3.00	(0.02)	0.0090	.	.	(<0.01)	0.203	100 g
1	BCS 529	56.24	26.84	.	9.58	.	0.273	0.421	0.045	5.58	.	.	.	.	.	0.550	100 g

	Number	Si	Al	Ba	Ca	Fe	K	Na	P	Pb	Rb	Sr			
1	SRM 99b	(32.07)	10.36	0.1409	(1.18)	.	0.02787	3.09	.	5.25	(0.0044)	0.00712	0.00726	0.0444	.	.	40 g

CRM FELDSPAR WITH EXTENSIVE ANALYSIS

analysis listed in mass %

Number	SiO_2	Al_2O_3	CO_2	CaO	FeO	Fe_2O_3	$T.Fe_2O_3$	H_2O		K_2O	Li_2O	MgO	MnO	Na_2O	P_2O_5	Rb_2O	TiO_2	LOI	Units
GUW FK	88.2	6.18	.	0.110	.	0.261	.	.		4.23	.	0.15	0.0037	0.25	0.077	.	0.058	.	50 g
UNS ZK	74.38	14.19	.	0.43	0.73	0.88	.	.		4.06	0.06	0.067	0.025	4.50	.	0.094	0.039	0.54	100 g
JF-1	66.69	18.08	.	0.93	.	0.06	0.08	+0.23	-0.13	9.99	.	0.006	0.001	3.37	0.01	.	0.005	.	100 g
JF-2	65.30	18.52	.	0.09	.	0.06	0.06	+0.24	-0.18	12.94	.	.	0.001	2.39	.	.	0.005	20 or	100 g
VS 811-89	60.67	18.20	0.20	0.51	4.8	7.20	.	4.0		3.43	.	2.22	0.042	2.31	0.19	.	0.94	.	100 g
SRM 70b	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.	40 g

analysis listed in mg/kg except % indicating mass %, * indicating ppb, and ! indicating scientific notation

Number	Al%	As	B%	Ba%	Be	Ca%	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	F%	Fe%	Ga	Ge
GUW FK	.	.	.	0.0700	.	.	.	.	.	2.6	11	.	.	.	.	.	6	.
UNS ZK	.	4.8	.	.	.	.	5.7	7.0	.	38.7	12.2	.	.	.	.	.	33.3	.
JF-1	9.57	.	.	0.1750	.	0.66	4.19	0.12	5.48	2.09	0.82	0.39	0.31	0.87	.	0.06	17.4	.
JF-2	9.80	.	.	0.0298	.	0.06	0.84	0.68	.	1.06	0.78	.	.	0.59	.	0.04	17.9	.
VS 811-89	.	.	0.008	0.09	3.0	.	0.007*	21	96	6.3	41	.	.	.	0.06	.	22	1.7
SRM 70b	7.98	.	.	0.00282	.	0.1770	.	.	(0.7)	.	.	.	.	.	.	(0.13)	.	.

Number	Hf	Ho	K%	La	Li%	Mg%	Mn%	Mo	Na%	Nb	Nd	Ni	P%	Pb	Pr	Ra!	Rb%	S%
GUW FK	.	.	.	.	0.0008	.	.	.	.	.	.	.	0.004	18	.	.	0.0132	.
UNS ZK	1.4	.	.	.	.	.	.	21.0	.	33.5	.	29.4	.	.	.	.	.	
JF-1	1.18	0.11	8.29	2.80	0.000981	0.004	0.001	.	2.50	0.74	1.46	.	.	33.4	0.48	.	0.0266	.
JF-2	0.19	.	10.74	0.63	0.000219	.	0.001	.	1.77	0.70	.	.	.	48.7	.	.	0.0218	.
VS 811-89	.	.	.	.	0.006	.	.	2.0	.	14	.	59	.	20	.	3e-10	0.012	0.087
SRM 70b	.	.	6.33	.	.	(0.0298)	0.00630	.	2.36	.	.	.	0.0790	(57)	.	.	(0.0495)	.

Number	Sc	Si%	Sm	Sr%	Ta	Tb	Th	Ti%	Tl	U	V	Y	Yb	Zn%	Zr%
GUW FK	.	.	.	0.0072	.	.	.	.	.	.	.	.	.	0.0014	.
UNS ZK	3.6	.	16.8	.	19.4	.	4.7	.	.	.	.	8.4	.	0.00194	.
JF-1	0.23	31.17	0.41	0.0172	0.079	0.076	1.17	0.003	1.18	0.33	5.43	2.84	0.35	0.000441	0.00386
JF-2	0.089	30.52	0.11	0.0200	.	.	0.31	0.003	1.10	.	4.86	2.67	.	0.000140	0.000673
VS 811-89	19	.	3.2	0.017	1.3	.	11	.	.	2.5	0.016%	32	3.4	0.012	0.021
SRM 70b	.	(34.4)	.	(0.0027)	.	.	.	(0.0032)	.	.	(0.93)	.	.	(0.00077)	.

CRM TRACE ELEMENTS IN FELDSPAR

analysis listed in mg/kg

Number	Rb	Uncertainty	Sr	Uncertainty	$^{87}Sr/^{86}Sr$	$^{86}Sr/^{88}Sr$	Units
SRM 607	523.90	1.01	65.485	0.320	1.20039	0.1194	5 g

CRM FLUORSPAR (FLUORITE)

analysis listed in mass % NCS DC62003a: 20g NCS DC14046-8,NCS DC282x, RHO_3: 50g other NCS, CMSI, GBW: 65g SRM: 120g all others: 100g

Number	CaF_2	F	Al_2O_3	BaO	$CaCO_3$	CaO	Fe	Fe_2O_3	K_2O	Na_2O	P	S	SiO_2	Others
SRM 180	98.80	.	.	.	.	.	.	.	.	.	.	.	.	
SARM 15	97.84	.	.	.	0.95	.	.	(0.23)	.	.	0.007	.	(0.26)	$MgCO_3$: 0.55 Mn: 0.0213
SARM 14	97.32	.	.	.	(0.3)	.	.	(0.06)	.	.	(0.079)	.	(0.57)	
BCS 392	97.2	.	.	0.37	.	0.52	.	.	.	.	.	0.12	0.67	CO_2: 0.48 Pb: 0.18
JK D	97.07	47.24	0.04	.	.	.	.	0.20	.	.	0.035	0.004	(1.5)	
NCS DC28088	96.87	.	0.14	.	0.14	.	.	0.173	0.036	0.019	0.015	0.092	1.76	MgO: 0.015 Mn: 0.040
NCS DC28228	94.81	.	.	.	0.99	.	0.26	.	.	.	0.076	0.107	2.76	Mn: 0.010
NCS DC14022a	93.68	.	.	.	0.30	.	0.166	.	0.026	0.006	0.014	0.35	3.06	
NCS DC14024a	93.28	.	.	.	0.62	.	0.22	.	0.040	0.006	0.0014	0.009	5.44	
VS 3383-86	91.84	.	0.53	.	.	.	0.612	.	.	.	0.063	0.095	5.03	
GBW 07251	90.87	.	.	.	(0.02)	.	.	0.124	0.026	0.005	0.0031	0.090	8.35	
NCS DC28230	90.72	.	.	.	0.87	.	0.25	.	.	.	0.063	0.084	7.68	Mn: 0.012
CGL 132	88.65	.	.	.	(0.78)	.	.	.	.	.	(0.012)	(0.019)	10.15	
NCS DC28229	85.56	.	.	.	0.58	.	0.28	.	.	.	0.045	0.079	10.62	Mn: 0.013
IPT 95	85.4	.	.	.	.	.	.	0.36	.	.	.	.	8.3	
GBW 07253	85.21	.	.	.	(0.02)	.	.	0.209	0.044	0.005	0.0013	0.045	14.15	
VS SH13	84.7	.	.	.	0.51	.	0.353	.	.	.	0.012	0.103	13.0	
NCS DC28087	83.12	.	0.69	.	1.06	.	.	0.36	0.28	0.031	0.018	0.050	13.74	MgO: 0.14 Mn: 0.0099
NCS DC28227	78.75	.	.	.	0.33	.	0.28	.	.	.	.	0.028	19.36	Mn: 0.012
NCS DC28226	77.33	.	.	.	0.20	.	0.31	.	.	.	.	0.068	18.04	Mn: 0.014
NCS DC28086	73.73	.	1.07	.	2.06	.	.	0.87	0.38	0.054	0.023	0.28	19.27	MgO: 0.73 Mn: 0.027
NCS DC62003a	60.98	.	3.69	.	.	1.17	.	2.35	1.44	0.52	.	SO3:0.12	26.20	MgO: 0.18 TiO_2: 0.15 LOI: 1.38
NCS DC28085	60.16	.	1.29	.	3.73	.	.	1.32	0.41	0.067	0.021	0.52	27.17	MgO: 1.99 Mn: 0.034
NCS DC28084	46.59	.	0.99	.	9.08	.	.	0.52	0.34	0.061	0.0071	0.071	28.89	MgO: 5.51 Mn: 0.051
CGL 135	35.60	.	.	.	(0.68)	.	.	.	.	.	0.037	0.41	47.67	
VS 4182-87	32.75	.	.	.	1.70	.	.	.	.	.	0.114	0.038	47.52	
VS 5132-89	32.69	.	.	.	11.75	.	.	.	.	.	.	.	(27.68)	
~~VS 2666-83~~	~~32.02~~	~~.~~	~~.~~	~~.~~	~~0.70~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~0.055~~	~~1.24~~	~~47.73~~	
VS 5133-89	4.17	.	.	.	1.10	.	.	.	.	.	.	.	.	
Number	CaF_2	F	Al_2O_3	BaO	$CaCO_3$	CaO	Fe	Fe_2O_3	K_2O	Na_2O	P	S	SiO_2	Others

FLUORSPAR (FLUORITE)

= class where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg IGS: 55 g all others: 100 g

#	Number	Ca	F	Al_2O_3	BaO	CO_2	CuO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	SiO_2	SO_4	TiO_2	ZnO	LOI 900'C
1	IGS 39	.	46.69	.	.	.	.	.	.	.	.	.	.	.	.	.	.
~~2~~	~~DH 2712~~	~~44.18~~	~~40.6~~	~~1.01~~	~~.~~	~~2.11~~	~~0.199~~	~~0.373~~	~~0.125~~	~~0.739~~	~~0.237~~	~~.~~	~~8.91~~	~~0.103~~	~~0.069~~	~~0.103~~	~~0.370~~
2	DH 2709	39.98	38.10	0.310	.	0.027	0.052	15.72	0.029	0.017	0.077	0.030	3.93	0.027	.	0.004	0.929
1	USZ HJ	37.32	34.92	2.35	.	.	.	0.34	0.99	.	.	.	23.01	.	0.047	.	.
1	UNS FM **	35.89	34.03	(0.329)	3.89	(0.13)	.	0.496	0.097	(0.036)	.	(0.087)	22.59	.	0.018	.	.

Number	Bi*	Ce*	Cr*	Cr_2O_3%	Cu*	Eu*	La*	Mo*	Pb*	S	Sb*	Sc*	Sm*	Sr%	Y*
IGS 39	.	.	.	.	.	.	.	.	.	.	.	.	.	(0.014)	.
~~DH 2712~~	~~.~~	~~.~~	~~.~~	~~0.106~~	~~.~~	~~. NiO.0.153~~	~~.~~	~~. PbO.0.102~~	~~.~~	~~.~~	~~.~~	~~.~~	~~SnO_2.0.054~~	~~.~~	~~.~~
DH 2709	.	.	.	0.004	.	.	.	.	.	.	.	.	.	.	.
USZ HJ	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
UNS FM **	(58.8)	28.3	272	.	60.7	1.16	14.1	44.6	72.2	0.91	2.1	0.67	5.6	(0.0580)	154

** UNS FM also contains Co: 2.6*, Cs: 0.81*, Mn: 64*, U: 2.9*, Yb: 3* and trace informational values for 19 other elements

CRM GABBRO

analysis listed in mass % 40 g units

Number	SiO_2	Al_2O_3	CO_2	CaO	F	FeO	Fe_2O_3	$T.Fe_2O_3$	H_2O	H_2O+	$T.H_2O$	K_2O	MgO	MnO	Na_2O	P_2O_5	S	TiO_2
VS MO8	51.98	16.39	0.43	9.02	0.0390	9.61	0.85	11.55	0.088	0.22	0.31	0.46	6.39	0.16	3.27	0.21	0.1700	1.15
VS MO7	40.79	17.60	0.03	14.62	0.1300	7.76	3.73	12.35	0.12	0.70	0.82	0.75	6.46	0.15	2.05	1.08	0.1800	3.39

continued analysis listed in mg/kg except % which is mass % VS MO8: Gabbro VS MO7: Orthoclase Gabbro

Number	B	Ba	Be	Co	Cr	Cs	Cu	Ga	La	Li	Mo	Nb	Ni	Pb	Rb	Sc	Sn	Sr	V	Y	Yb	Zn	Zr
VS MO8	7.5	272	0.8	48	126	1.1	40	18	26	5.5	3.2	3.7	18	7.3	4.0	31	2.7	477	199	18	2.0	84	48
VS MO7	4.5	7480	(1.2)	49	76	1.1	59	(18)	37	5.4	(2.4)	12	45	7.6	12	(25)	(3.8)	1745	270	.	.	65	53

CRM GABBRO WITH EXTENSIVE ANALYSIS

analysis listed in mass % except * which is mg/kg CAN WMG-1A: 350 g CGL: 100 or 250 g GBW: 50 g JGb-1: 20 g others: 100 g

Number	SiO_2	Al_2O_3	CO_2	CaO	F	FeO	Fe_2O_3	$T.Fe_2O_3$	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	TiO_2	LOI
USZ 51-2009	48.00	26.26	.	13.61	(0.085)	2.00	.	4.22	(+0.61 -0.13)	0.31	2.85	0.080	2.42	0.078	0.37	1.40
VS 8670-2005	46.63	14.93	.	10.68	0.13	6.23	.	11.33	(+0.93)	3.09	6.81	0.167	2.72	1.03	1.72	(0.77)
JGb-2	46.47	23.48	.	14.10	.	5.41	0.62	6.69	-0.14	0.059	6.18	0.13	0.92	0.017	0.56	.
JGb-1 *	43.66	17.49	.	11.90	0.0133	9.43	4.79	15.06	+1.28 -0.13	0.24	7.85	0.189	1.20	0.056	1.60	.
CGL 013	43.15	22.57	.	14.99	(0.099)	4.57	.	10.99	(+0.46 -0.21)	0.11	4.51	0.10	1.41	(0.038)	0.94	(1.03)
VS 2117-81	37.62	13.67	(0.16)	15.75	0.0720	9.05	18.54	.	(0.12)	0.204	8.66	0.222	0.72	2.15	1.46	.
GBW 07112	35.69	14.14	0.12	9.86	0.006	13.36	9.90	.	1.09	0.15	5.25	0.193	2.11	0.028	7.69	.

Number	Si	Al	.	Ca		Fe				K	Mg	Mn	Na	P	Ti	
JGb-1 *	20.41	9.26	.	8.50	.	10.53	4.79	15.05	+1.28 -0.13	0.20	4.73	0.146	0.89	0.024	0.96	.
CAN WMG-1A	18.27	4.75	.	10.06	.	12.71	.	.	.	0.1021	7.41	(0.1141)	0.1119	0.0731	0.419*	(4.31)

* JGb-1 is certified for major elements and their oxides

continued analysis listed in mg/kg except % which is mass %

Number	Ag	As	B	Ba%	Be	Bi	Cd	Ce	Cl%	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd
USZ 51-2009	.	.	.	0.0119	.	.	.	7.90	.	14.93	69.97	.	45.32	.	.	.	18.87	.
VS 8670-2005	(0.09)	.	(15)	0.152	1.9	.	.	163	.	40	58	3.3	58	6.2	2.8	3.9	17	11.5
JGb-2	.	.	.	0.00365	.	.	.	3.0	.	25.8	125	0.51	11.4	.	.	0.59	15.9	.
JGb-1 *	.	1.09	4.03	0.00643	.	.	0.087	8.17	.	60.1	57.8	0.26	85.7	1.56	1.04	0.62	17.9	1.61
CGL 013	.	.	.	0.004994	.	.	.	(3.43)	.	35.21	35.72	.	608	(0.79)	(0.44)	(0.37)	17.94	(0.8)
VS 2117-81	.	.	.	0.0110	.	.	.	.	.	65	14	.	3600	.	.	.	21	.
GBW 07112	0.05	.	1.84	0.00862	.	0.04	0.09	4.2	0.006	93.0	14.5	.	28.3	1.11	0.47	0.74	23.7	1.31
CAN WMG-1A	3.03	5.99	.	0.0216	.	(0.251)	(0.818)	(17.18)	.	191	804	.	7120	2.291	(1.34)	(0.733)	(12.4)	(2.351)

Number	Ge	Hf	Ho	I	In	La	Li	Lu	Mo	Nb	Nd	Ni	Pd	Pb	Pr	Pt	Rb	S%
USZ 51-2009	.	.	.	.	.	.	.	.	.	.	.	23.94	.	6.00	.	.	6.58	.
VS 8670-2005	1.3	5.3	1.1	.	.	82	12	0.3	1.4	8.4	89	47	.	15	20.7	.	80	(0.015)
JGb-2	.	0.25	.	.	.	1.5	.	0.062	0.42	1.9	1.8	13.6	.	1.5	.	.	2.9	.
JGb-1 *	1.01	0.88	0.33	.	.	3.60	4.59	0.15	0.59	3.34	5.47	25.4	.	1.92	1.13	.	6.87	0.1910
CGL 013	.	(0.32)	(0.16)	.	.	(1.31)	(4.89)	(0.06)	(0.5)	(0.36)	(2.33)	23.34	.	4.68	(0.5)	.	(1.96)	.
VS 2117-81	2.1	.	.	.	.	.	3.3	.	2.0	.	.	28	.	6	.	.	.	0.1240
GBW 07112	1.06	0.65	0.20	0.08	0.12	1.71	1.94	0.06	.	9.3	4.10	69	.	.	0.84	.	.	0.37
CAN WMG-1A	.	.	.	.	.	8.47	(44.7)	(0.196)	2.49	(5.26)	9.41	2480	0.484	(9.2)	(2.220)	0.899	(2.53)	3.43

Number	Sc	Se	Sm	Sn	Sr%	Ta	Tb	Te	Th	Tl	Tm	U	V	Y	Yb	Zn	Zr
USZ 51-2009	12.33	.	.	.	0.1196	.	.	.	.	.	.	.	85.28	5.14	.	59.87	(33.49)
VS 8670-2005	26	.	17	3.2	0.224	0.5	1.5	.	8	.	(0.35)	1.8	250	30	2.5	120	219
JGb-2	27	.	0.51	.	0.0438	0.29	0.15	.	0.19	.	.	.	174	4.5	0.39	48.5	11.6
JGb-1 *	35.8	.	1.49	0.48	0.0327	0.18	0.29	.	0.48	.	0.16	0.13	635	10.4	1.06	109	32.8
CGL 013	39.66	.	(0.72)	.	0.0778	.	(0.13)	.	.	.	(0.05)	.	420	4.30	(0.39)	98.00	(12)
VS 2117-81	37	.	.	6.5	0.1040	.	.	.	.	.	.	.	960	.	2.6	136	.
GBW 07112	22.5	0.26	1.22	0.89	0.0612	.	0.20	0.010	.	0.07	0.09	.	768	4.9	0.36	118	29
CAN WMG-1A	21.33	14.1	2.211	(1.91)	0.00390	(0.355)	.	(1.19)	1.07	.	(0.192)	(0.65)	158	12.67	(1.220)	112	35.7

CRM GOLD ORE

ng/g (ppb) 10g or 1kg

Number	Au
GLG919-2	635.73
GLG321-2	329.99
GLG322-1	327.84
GLG320-1	322.15
GLG321-5	315.63
GLG920-3	276.79
GLG318-1	259.04
GLG319-3	238.19
GLG922-2	231.81
GLG313-3	227.70
GLG912-5	224.34
GLG917-3	222.13
GLG318-3	214.41
GLG911-5	209.21
GLG904-4	204.08
GLG322-2	202.03
GLG322-3	199.16
GLG315-5	194.82
GLG317-2	189.86
GLG313-4	183.83
GLG921-4	160.65
GLG922-1	158.89
GLG317-1	151.88
GLG316-2	150.84
GLG920-2	138.05
GLG921-3	127.92
GLG304-4	121.43
GLG919-1	120.71
GLG314-3	103.11
GLG314-5	95.23
GLG319-4	99.13
GLG317-3	94.60
GLG323-3	84.99
GLG922-3	83.98
GLG922-4	83.56
GLG313-5	83.36
GLG310-5	79.83
GLG919-3	76.60
GLG320-2	66.38
GLG323-5	59.61
GLG305-3	55.48
GLG320-3	52.09
GLG319-5	44.93
GLG919-5	34.78
GLG910-3	32.02
GLG322-5	30.91
GLG920-1	28.01
GLG319-1	25.63
GLG321-1	24.31
GLG913-2	22.75
GLG921-5	21.48
GLG312-1	20.65
GLG323-4	19.69
GLG321-4	19.52
GLG920-5	18.89
GLG920-4	16.60
GLG922-5	14.95
GLG915-1	14.01
GLG919-4	11.32
GLG322-4	10.96
GLG901-2	9.92
GLG912-1	6.86
GLG910-4	6.36
GLG916-1	5.06
GLG911-4	4.65
GLG910-1	4.89
GLG921-1	4.65
GLG921-2	4.37
GLG321-3	4.28
GLG907-1	4.18
GLG912-3	3.98
GLG904-1	3.82
GLG911-3	3.74
GLG914-2	3.68
GLG314-1	3.63
GLG316-5	3.50
GLG916-2	3.48
GLG916-3	3.45
GLG323-2	3.43
GLG916-4	3.27
GLG302-4	3.23
GLG913-4	3.10
GLG318-2	3.03
GLG314-2	2.98
GLG323-1	2.88
GLG913-3	2.81
GLG312-2	2.78
GLG320-4	2.76
GLG316-3	2.75
GLG910-5	2.58
GLG912-2	2.54
GLG319-2	2.50

CRM GOLD ASSAY PILLS

25 x 1g pressed powder

Number	Au mg/kg (ppm)
GAP-06	2.2202
GAP-03	1.0000
GAP-05	0.5249
GAP-01	0.3237
GAP-04	0.2117
GAP-02	0.1025
GAP-07	0.0304

CRM GOLD ORE

analysis listed in grams per Ton

Number	Ag	Au	Units
NCS DC93008a	58.5	18.6	500 g
NCS DC93006b	35.5	42.8	1 kg
NCS DC93007b	23.7	31.8	750 g
NCS DC93009a	7.9	2.5	500 g
NCS DC93009	7.8	2.5	500 g

RM GOLD ORE

g/t = mg/kg = ppm 1 kg, last

Number	Au	Pd*	Pt*
CDN GS-50	50.5	.	.
CDN GS-20A	21.12	.	.

CRM 17034 GOLD ORE

Number	Au (mg/kg)	Units
IMS-261	7.03	Powder 1 kg
IMS-247	4.24	Powder 1 kg
IMS-231	3.43	Powder 1 kg
IMS-230	2.19	Powder 1 kg
IMS-237	2.06	Coarse Material 500 g
IMS-267	2.00	Powder 1 kg
IMS-266	1.03	Powder 1 kg
IMS-255	0.89	Powder 1 kg
IMS-227	0.82	Powder 1 kg
IMS-236	0.72	Coarse Material 500 g
IMS-226	0.61	Powder 1 kg
IMS-265	0.31	Powder 1 kg
IMS-235	0.23	Coarse Material 500 g
IMS-225	0.21	Powder 1 kg

CRM GOLD ORE

analysis listed in mg/kg (ppm) except % which is mass 10g or 200g units

Number	Au Fire	Au Aqua	Ag	As	Co	Cu	Ni	Pb	S%	Zn
GBMS623-4	17.95	17.29	49.9	1263	106	22728	196	9476	3.88	19340
GBMS911-4	6.78	6.73	1.79	36	54	900	32	35	0.79	115
GBMS623-3	5.85	5.46	3.7	570	332	10792	77	322	5.16	35
GBMS304-4	5.67	5.29	3.4	535	.	9786	732	271	6.27	149
GBMS623-2	3.13	2.93	6.9	450	55	3422	265	241	1.18	583
GBMS911-2	2.88	2.82	1.24	62	78	1417	34	47	1.30	122
GBMS304-3	2.68	2.51	1.5	263	137	3637	376	159	2.35	143
GBMS304-5	1.62	1.59	0.8	99	68	2293	21	65	1.04	13
GBMS911-3	1.33	1.31	0.17	13	31	7652	27	37	0.99	196
GBMS911-1	1.04	1.04	1.19	335	31	10028	23	5844	1.40	1221
GBMS623-1	0.88	0.87	3.5	9	26	6004	25	45	0.75	127

Fire = Fire Assay, Aqua = Aqua Regia

CRM GOLD ORE

mg/kg (ppm) 10g or 1kg

Number	Au Fire	Au Aqua
G310-10	48.53	47.74 last
G917-1	48.52	47.79
G312-10	24.94	24.67
G915-8	24.72	24.58
G916-5	19.92	19.63
G915-5	17.95	17.29
G914-9	16.77	16.62
G915-7	12.38	12.35
G301-9	10.47	.
G914-10	10.26	10.17
G915-9	9.82	9.83
G914-7	9.81	9.68
G915-3	9.39	9.22
G915-4	9.16	9.00
G306-3	8.66	8.60
G307-7	7.87	7.75
G311-10	7.32	5.54
G912-1	7.29	7.33
G913-10	7.09	7.10
G313-5	7.07	7.05
G313-7	6.93	6.97
G314-3	6.70	6.68
G316-8	6.11	6.06
G316-7	5.85	5.79
G312-9	5.84	5.69
G315-6	5.68	5.26
G315-1	5.64	5.38
G904-8	5.53	5.51
G314-5	5.29	5.30
G915-2	4.98	4.96
G913-8	4.87	4.93
G396-8	4.82	4.75
G316-10	4.65	4.56
G915-1	4.56	4.51
G916-7	4.51	4.48
G998-4	4.36	4.27
G912-6	4.08	4.05
G398-10	4.07	3.99
G397-6	3.95	3.82
G905-7	3.92	3.89
G913-5	3.70	3.21
G911-8	3.65	2.68
G310-9	3.29	3.25 last
G900-7	3.22	3.19
G916-8	3.20	3.15
G914-6	3.21	3.16
G305-8	3.14	2.80
G916-9	3.13	2.88
G910-6	3.09	3.05
G398-6	2.94	2.86
G916-10	2.81	2.73
G914-1	2.57	2.55
G912-2	2.51	2.51
G308-3	2.50	2.47
G914-2	2.48	2.44
G906-2	2.46	2.40
G314-7	2.45	2.43
G303-4	2.43	2.45
G911-4	2.43	2.45
G313-8	2.43	2.41
G913-2	2.40	2.42
G913-3	2.36	2.21
G913-7	2.31	2.26
G913-6	2.19	2.16
G912-3	2.09	2.10
G313-2	2.04	2.07
G313-4	2.00	2.00
G307-8	1.99	1.97
G314-6	1.98	1.98
G916-2	1.98	1.96

Number	Au Fire	Au Aqua

CRM GOLD ORE

mg/kg (ppm) 10g or 1kg

Number	Au Fire	Au Aqua
G912-4	1.91	1.95
G316-9	1.75	1.71
G916-1	1.72	1.70
G906-1	1.67	1.64
G901-5	1.65	1.61
G312-5	1.60	1.56
G904-7	1.58	1.54
G311-8	1.57	1.54
G300-9	1.53	1.51
G314-9	1.52	1.49
G910-9	1.51	1.48
G312-2	1.51	1.47
G910-1	1.42	1.40
G316-6	1.40	1.39
G911-3	1.37	1.37
G913-4	1.37	1.35
G907-5	1.34	1.31
G311-5	1.32	1.28
G911-10	1.30	1.30
G914-3	1.24	1.20
G301-8	1.19	.
G308-2	1.11	1.08
G316-2	1.04	1.03
G314-8	1.03	1.02
G315-9	1.02	1.00
G916-3	1.01	1.00
G314-2	0.99	0.98
G315-2	0.98	0.98
G908-4	0.96	0.93
G999-3	0.95	0.90
G910-2	0.90	0.89
G399-5	0.87	0.85
G913-1	0.82	0.82
G998-3	0.81	0.80
G314-1	0.75	0.74
G912-8	0.53	0.52
G916-4	0.51	0.51
G313-3	0.51	0.49
G316-5	0.50	0.50
G398-2	0.50	0.42
G912-7	0.42	0.41
G912-5	0.38	0.38
G314-10	0.38	0.38
G315-4	0.32	0.31
G316-1	0.31	0.31
G315-7	0.30	0.29
G311-3	0.27	0.27
G316-4	0.24	0.24
G307-3	0.24	0.23
G312-7	0.22	0.22
G311-6	0.22	0.21
G903-10	0.21	0.22
G908-2	0.21	0.21
G316-3	0.21	0.21
G310-2	0.20	0.20
G914-4	0.20	0.20
G914-5	0.20	0.20
G911-5	0.20	0.19
G302-10	0.18	0.16
G911-6	0.17	0.16
G314-4	0.14	0.13
G315-5	0.10	0.10
G310-3	0.07	0.06
G908-1	0.06	0.06

Number	Au Fire	Au Aqua

CRM GOLD ORE

analysis lsited in mass % except * which is mg/kg for U, M = /ICP and X = XRF D = Demsotu/Specific Gravity

Number	Au*	Al_2O_3	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO	Na_2O	S	SiO_2	TiO_2	U M	LOI	D	Units
~~AMIS 0429~~	~~22.93~~	~~.~~	~~0.48~~	~~(0.11)~~	~~4.97~~	~~0.54~~	~~.~~	~~(0.04)~~	~~.~~	~~1.57~~	~~87.70~~	~~.~~	~~0.0722~~	~~(1.07)~~	~~.~~	~~100 g~~
AMIS 0430	2.68	2.80	0.19	0.12	2.03	0.32	(0.11)	0.030	(0.06)	0.33	92.3	(0.14)	0.0113	(1.66)	2.71	100 g

CRM GOLD AND SILVER ORE

analysis listed in mg/kg (ppm) * and mass percent %

Number	Ag*	Au*	As%	S%	Sb%	Units
NCS DC28104	62.2	63.4	.	.	.	250 g
USZ 29-2000	6.05	42.26	.	.	.	100 or 200 g
VS 5938-91	6.5	36	8.45	28.73	0.021	100 g
VS 5937-91	6.4	33	7.78	25.83	0.019	100 g
~~VS 2739-83~~	~~5.7~~	~~34~~	~~8.0~~	~~26.0~~	~~0.020~~	~~100 g~~
NCS DC28107	20.4	20.0	.	.	.	250 g
NCS DC29103	18.0	20.0	.	.	.	500 g
CAN MA-1b	(4)	17.0	.	.	.	200 g
VS 5936-91	3.5	20	4.72	15.26	0.012	100 g
VS 5935-91	23	13	.	15.10	0.044	100 g
NCS DC28106	11.0	11.0	.	.	.	500 g
USZ 39-2005	49.33	10.92	.	.	.	250 g
VS 5934-91	1.8	8.9	2.11	6.77	0.0057	100 g
CAN MA-3a	(2.4)	8.56	.	.	.	200 g
USZ 40-2005	27.06	7.38	.	.	.	100 or 250 g
USZ 30-2000	1.18	5.92	.	.	.	250 g
NCS DC28105	5.8	5.0	.	.	.	500 g
VS 5933-91	1.1	4.6	1.08	3.35	0.0039	100 g
NCS DC29102	37.4	4.30	.	.	.	500 g
VS 8815-2006	0.75	4.25	1.000	3.27	0.00260	100 g
USZ 31-2000	1.07	3.28	.	.	.	250 g
CAN MA-2c	(0.51)	3.02	.	.	.	400 g
VS 5932-91	0.9	3.0	0.54	1.77	0.0021	100 g
NCS DC28102	2.2	2.5	.	.	.	500 g
VS 8816-2006	0.360	2.13	0.500	1.64	0.00135	100 g
NCS DC28103	3.1	1.8	.	.	.	500 g
NCS DC28101	4.2	1.7	.	.	.	500 g
USZ 21-98	.	1.06	.	.	.	250 g
VS 2740-83	0.31	0.9	0.17	0.38	0.0019	100 g
NCS DC29101	.	0.64	.	.	.	500 g
VS 5940-91	0.9	0.55	0.063	0.34	0.0075	100 g
VS 5939-91	0.7	0.37	.	0.24	0.0025	100 g
KZ 63-86	.	0.023	.	.	.	100 g
KZ 64-86	.	0.0076	.	.	.	100 g
KZ 65-86	.	0.0067	.	.	.	100 g
NCS DC90006	732	.	.	.	.	50 g
NCS DC90005	559	.	.	.	.	50 g
NCS DC90004	446	.	.	.	.	50 g
NCS DC90003	298	.	.	.	.	50 g
NCS DC29106	199	.	.	.	.	50 g
NCS DC29105	138.1	.	.	.	.	50 g
NCS DC90002	112	.	.	.	.	50 g
NCS DC29104	50.3	.	.	.	.	50 g
NCS DC90001	46.9	.	.	.	.	50 g
Number	Ag*	Au*	As%	S%	Sb%	Units

CRM GOLD AND SILVER ORE

minesite carbon material

data listed in mg/kg (ppm) 10 g units

Number	Au	Ag	
GLC302-3	7467	1248	last of stock
GLC323-2	4998	2410	
GLC323-1	4293	1825	
GLC922-1	3239	1581	
GLC323-3	3175	415	
GLC920-2	3161	473	
GLC921-1	2448	171	
GLC314-1	2031	947	last of stock
GLC922-3	1984	993	
GLC922-2	1102	558	
GBC319-4	808	225	
GBC323-2	789	225	
GBC917-2	770	219	
GBC323-1	713	208	
GBC321-2	713	207	
GBC917-3	628	195	
GBC922-3	546	225	
GBC323-3	475	67	
GBC911-3	470	596	last of stock
GBC902-3	285	83	last of stock
GBC314-1	51	38	last of stock
GBC922-2	19	34	
Number	Au	Ag	

RM GOLD AND SILVER ORE

data in mg/kg (ppm) 100 g, last

Number	Au	Ag
CDN GS-1Q	1.24	40.7

RM GOLD AND SILVER ORE

analysis listed in mg/kg (ppm) 1 kg, last

Number	Ag	Au	Au
CDN GS-8C	.	8.59 FA/Inst	8.62 FA/Grav

CRM GOLD AND SILVER ORE - CONTINUED ON THE NEXT PAGES

analysis listed in mass % except * which is mg/kg

OREAS samples list multiple methods, more information upon request

Number	Au*	Ag*	As	Ba	Cu	Fe	Fe_2O_3	Pb	S	SO_3	Sb	Zn	LOI
CAN DS-1	32.59	0.47	0.6960	0.0221	0.00271	(3.0)	.	0.00138	(2.609)	.	(0.0107)	0.0206	(13)
USZ 38-2005	31.28	.	.	0.02	0.43	.	14.71	.	.	.	.	0.006529	2.59
OREAS 12a	11.79	(3)	(0.6795)	(0.0646)	(0.0262)	.	(20.9)	(0.0015)	(5.34)	.	(0.00152)	(0.0129)	(8.91)
USZ 20-98	10.05	3.05	.	.	.	.	1.92	.	.	.	.	.	0.95
KZ 3597-86	8.8	.	3.96	.	.	.	.	.	.	.	.	.	.
KZ 16-2004	8.57	1.35	.	.	0.02	.	.	.	.	.	.	.	.
KZ 62-86	5.7	2.3	.	.	.	.	.	.	.	.	.	.	.
OREAS 19a	5.49	(1.5)	(0.3410)	(0.0469)	(0.0163)	.	(15.9)	(0.00105)	(2.54)	.	(0.00075)	(0.0128)	(4.70)
KZ 61-86	4.4	14.7	0.32	.	0.00044	.	.	.	.	.	0.076	.	.
OREAS 61e 4	4.43	5.27	(0.00173)	(0.0272)	(0.0060)	(2.66)	.	(0.00133)	0.790	.	(<0.0005)	(0.0051)	(7.74)
OREAS 61e A	4.51	5.37	(0.00159)	(0.00344)	(0.0058)	(2.37)	.	(0.00120)	(0.824)	.	(<0.0002)	(0.00469)	.
OREAS 61e F	.	.	.	(0.0277)	.	(2.56)	.	.	(0.760)	.	.	.	.
OREAS 17c	3.04	(0.5)	(0.2055)	(0.0398)	(0.0130)	.	(14.1)	(0.00105)	(1.59)	.	(0.00045)	(0.0139)	(2.72)
OREAS 7Ca	2.54	.	(0.1917)	(0.0683)	.	.	(4.06)	.	.	(0.04)	(0.0161)	(0.0030)	.
UNS AuM	2.5	.	0.08765	BaO:0.066	0.00359	.	5.55	.	.	.	.	.	.
OREAS 16a	1.81	(0.5)	(0.0625)	(0.0365)	(0.0084)	.	(13.9)	(0.0006)	(1.24)	.	(0.0001)	(0.0136)	(1.22)
OREAS 15d	1.559	(0.5)	(0.2445)	(0.0252)	(0.0068)	.	(12.17)	(0.0012)	(0.62)	.	(0.00023)	(0.0107)	(1.28)
KZ 15-2004	1.48	17.4	.	.	0.02	.	.	0.18	.	.	.	0.055	.
OREAS 66a	1.237	18.9	(0.0282)	(0.08085)	0.0121	.	(6.745)	(0.0260)	(1.075)	.	(0.0064)	(0.0091)	(4.16)
USZ 41-2006	0.91	.	.	0.0249	0.75	.	.	0.0027	.	3.87	.	0.0136	5.43
CAN CH-4	0.88	2.1	0.00088	(0.0425)	0.20	5.42	.	.	0.63	.	0.77	0.020	(0.9)
USZ 34-2002	0.79	1.7	0.12	.	0.001484	2.18T	.	0.002	.	.	0.14	0.0025	2.84
US DGPM-1	0.73	.	0.0180	.	.	.	1.92	.	.	.	0.0014	.	.
USZ 35-2002	0.57	1.25	.	.	.	.	.	.	.	.	.	.	.
KZ 17-2004	0.49	1.78	.	.	1.59	3.91	.	.	1.73	.	.	.	.
OREAS 15f	0.334	(<0.5)	(0.0127)	(0.0328)	(0.0061)	.	(12)	(0.0005)	(0.24)	.	(0.00004)	(0.0113)	(0.44)
KZ 6585-93	0.28	11.6	0.075	.	0.064	.	.	0.12	.	.	.	0.60	.
CAN GTS-2a	0.272	(0.64)	0.0124	0.0186	0.00886	7.56	.	.	0.348	.	(0.000133)	0.0208	(9.87)
OREAS H5	0.047	.	.	.	.	.	.	.	.	.	.	.	.
OREAS H5 A	0.057	1.92	0.0000008	(0.0052)	0.0099	0.813	.	0.00361	(0.017)	.	(0.000485)	0.000658	.
OREAS H5 N	(0.053)	.	(0.0000014)	(0.0173)	.	(1.24)	.	.	.	.	(0.000510)	(0.00460)	.
OREAS 24b	<0.003	.	(0.00100)	BaO:0.0819	.	.	6.35	.	0.190	.	.	(0.0113)	2.46
OREAS 24b 4	.	(0.127)	(0.000835)	0.0716	0.00380	4.39	.	0.00231	0.198	.	0.000100	0.0105	.
OREAS 24b A	(0.002)	(0.058)	0.000796	0.0146	0.00364	3.93	.	0.000923	0.200	.	(0.000048)	0.0093	.
OREAS 24b F	.	(2.17)	(0.000974)	0.0739	(0.00351)	4.45	.	(0.00229)	0.203	.	(0.000133)	(0.0103)	.
OREAS 25a	<0.002	.	.	BaO:(0.0151)	.	.	9.77	.	0.044	.	.	(0.00467)	11.70
OREAS 25a 4	.	(0.168)	(0.000994)	0.0147	0.00339	6.60	.	0.00252	0.051	.	0.000067	0.00444	.
OREAS 25a A	(0.001)	(0.035)	(0.000284)	0.0056	0.00249	5.99	.	0.00210	(0.050)	.	(0.000018)	0.00301	.
OREAS 25a F	.	(0.570)	(0.000983)	0.0151	(0.00391)	6.72	.	(0.00244)	(0.046)	.	(0.000102)	0.00468	.
OREAS 24c	<0.001	<0.2	<0.00002	0.0269	0.00486	7.62	.	0.000290	(<0.01)	.	<0.00001	0.0108	.
OREAS 22d	<0.001	<0.1	<0.0001	0.000617	0.000923	0.468	.	0.000072	(<0.01)	.	0.000021	0.000670	.
Number	Au*	Ag*	As	Ba	Cu	Fe	Fe_2O_3	Pb	S	SO_3	Sb	Zn	LOI

CRM GOLD AND SILVER ORE - CONTINUED FROM THE PREVIOUS AND ON TO THE NEXT PAGE

analysis listed in mass % except * which is mg/kg

OREAS samples list multiple methods, more information upon request

Number	Al	Al_2O_3	C	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	Na	Na_2O	P	P_2O_5	Si	SiO_2	Ti	TiO_2
CAN DS-1	4.48	.	(3.126)	(6.248)	.	(1.1)	.	2.76	.	0.0437	.	.	.	0.0340	.	(25.68)	.	.	.
USZ 38-2005	.	2.03	.	.	0.56	.	0.64	.	1.01	.	0.03	.	0.17	.	0.05	.	77.37	.	0.15
OREAS 12a	.	(9.3)	(1.51)	.	(7.95)	.	(0.64)	.	(4.22)	.	(0.78)	.	(0.89)	.	(0.63)	.	(43.0)	.	(0.56)
USZ 20-98	.	1.70	.	.	0.77	.	0.37	.	.	.	0.025	.	0.07	.	0.037	.	92.57	.	0.08
KZ 3597-86	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
KZ 16-2004	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
KZ 62-86	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 19a	.	(11.9)	(0.81)	.	(8.29)	.	(0.68)	.	(5.94)	.	(0.45)	.	(1.96)	.	(0.47)	.	(47.4)	.	(1.17)
KZ 61-86	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 61e 4	(4.50)	.	.	(4.93)	.	(2.00)	.	(0.818)	.	(0.061)	.	(0.656)	.	(0.051)	.	.	.	(0.220)	.
OREAS 61e A	(1.25)	.	.	(4.61)	.	(0.203)	.	(0.723)	.	(0.059)	.	(0.064)	.	(0.048)	.	.	.	(0.042)	.
OREAS 61e F	(4.45)	.	(1.61)	(4.88)	.	(1.99)	.	(0.820)	.	(0.062)	.	(0.705)	.	(0.048)	.	(31.90)	.	(0.231)	.
OREAS 17c	.	(12.8)	(0.56)	.	(8.40)	.	(0.71)	.	(6.63)	.	(0.33)	.	(2.40)	.	(0.41)	.	(49.1)	.	(1.41)
OREAS 7Ca	.	(15.2)	.	.	(<0.01)	.	(4.23)	.	(0.72)	.	(<0.01)	.	(<0.05)	.	(0.08)	.	(71.1)	.	(0.68)
UNS AuM	.	14.06	.	.	4.09	.	1.92	.	1.81	.	0.082	.	3.08	.	.	.	66.15	.	0.39
OREAS 16a	.	(13.15)	(0.28)	.	(8.09)	.	(0.817)	.	(6.79)	.	(0.26)	.	(2.81)	.	(0.4)	.	(49.88)	.	(1.67)
OREAS 15d	.	(13.25)	(0.20)	.	(7.95)	.	(0.743)	.	(6.47)	.	(0.188)	.	(2.74)	.	(0.326)	.	(52.86)	.	(1.61)
KZ 15-2004	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 66a	.	(8.49)	(0.03)	.	(2.32)	.	(0.355)	.	(1.82)	.	(0.04)	.	(0.85)	.	(0.1635)	.	(73.6)	.	(0.83)
USZ 41-2006	.	14.58	.	.	3.14	.	2.81	.	5.52	.	0.12	.	2.36	.	0.27	.	52.09	.	0.93
CAN CH-4	7.73	.	0.12	1.96	.	1.81	.	1.43	.	0.043	.	3.26	.	0.061	.	.	63.10	0.31	.
USZ 34-2002	.	4.79	.	.	2.53	.	1.48	.	0.37	.	0.017	.	0.055	.	0.125	.	84.70	.	0.17
US DGPM-1	.	9.56	.	.	(0.22)	.	2.74	.	(0.56)	.	.	.	.	.	.	.	79.82	.	.
USZ 35-2002	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
KZ 17-2004	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 15f	.	(14.2)	(0.16)	.	(8.59)	.	(0.82)	.	(7.13)	.	(0.18)	.	(3.02)	.	(0.336)	.	(51.0)	.	(1.78)
KZ 6585-93	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CAN GTS-2a	6.96	.	2.011	4.01	.	2.021	.	2.412	.	0.1510	.	0.617	.	0.0892	.	23.65	.	(0.5*)	.
OREAS H5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS H5 A	(2.31)	.	.	(0.014)	.	(0.059)	.	(0.073)	.	0.007	.	(0.135)	.	0.010	.	.	.	(0.040)	.
OREAS H5 N	.	.	.	.	.	(0.500)	.	.	.	.	.	(0.215)	.	.	.	.	.	.	.
OREAS 24b	.	15.15	0.189	.	1.47	.	3.39	.	2.75	.	0.059	.	1.15	.	0.161	.	66.0	.	0.798
OREAS 24b 4	8.02	.	.	1.08	.	2.81	.	1.65	.	0.044	.	0.846	.	0.069	.	.	.	0.468	.
OREAS 24b A	3.15	.	.	0.461	.	1.17	.	1.36	.	0.035	.	0.108	.	(0.062)	.	.	.	0.198	.
OREAS 24b F	7.81	.	.	1.06	.	2.74	.	1.62	.	0.046	.	0.824	.	(0.073)	.	31.12	.	0.481	.
OREAS 25a	.	18.24	1.56	.	0.438	.	0.599	.	(0.579)	.	0.063	.	0.191	.	0.117	.	56.7	.	1.93
OREAS 25a 4	8.87	.	.	0.309	.	0.482	.	0.327	.	0.047	.	0.134	.	0.048	.	.	.	0.977	.
OREAS 25a A	5.85	.	.	0.150	.	0.131	.	(0.193)	.	0.042	.	(0.040)	.	0.037	.	.	.	(0.036)	.
OREAS 25a F	9.25	.	.	0.302	.	0.493	.	0.324	.	0.049	.	(0.126)	.	0.049	.	25.85	.	1.14	.
OREAS 24c	7.45	.	.	5.86	.	0.735	.	3.93	.	0.108	.	2.42	.	0.156	.	.	.	1.06	.
OREAS 22d	0.132	.	.	(0.010)	.	(0.008)	.	(0.009)	.	0.011	.	(0.009)	.	(0.001)	.	.	.	0.021	.
Number	Al	Al_2O_3	C	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	Na	Na_2O	P	P_2O_5	Si	SiO_2	Ti	TiO_2

CRM GOLD AND SILVER ORE - CONTINUED FROM THE PREVIOUS AND ON TO THE NEXT PAGE

analysis listed in mg/kg except % which is mass % OREAS samples list multiple methods, more information upon request

Number	B	Be	Bi	Cd	Ce	Co	Cr	Cr_2O_3	Cs	Dy	Er	Eu	Ga	Gd	Ge	Hf	Hg
CAN DS-1	.	(0.819)	(0.1)	(0.98)	(40)	9.5	(59)	.	(7)	.	.	(1)	(10)	.	.	(4)	82
USZ 38-2005	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 12a	.	(0.8)	(0.3)	.	(21.7)	(31)	.	.	(4)	(4)	(2.0)	(1.1)	(13.3)	(4.4)	.	(1)	.
USZ 20-98	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
KZ 3597-86	1.08%	.	.	.	.	0.17%	.	.	.	.	.	.	.	.	.	.	.
KZ 16-2004	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
KZ 62-86	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 19a	.	(1.0)	(0.2)	.	(29.6)	(40.5)	.	.	(2)	(4)	(2.1)	(1.5)	(17)	(4.8)	.	(2.5)	.
KZ 61-86	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 61e 4	.	(0.89)	(<2)	(<0.5)	.	(9.29)	(24.4)	.	.	.	.	.	(10.0)	.	.	.	.
OREAS 61e A	(<10)	(0.58)	(<2)	(1.15)	.	(8.83)	(21.6)	.	.	.	.	.	(<10)	.	.	.	(0.70)
OREAS 61e F	.	.	.	.	(18.7)	.	(<70)	.	(5.58)	(1.48)	(0.89)	(0.58)	(9.75)	(1.74)	.	(1.5)	.
OREAS 17c	.	(1.0)	(0.1)	.	(32.7)	(44)	.	.	(2)	(5)	(2.3)	(1.6)	(18.5)	(5)	.	(3)	.
OREAS 7Ca	.	.	.	.	(90)	.	(502)	.	(10)	.	.	(1.4)	.	.	.	(4.4)	.
UNS AuM	.	.	.	.	.	.	47	.	.	.	.	.	12.9	.	.	.	.
OREAS 16a	.	(0.7)	.	.	(36.4)	(44)	.	.	(1.6)	(4.6)	(2.20)	(1.72)	(18.1)	(5.2)	.	(3.6)	.
OREAS 15d	.	(0.9)	(0.4)	.	(34.1)	(43)	.	.	(0.8)	(4.3)	(2.1)	(1.6)	(17.9)	(4.9)	.	(3.2)	.
KZ 15-2004	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 66a	.	(0.6)	(10.2)	(1)	(33.6)	(18)	.	.	(0.5)	(2.15)	(1.23)	(0.98)	(17.4)	(2.9)	.	(1.9)	.
USZ 41-2006	.	.	.	.	.	24.3	99.3	.	.	.	.	.	.	.	.	.	.
CAN CH-4	.	.	.	1.14	.	26	114	.	.	.	.	.	.	.	.	.	.
USZ 34-2002	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
US DGPM-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
USZ 35-2002	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
KZ 17-2004	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 15f	.	(1.3)	.	.	(38.8)	(47)	.	.	(1.1)	(5.18)	(2.48)	(1.98)	(18.8)	(5.9)	.	(4.5)	.
KZ 6585-93	.	.	.	96	.	.	.	.	.	.	.	.	.	.	.	.	.
CAN GTS-2a	.	.	.	(0.58)	.	22.1	(270)	.	.	.	.	.	.	.	.	.	.
OREAS H5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS H5 A	(23.0)	(<1)	5.44	1.28	.	3.68	31.1	.	.	.	.	.	(11.4)	.	(<0.1)	.	(0.14)
OREAS H5 N	.	.	Br:(4.99)	.	(76)	(4.64)	(108)	.	(1.94)	.	.	(0.93)	.	.	.	(57)	(<1)
OREAS 24b	.	.	.	.	.	(28.3)	.	201	.	.	.	.	.	.	.	.	.
OREAS 24b 4	.	2.92	0.68	(0.049)	84	16.9	118	.	10.7	(4.47)	(2.54)	(1.36)	20.1	(6.02)	(0.83)	3.90	.
OREAS 24b A	(6.23)	(1.65)	0.73	(0.046)	(61)	15.7	106	.	9.15	(2.65)	(1.21)	(0.66)	10.8	(3.96)	(0.26)	(0.52)	.
OREAS 24b F	(69)	2.95	(1.03)	.	86	16.9	142	.	10.5	5.83	3.41	1.39	20.2	6.27	(1.64)	6.15	.
OREAS 25a	.	.	.	.	.	(10.0)	.	(167)	.	.	.	.	.	.	.	.	.
OREAS 25a 4	.	1.02	0.35	(0.041)	48.9	8.20	115	.	6.46	(2.67)	(1.50)	(0.64	25.9	(2.91)	(0.22)	4.53	.
OREAS 25a A	(5.92)	(0.65)	0.30	(0.041)	33.1	5.72	73	.	4.45	(1.15)	(0.50)	(0.43)	20.6	(1.74)	(0.13)	(0.47)	(0.053)
OREAS 25a F	(39.2)	(0.94)	(0.40)	.	51	8.05	125	.	6.36	4.31	2.76	0.80	25.4	3.79	(2.02)	11.1	.
OREAS 24c	.	1.05	<0.1	<0.1	(40.2)	42.7	193	.	(0.80)	(4.82)	(2.35)	(1.94)	(20.7)	(5.95)	(0.43)	3.75	.
OREAS 22d	.	(0.066)	<0.1	<0.1	(2.43)	0.85	(11.9)	.	(0.10)	(0.15)	(<0.1)	(<0.05)	(0.26)	(0.20)	(0.065)	0.22	.
Number	B	Be	Bi	Cd	Ce	Co	Cr	Cr_2O_3	Cs	Dy	Er	Eu	Ga	Gd	Ge	Hf	Hg

CRM GOLD AND SILVER ORE - CONTINUED FROM THE PREVIOUS AND ON TO THE NEXT PAGE

analysis listed in mg/kg except % which is mass % OREAS samples list multiple methods, more information upon request

Number	Ho	In	La	Li	Lu	Mo	Nb	Nd	Ni	Pd	Pr	Pt	Rb	Re	Sc	Se	Sm
CAN DS-1	.	(0.5)	(20)	(20)	.	.	.	.	48.7	.	.	.	.	.	.	.	.
USZ 38-2005	.	.	.	.	.	0.11%	.	.	28.27	.	.	.	.	.	.	.	.
OREAS 12a	(0.73)	(0.05)	(17.7)	(19.5)	(0.28)	(5.5)	(3.25)	(19.5)	(71.5)	.	(4.56)	.	(20.5)	.	(20)	.	(4.18)
USZ 20-98	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
KZ 3597-86	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
KZ 16-2004	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
KZ 62-86	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 19a	(0.8)	(0.05)	(17.7)	(13.0)	(0.27)	(4.0)	(10)	(19.8)	(106)	.	(4.78)	.	(19.5)	.	(20)	.	(4.68)
KZ 61-86	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 61e 4	.	.	(10.0)	(50)	.	(5.67)	.	.	(8.37)	.	.	(0.004)	.	.	(10.0)	.	.
OREAS 61e A	.	.	(15.0)	.	.	(5.67)	.	.	(9.14)	.	.	.	.	.	(6.00)	(0.60)	.
OREAS 61e F	(0.33)	.	(8.95)	.	(0.14)	.	(1.80)	(9.75)	.	.	(2.33)	.	(91)	.	.	.	(2.03)
OREAS 17c	(0.82)	(0.05)	(18.1)	(10.3)	(0.26)	(4.3)	(13)	(19.7)	(136)	.	(4.84)	.	(21.5)	.	(20.5)	.	(4.83)
OREAS 7Ca	.	.	(50)	.	.	.	.	.	.	.	.	.	(168)	.	(14)	.	(10)
UNS AuM	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 16a	(0.86)	(0.05)	(19.3)	(8.0)	(0.25)	(3.2)	(18.8)	(20.6)	(157)	.	(5.19)	.	(26.1)	.	(18.3)	.	(5.2)
OREAS 15d	(0.81)	(0.06)	(16.9)	(8.3)	(0.23)	(2)	(17.8)	(18.2)	(147)	.	(4.29)	.	(21.1)	.	(21)	.	(4.7)
KZ 15-2004	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 66a	(0.4)	(0.48)	(17.6)	(14.8)	(0.21)	(5.5)	(6.8)	(16.0)	(59)	.	(4)	.	(8)	.	(9)	.	(3.35)
USZ 41-2006	.	.	.	.	.	51.8	.	.	25.4	.	.	.	.	.	.	.	.
CAN CH-4	.	.	.	.	.	.	.	.	51	.	.	.	.	.	.	2.1	.
USZ 34-2002	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
US DGPM-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
USZ 35-2002	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
KZ 17-2004	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS 15f	(0.91)	(0.06)	(17.9)	(8.8)	(0.24)	(4.5)	(20.8)	(21.6)	(157)	.	(4.82)	.	(22.4)	.	(18.5)	.	(5.28)
KZ 6585-93	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CAN GTS-2a	.	.	.	.	.	.	.	.	77.1	.	.	.	.	.	.	.	.
OREAS H5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OREAS H5 A	.	.	(27.5)	(2.00)	.	7.22	(0.75)	.	11.9	.	.	.	.	.	(2.50)	(1.86)	.
OREAS H5 N	.	Ir:(<0.005)	(52)	.	(0.69)	(13.7)	.	(32.4)	(28.1)	.	.	.	(58)	.	(9.11)	(12.4)	(5.28)
OREAS 24b	.	.	.	.	.	.	.	.	(59)	<0.001	.	<0.001	.	.	.	.	.
OREAS 24b 4	(0.80)	(0.077)	42.4	52	(0.32)	4.03	14.6	(36.2)	60	.	(9.86)	.	164	(0.002)	15.3	(0.66)	(7.06)
OREAS 24b A	(0.46)	(0.048)	(29.2)	45.6	(0.20)	3.86	(0.31)	(24.6)	57	(<0.01)	(6.87)	(0.001)	114	(<0.001)	9.51	(0.42)	(4.68)
OREAS 24b F	1.17	.	44.0	52	0.49	(4.91)	16.0	38.7	61	.	10.2	.	161	(<0.1)	14.1	.	7.17
OREAS 25a	.	.	.	.	.	.	.	.	(31.2)	<0.001	.	<0.001	.	.	.	.	.
OREAS 25a 4	(0.46)	(0.091)	21.8	36.7	(0.23)	2.55	22.4	(17.0)	45.8	.	(4.71)	.	61	.	13.7	(2.86)	(3.41)
OREAS 25a A	(0.20)	(0.081)	(13.0)	(23.7)	(0.057)	(1.36)	(0.52)	(11.7)	26.9	(<0.01)	(3.35)	(0.004)	(31.4)	(<0.05)	8.64	(0.87)	(2.26)
OREAS 25a F	0.92	.	23.3	(35.1)	0.45	(2.99)	26.5	20.0	(55)	.	5.33	.	60	(<0.1)	13.5	.	3.90
OREAS 24c	(0.90)	(0.056)	(19.7)	8.32	(0.27)	2.49	23.8	(20.7)	138	(<0.005)	(5.28)	(<0.005)	21.9	(<0.002)	21.6	(1.00)	(5.55)
OREAS 22d	(<0.05)	(<0.005)	(1.20)	14.2	(0.013)	2.36	0.88	(1.03)	4.38	(<0.005)	(0.32)	(<0.005)	0.54	(<0.002)	(0.20)	(<1)	(0.22)
Number	Ho	In	La	Li	Lu	Mo	Nb	Nd	Ni	Pd	Pr	Pt	Rb	Re	Sc	Se	Sm

CRM GOLD AND SILVER ORE - CONTINUED FROM THE PREVIOUS PAGES

analysis listed in mg/kg except % which is mass % OREAS samples list multiple methods, more information upon request

Number	Sn	Sr	Ta	Tb	Te	Th	Tl	Tm	U	W	Y	Yb	Zr	Units	Other
CAN DS-1	.	.	.	.	.	.	20	.	.	.	.	.	.	400 g	
USZ 38-2005	.	88.71	.	.	.	.	.	.	.	0.01%	.	.	.	250 g	
OREAS 12a	(1)	(136)	(0.3)	(0.64)	(0.4)	(4.4)	.	.	(1.85)	(6.5)	(20.2)	(1.88)	(40.5)	60 g	
USZ 20-98	.	.	.	.	.	.	.	.	.	.	.	.	.	250 g	last of stock
KZ 3597-86	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	last of stock
KZ 16-2004	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
KZ 62-86	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
OREAS 19a	(1)	(279)	(0.65)	(0.7)	(0.2)	(3.7)	.	.	(1.3)	(3.5)	(19.9)	(1.75)	(99)	60 g	
KZ 61-86	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
OREAS 61e 4	.	(245)	.	.	.	(<20)	(<10)	.	(<10)	(<10)	.	.	.	Au/Pd/Pt FA, others 4-acid	
OREAS 61e A	.	(113)	.	.	(2.21)	(<20)	(<10)	.	(<10)	(<10)	.	.	.	60 or 500g, Aqua Regia	
OREAS 61e F	(<1)	(245)	(0.10)	(0.27)	.	(2.31)	(0.85)	(0.14)	(0.61)	(3)	(8.70)	(0.83)	(54)	Borate Fusion, C/S combust	
OREAS 17c	(1)	(333)	(0.85)	(0.76)	.	(3.5)	.	.	(1.05)	(3.8)	(20.5)	(1.8)	(123)	60 g	
OREAS 7Ca	.	.	.	.	.	(16)	.	.	.	(18)	.	(2.8)	.	chips 500g Br:(5ppm) H_2O:(3.44+)	
UNS AuM	.	187.7	.	.	.	.	.	.	.	.	14.2	.	81	200 g	
OREAS 16a	(3)	(369)	(1.1)	(0.8)	.	(3.2)	.	.	(0.9)	(1)	(22.8)	(1.82)	(161)	60 g	
OREAS 15d	(1)	(357)	(1)	(0.75)	(0.3)	(2.9)	.	.	(0.8)	(1.5)	(20.2)	(1.73)	(120)	60 g	
KZ 15-2004	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
OREAS 66a	(3.50)	(488)	(0.4)	(0.40)	(9.6)	(4.1)	.	.	(1.4)	(10.5)	(10.3)	(1.3)	(75)	60 g	
USZ 41-2006	.	259	.	.	.	.	.	.	.	.	.	.	78.3	100 or 250 g	
CAN CH-4	.	(209)	.	.	.	.	.	.	.	.	.	.	.	200 g	
USZ 34-2002	.	.	.	.	.	.	.	.	.	.	.	.	.	250 g	H_2O: 0.10-
US DGPM-1	.	.	.	.	.	.	.	.	.	(76)	.	.	.	200 g	last of stock
USZ 35-2002	.	.	.	.	.	.	.	.	.	.	.	.	.	250 g	
KZ 17-2004	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
OREAS 15f	(2)	(382)	(1.1)	(0.88)	.	(3.05)	.	.	(0.9)	(0.5)	(23.2)	(1.9)	(166)	60 g	
KZ 6585-93	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
CAN GTS-2a	.	92.8	.	.	.	1.244	.	.	.	.	.	.	.	350 g	
OREAS H5	.	.	.	.	.	.	.	.	.	.	.	.	.	60 g	fire assay
OREAS H5 A	(<10)	(6.89)	(<10)	.	(2.37)	(19.1)	(0.71)	.	.	(<5)	(5.00)	.	(47.8)	Aqua regia	V: 0.00350%
OREAS H5 N	(<100)	.	(2.83)	(0.72)	.	(29.0)	.	.	(7.60)	(8.35)	.	(4.33)	(2085)	Neutron activation analysis	
OREAS 24b	.	(134)	.	.	.	.	.	.	.	.	.	.	.	60 g last of stock Cl:(<10ppm)	
OREAS 24b 4	4.25	124	1.23	(0.87)	.	16.4	0.86	(0.31)	3.06	3.64	19.9	(2.17)	134	" 4 acid digestion, **GRANODIORITE**	
OREAS 24b A	2.26	(29.0)	.	(0.54)	.	14.3	0.66	(0.17)	1.74	(1.19)	12.3	(1.15)	24.5	" aqua regia	
OREAS 24b F	4.65	125	1.32	0.98	.	16.5	0.91	0.50	3.31	4.13	32.5	3.24	213	" fusion ICP-OES/MS	
OREAS 25a	.	(56)	.	.	.	.	.	.	.	.	.	.	(135)	10 g 60 g or 1 kg Cl:(<10ppm)	
OREAS 25a 4	4.06	48.5	1.60	(0.41)	(0.10)	15.8	0.35	(0.3)	2.94	2.10	12.3	(1.48)	(159)	" 4 acid digestion, **SOIL**	
OREAS 25a A	2.70	17.3	(0.099)	(0.24)	.	10.7	0.20	(0.062)	1.49	.	4.56	(0.41)	(19.0)	" aqua regia	
OREAS 25a F	4.83	49.4	1.99	0.66	.	16.4	(0.30)	0.43	3.51	2.89	25.1	2.89	398	" fusion ICP-OES/MS	
OREAS 24c	1.51	442	1.48	(0.90)	(<0.05)	3.08	(0.064)	(0.31)	0.76	0.53	22.3	(1.88)	143	10 g 60 g or 1 kg Basalt	V: 161
OREAS 22d	0.61	(1.14)	(0.036)	(<0.05)	(<0.05)	0.67	(<0.02)	(<0.05)	0.18	0.21	0.69	(<0.1)	7.02	10 g	V: 2.63 last then 22e
Number	Sn	Sr	Ta	Tb	Te	Th	Tl	Tm	U	W	Y	Yb	Zr	Units	Other

GRANITE WITH EXTENSIVE ANALYSIS

analysis listed in mass % IAG: RM all others: CRM

Number	SiO_2	Al_2O_3	CO_2	CaO	F	FeO	Fe_2O_3	$T.Fe_2O_3$	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	TiO_2	LOI
~~JG 2~~	~~76.03~~	~~12.47~~	~~.~~	~~0.70~~	~~(0.0972)~~	~~0.57~~	~~0.33~~	~~0.97~~	~~+0.33 -0.12~~	~~4.71~~	~~0.037~~	~~0.016~~	~~3.54~~	~~0.002~~	~~0.044~~	~~.~~
SARM 1	75.70	12.08	(0.10)	0.78	0.42	1.30	(0.6)	2.00	0.49	4.99	(0.06)	.	3.36	.	(0.09)	.
VS 3333-85	74.76	10.64	(0.1)	0.32	0.062	1.61	4.50	.	(0.30)	4.64	0.10	0.120	4.24	0.024	0.26	.
IAG OU-3	74.09	11.10	1.913	0.2	0.1100	3.255	.	3.8341	.	4.55	.	0.090	3.678	.	0.224	1.815
GUW GM	73.42	13.55	0.28	1.07	0.067	1.13	2.01	.	0.35	4.76	0.37	0.043	3.78	0.062	2.12	.
USZ 47-2008	72.37	14.07	.	1.15	.	1.81	2.44	.	.	4.68	0.38	0.06	3.63	0.13	0.30	0.64
USZ 28-99	71.61	16.13	.	0.39	1.25	0.29		0.51	-(0.05)	3.52	(0.29)	0.13	5.25	0.028	(0.03)	1.14
SARM 48	67.11	11.24	.	8.90	.	(0.2)	0.58	.	.	4.26	0.18	0.02	3.22	(0.09)	0.10	.
NCS DC73376	66.27	16.33	0.35	2.66	0.0670	(1.6)	.	3.12	(1.0)	2.60	1.63	.	5.3	.	.	1.28

continued analysis listed in mg/kg except % which is mass % and * which is ng/g

Number	Ag	Al%	As	B	Ba	Be	Bi	Ca%	Cd	Ce	Cl	Co	Cr	Cs	Cs_2O%	Cu	Dy
~~JG 2~~	~~(0.019)~~	~~6.60~~	~~(0.68)~~	~~(1.78)~~	~~81.0~~	~~3.26~~	~~(0.64)~~	~~0.50~~	~~(0.004)~~	~~48.3~~	~~.~~	~~3.62~~	~~6.37~~	~~6.79~~	~~.~~	~~0.49~~	~~10.5~~
SARM 1	.	.	.	.	(120)	.	.	.	.	195	.	.	12	.	.	12	(17)
VS 3333-85	(0.06)	.	(4)	11	90	5	.	.	.	90	.	1.3	3.1	4.5	.	12	(10)
IAG OU-3	.	.	3.3793	.	28	10.94	.	.	0.38	196.3	.	.	18.61	0.66	.	3.3	18.87
GUW GM	(0.09)	.	4.1	11	340	(4.8)	.	.	.	65	.	3.7	11	8.1	.	13	(5.4)
USZ 47-2008	.	.	2.28	.	350	8.63	1.03	.	.	64.38	.	2.71	182	17.02	.	7.36	4.42
USZ 28-99	.	.	(3)	.	.	.	.	.	.	(25)	.	.	(130)	.	0.012	8	.
SARM 48	.	.	.	.	(290)	.	.	.	.	(850)	.	.	23	.	.	(10)	.
NCS DC73376	0.03	.	(0.25)	15	1140	1.7	0.096	.	(0.06)	48	(120)	7.8	24	2.6	.	(3.1)	1.52

Number	Er	Eu	Fe%	Ga	Gd	Ge	Hf	Hg	Ho	In	K%	La	Li	Li_2O%	Lu	Mg%	Mn%
~~JG 2~~	~~6.04~~	~~0.10~~	~~0.68~~	~~18.6~~	~~0.81~~	~~(1.70)~~	~~4.73~~	~~(0.0033)~~	~~1.67~~	~~.~~	~~3.91~~	~~19.9~~	~~42.2~~	~~.~~	~~1.22~~	~~0.02~~	~~0.012~~
SARM 1	.	0.35	.	27	(14)	.	.	.	.	.	.	109	(12)	.	(2)	.	0.0160
VS 3333-85	(6)	0.4	.	27	.	2.2	12	.	.	.	.	45	52	.	0.9	.	.
IAG OU-3	11.44	1.152	.	32.1	18.073	1.5	22.631	.	4.011	.	.	94.64	1.41	.	1.628	.	.
GUW GM	(2.2)	0.60	.	15	(5.2)	(1.6)	5.1	(0.0033)	(1.0)	.	.	41	50	.	0.40	.	.
USZ 47-2008	2.37	0.58	.	22.80	4.95	1.50	4.75	.	0.85	.	.	29.59	124	.	0.35	.	.
USZ 28-99	.	.	.	.	.	.	.	.	.	.	.	(15)	.	0.37	.	.	.
SARM 48	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
NCS DC73376	0.76	1.0	.	18.2	2.4	0.93	3.3	0.0035	0.27	(0.03)	.	25	24.7	.	0.11	.	0.0430

Number	Mo	Na%	Nb	Nd	Ni	P%	Pb	Pr	Rb	Rb_2O%	S	Sb	Sc	Se	Si%	Sm	Sn	Sr
~~JG 2~~	~~0.37~~	~~2.63~~	~~14.7~~	~~26.4~~	~~(4.35)~~	~~0.001~~	~~31.5~~	~~6.28~~	~~301~~	~~.~~	~~(7.0)~~	~~(0.057)~~	~~2.42~~	~~.~~	~~35.91~~	~~7.78~~	~~3.00~~	~~17.9~~
SARM 1	.	.	53	72	(8)	.	40	.	325	.	.	.	.	.	.	15.8	.	10
VS 3333-85	1.7	.	17	50	6	.	10	.	140	.	(160)	(0.5)	4.6	.	.	10	5	8
IAG OU-3	1.975	.	80.2	87	.	.	36	22.7	171	.	.	0.3	.	.	.	18.71	11.45	11.2
GUW GM	1.1	.	18	30	6.8	.	30	(7.2)	260	.	.	(0.51)	4.8	.	.	4.9	4.4	133
USZ 47-2008	3.06	.	15.22	27.10	5.76	.	24.81	7.27	275	.	.	0.19	4.36	.	.	5.54	13.30	111
USZ 28-99	.	.	71	.	10	.	64	.	.	0.24	.	.	(7)	.	.	.	.	.
SARM 48	(5)	.	202	.	.	.	135	.	.	.	.	.	.	.	.	.	.	29
NCS DC73376	(0.27)	.	4.5	21	13	0.0570	7.6	5.8	57	.	(50)	0.063	5.0	0.019	.	3.3	0.8	690

Number	Ta	Tb	Te	Th	Ti%	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Units
~~JG 2~~	~~2.76~~	~~1.62~~	~~.~~	~~1.62~~	~~0.026~~	~~1.55~~	~~1.16~~	~~11.3~~	~~3.78~~	~~23.0~~	~~86.5~~	~~6.85~~	~~13.6~~	~~97.6~~	~~20 g~~
SARM 1	.	3.0	.	51	0.0540	.	(2)	(15)	(2)	.	143	14.2	50	300	100 g
VS 3333-85	1.1	0.4	.	80	.	.	.	1.8	6	(1.1)	60	7	140	470	100 g
IAG OU-3	5.748	3.081	.	22.845	.	0.735	1.731	5.5396	.	.	113.1	11.3	149.22	942	~35 g
GUW GM	1.7	0.7	.	36	.	.	.	6.4	11	1.6	26	3.1	34	149	50 g
USZ 47-2008	2.56	0.79	.	19.35	.	1.72	0.37	5.44	14.03	0.56	25.19	2.36	54.59	169	100 g
USZ 28-99	54	.	.	.	.	.	.	.	.	.	.	.	0.086%	46	100 g
SARM 48	.	.	.	113	.	.	.	.	(8)	.	436	.	53	300	100 g
NCS DC73376	(0.34)	0.29	.	1.9	0.1800	(0.20)	0.11	(0.4)	45	0.38	7.3	0.69	47	(100)	70 g

CRM GRANODIORITE WITH EXTENSIVE ANALYSIS

analysis listed in mass %

Number	SiO_2	Al_2O_3	Al	CO_2	CaO	Fe	FeO	Fe_2O_3	T.Fe_2O_3	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	Si	TiO_2
JG-1a	72.30	14.30	7.57	.	2.13	1.40	1.36	0.51	2.00	+0.59 -0.12	3.96	0.69	0.057	3.39	0.083	33.80	0.25
JG-1	72.30	14.24	7.54	.	2.20	1.52	1.61	0.38	2.18	+0.54 -0.07	3.98	0.74	0.063	3.38	0.099	33.80	0.26
JG-3	67.29	15.48	8.19	.	3.69	2.58	1.83	1.62	3.69	+0.67 -0.17	2.64	1.79	0.071	3.96	0.122	31.45	0.48
~~US GSP 2~~	~~66.6~~	~~14.9~~	~~7.80~~	~~.~~	~~2.10~~	~~3.43~~	~~.~~	~~.~~	~~4.90~~	~~.~~	~~5.30~~	~~0.96~~	~~.~~	~~2.70~~	~~0.29~~	~~31.1~~	~~0.66~~
VS 2125-81	64.08	15.35	.	0.14	3.93	.	2.87	5.23	.	.	3.98	1.87	0.160	3.25	0.228	.	0.517
GBW 07111	59.68	16.56	.	0.15	4.72	.	3.08	2.64	.	0.88	3.50	2.81	0.094	4.05	0.34	.	0.77

continued analysis listed in mg/kg except % which is mass % and * which is ppb

Number	Ag	As	Au*	B	Ba%	Be	Bi	Br	C%	Ca%	Cd	Ce	Cl%	Co	Cr	Cs	Cu
JG-1a	(0.023)	(0.43)	0.21	3.95	0.0470	3.16	(0.43)	.	(0.0295)	1.52	(0.026)	45.0	(0.0065)	5.90	17.6	10.6	1.67
JG-1	0.034	0.33	0.11	6.87	0.0466	3.15	0.50	(0.068)	(0.0216)	1.57	0.040	45.8	0.00581	4.06	53.2	10.1	2.52
JG-3	(0.029)	(0.37)	0.17	(2.15)	0.0466	(1.60)	(0.05)	.	(0.0120)	2.64	(0.054)	40.3	(0.0156)	11.7	22.4	1.78	6.81
~~US GSP 2~~	~~.~~	~~.~~	~~.~~	~~.~~	~~0.1340~~	~~(1.5)~~	~~.~~	~~.~~	~~.~~	~~1.50~~	~~.~~	~~410~~	~~.~~	~~7.3~~	~~20~~	~~(1.2)~~	~~43~~
VS 2125-81	.	.	.	27	0.14	3.7	.	.	.	.	.	.	.	13	37	.	57
GBW 07111	0.066	0.4	.	3.92	0.1900	2.11	0.05	(0.34)	(0.057 Org)	.	0.08	112	0.023	15.6	37.6	0.97	8.8

Number	Dy	Er	Eu	F%	Ga	Gd	Ge	Hf	Hg*	Ho	I*	In	Ir*	K%	La	Li	Lu
JG-1a	4.44	2.57	0.70	0.0439	16.5	4.08	(1.5)	3.59	(4.1)	0.82	.	(0.025)	.	3.29	21.3	79.5	0.44
JG-1	4.14	2.16	0.73	0.0498	17.8	4.28	1.44	3.56	16.5	0.81	(0.012)	(0.044)	.	3.30	22.4	86.6	0.39
JG-3	2.59	1.52	0.90	(0.0317)	17.1	2.92	(1.06)	4.29	(2.4)	0.38	.	.	(0.0016)	2.19	20.6	20.9	0.26
~~US GSP 2~~	~~(6.1)~~	~~(2.2)~~	~~2.3~~	~~(0.3000)~~	~~22~~	~~(12)~~	~~.~~	~~(14)~~	~~.~~	~~(1.0)~~	~~.~~	~~.~~	~~.~~	~~4.48~~	~~180~~	~~(36)~~	~~(0.23)~~
VS 2125-81	.	.	.	.	22	.	1.8	.	.	.	.	.	.	.	.	20	.
GBW 07111	3.20	1.57	1.91	0.084	20.8	5.09	1.00	5.2	35	0.60	(78)	0.08	.	.	60.5	16.2	0.24

Number	Mg%	Mn%	Mo	Na%	Nb	Nd	Ni	P%	Pb%	Pd*	Pr	Rb%	S%	Sb	Sc	Se	Sm
JG-1a	0.42	0.044	0.45	2.51	11.4	20.4	6.91	0.036	0.00264	(<0.2)	5.63	0.0178	(0.0011)	(0.048)	6.21	.	4.53
JG-1	0.45	0.049	1.75	2.51	12.4	19.3	7.47	0.043	0.00254	(<0.2)	4.83	0.0182	0.00109	0.13	6.53	0.0030	4.62
JG-3	1.08	0.055	0.45	2.94	5.88	17.2	14.3	0.053	0.00117	(<0.2)	4.70	0.00673	(0.0055)	(0.08)	8.76	.	3.39
~~US GSP 2~~	~~0.50~~	~~0.0320~~	~~(2.1)~~	~~2.06~~	~~27~~	~~200~~	~~17~~	~~0.13~~	~~0.0042~~	~~.~~	~~(51)~~	~~0.0245~~	~~.~~	~~.~~	~~6.3~~	~~.~~	~~27~~
VS 2125-81	.	.	3.22	.	8.8	.	15	.	0.016	.	.	0.016	0.019	.	13	.	.
GBW 07111	.	.	0.47	.	10.6	48.1	24.4	.	0.00198	.	13.2	0.00701	0.011	0.06	10.3	0.03	7.74

Number	Sn	Sr%	Ta	Tb	Te	Th	Ti%	Tl	Tm	U	V	W	Y	Yb	Zn%	Zr%	Units
JG-1a	4.47	0.0187	1.90	0.81	.	12.8	0.15	0.98	0.38	4.69	22.7	12.4	32.1	2.70	0.00365	0.0118	20 g
JG-1	3.60	0.0184	1.79	0.78	.	13.2	0.16	1.03	0.41	3.47	25.2	(1.58)	30.6	2.47	0.00411	0.0111	20 g
JG-3	1.40	0.0379	0.70	0.46	.	8.28	0.29	(0.40)	0.24	2.21	70.1	(14.1)	17.3	1.77	0.00465	0.0144	100 g
~~US GSP-2~~	~~.~~	~~0.0240~~	~~.~~	~~.~~	~~.~~	~~105~~	~~0.40~~	~~(1.1)~~	~~(0.29)~~	~~2.40~~	~~52~~	~~.~~	~~28~~	~~1.6~~	~~0.0120~~	~~0.0550~~	~~50 g~~
VS 2125-81	8.0	0.048	.	.	.	.	.	.	.	.	90	.	.	.	0.012	0.021	40 g
GBW 07111	1.44	0.1198	0.62	0.68	0.011	10.9	.	0.39	0.26	1.40	104	0.19	15.5	1.56	0.00854	0.0224	50 g

GRAPHITE

analysis listed in mass % Graph = Graphitic, T = Total CDN: RM, all others: CRM CDN: 10 g GGC: 10 g NCS: 50 g USZ: 100 g

Number	Al_2O_3	C.Graph	T.C	CO_2	CaO	Fe_2O_3	H_2O+	K_2O	MgO	MnO	Na_2O	Ni	P_2O_5	Rb	S	SiO_2	TiO_2	Zn	Zr	LOI
NCS DC60121	5.60	**76.50**	.	0.28	0.74	1.48T	1.98	0.99	0.50	0.022	0.23	.	0.16	.	0.14	10.34	0.55	Volatile:2.72	Ash:20.78	
USZ 32-2000	9.33	**(12.0)**	14.43	4.10	7.05	3.48	.	2.54	1.94	0.03	0.47	0.007	.	0.014	.	52.20	0.57	0.018	0.012	22.21
USZ 33-2000	8.46	**(11.34)**	13.38	2.45	.	3.61	.	2.09	.	0.07	0.51	.	.	.	.	52.84	0.49	.	.	17.0
NCS DC60120	13.03	**9.91**	.	0.67	5.34	6.99T	2.80	2.17	5.35	0.054	1.56	.	0.14	.	2.59	49.34	0.64	.	.	.
GGC-14	.	**9.23**	9.24	.	.	.	.	.	.	.	.	.	.	.	1.33	.	.	.	.	.
GGC-13	.	**7.99**	8.02	.	.	.	.	.	.	.	.	.	.	.	2.73	.	.	.	.	.
GGC-12	.	**5.27**	5.30	.	.	.	.	.	.	.	.	.	.	.	1.45	.	.	.	.	.
GGC-11	.	**4.98**	5.06	.	.	.	.	.	.	.	.	.	.	.	3.73	.	.	.	.	last
GGC-10	.	**4.79**	5.22	.	.	.	.	.	.	.	.	.	.	.	4.40	.	.	.	.	last
CDN GR-1	(8.6)	**3.12**	.	.	(6.3)	(4.2)	.	(3.0)	(2.4)	(<0.1)	(0.3)	.	.	.	(1.0)	(65.3)	(0.4)	.	last	(6.8)
NCS DC60119	12.93	**2.91**	.	3.60	9.37	6.73T	2.60	2.54	6.10	0.084	1.60	.	0.13	.	1.18	49.84	0.57	.	.	.
GGC-09	.	**2.41**	2.95	.	.	.	.	.	.	.	.	.	.	.	4.59	.	.	.	.	last
GGC-08	.	**0.39**	1.03	.	.	.	.	.	.	.	.	.	.	.	1.57	.	.	.	.	.
GGC-07	.	**0.13**	0.56	.	.	.	.	.	.	.	.	.	.	.	0.51	.	.	.	.	.

CRM GRAPHITE ORE

analysis listed in mass % 50 g units

Number	Al_2O_3	Ash	CaO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	S	SiO_2	TiO_2	Volatile
NCS DC28120	10.93	95.62	11.81	5.34	2.39	8.79	0.048	1.50	0.083	1.06	52.73	0.39	2.22
NCS DC28121	10.72	90.65	11.12	5.00	2.32	8.43	0.047	1.38	0.083	0.99	50.28	0.36	2.48
NCS DC28119	8.13	29.00	0.23	2.09	1.33	0.55	0.032	0.28	0.087	0.02	15.66	0.44	2.88
NCS DC28118	1.92	11.45	0.91	1.98	0.19	1.00	0.021	0.088	0.007	0.49	5.00	0.085	1.87
NCS DC28117	0.63	3.47	0.19	0.46	0.17	0.18	0.005	0.009	0.004	0.17	1.76	0.014	1.33

~~CRM GRAPHITE - SYNTHETIC~~

~~available as a set or individually analysis listed in mg/kg 50 g units~~

Number	Al	As	Ca	Cl	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	NO_3	Na	Ni	Pb
~~CIBA KD 2~~	~~35~~	~~(0.05)~~	~~98~~	~~(4.1)~~	~~(0.10)~~	~~1.3~~	~~1.0~~	~~100~~	~~(41)~~	~~(21)~~	~~23~~	~~(0.22)~~	~~(0.5)~~	~~(28)~~	~~3.9~~	~~(1.6)~~
~~CIBA LD-4~~	~~33~~	~~(0.06)~~	~~126~~	~~(3.3)~~	~~(0.11)~~	~~3.4~~	~~1.3~~	~~149~~	~~(25)~~	~~(7.5)~~	~~3.5~~	~~(0.62)~~	~~(0.5)~~	~~(13)~~	~~5.5~~	~~(1.1)~~
~~CIBA KD 3~~	~~15~~	~~(0.04)~~	~~62~~	~~(4.4)~~	~~(0.07)~~	~~0.69~~	~~0.01~~	~~111~~	~~(39)~~	~~(22)~~	~~13~~	~~(0.44)~~	~~(0.5)~~	~~(17)~~	~~4.2~~	~~(0.90)~~
~~CIBA KD 6~~	~~0.4~~	~~(0.04)~~	~~79~~	~~(3.3)~~	~~(0.03)~~	~~0.44~~	~~0.62~~	~~37~~	~~(17)~~	~~.~~	~~4.3~~	~~(0.39)~~	~~(0.5)~~	~~(7)~~	~~2.0~~	~~(1.2)~~
~~CIBA PD-7~~	~~5.5~~	~~(0.03)~~	~~22~~	~~(6.4)~~	~~(0.03)~~	~~2.2~~	~~0.51~~	~~59~~	~~(17)~~	~~.~~	~~1.1~~	~~(0.25)~~	~~(0.5)~~	~~(2)~~	~~1.1~~	~~(1.0)~~

~~continued~~

Number	S	SO_4	Sb	Si	Sn	Sr	Ta	Ti	V	W	Zn	Zr
~~CIBA KD 2~~	~~(44)~~	~~(88)~~	~~(0.05)~~	~~(145)~~	~~(<0.2)~~	~~(2.0)~~	~~(0.005)~~	~~(46)~~	~~(3.6)~~	~~(<0.08)~~	~~(4.4)~~	~~(3.7)~~
~~CIBA LD 4~~	~~(68)~~	~~(98)~~	~~(0.03)~~	~~(404)~~	~~.~~	~~(2.7)~~	~~(0.011)~~	~~(49)~~	~~(4.3)~~	~~(<0.06)~~	~~(2.9)~~	~~(0.6)~~
~~CIBA KD 3~~	~~(43)~~	~~(85)~~	~~(0.02)~~	~~(147)~~	~~.~~	~~(1.9)~~	~~(0.006)~~	~~(38)~~	~~(3.8)~~	~~(<0.08)~~	~~(1.2)~~	~~(4.5)~~
~~CIBA KD-6~~	~~(44)~~	~~(73)~~	~~(0.03)~~	~~(66)~~	~~.~~	~~(1.9)~~	~~(0.006)~~	~~(51)~~	~~(4.9)~~	~~(0.03)~~	~~(1.7)~~	~~(6.0)~~
~~CIBA PD 7~~	~~(23)~~	~~(25)~~	~~(0.02)~~	~~(50)~~	~~.~~	~~(1.3)~~	~~(0.005)~~	~~(29)~~	~~(2.0)~~	~~(0.03)~~	~~(0.9)~~	~~(4.5)~~

CRM GREISEN

analysis listed in mass% T = Total CGL: **17025**, 100 g units GUW: 50 g units

Number	SiO_2	Al_2O_3	CaO	F	Fe_2O_3	FeO	K_2O	MgO	MnO	Na_2O	Li	P_2O_5	Rb	Sn	TiO_2	Zn	Zr	LOI
CGL 022	80.93	10.26	0.836	(1.48)	3.25T	.	(1.47)	0.044	0.102	(0.038)	.	0.018	(0.0463)	0.1884	0.086	0.0273	0.0148	1.46
GUW GNA	71.47	14.7	0.62	3.32	5.92	3.81	2.63	0.168	0.034	0.08	0.49	.	0.202	0.19	0.022	0.0078	0.0070	.

continued analysis listed in mg/kg

Number	As	Ba	Bi	Cr	Cs	Cu	Dy	Ga	Mo	Nb	Sr	Ta	Th	U
CGL 022	63.6	(25.6)	(29.6)	271	(29.7)	563	(14.1)	26.1	.	28.4	16.6	(4.01)	32.9	(6.12)
GUW GNA	7	51	220	.	45	.	3	.	100	.	.	29	.	22

also 19 more informational elements

CRM GYPSUM ROCK

analysis listed in mass % 100 g units

Number	SO_3	CaO	Al_2O_3	CO_2	Fe_2O_3*	H_2O	K_2O	MgO	Na_2O	P_2O_5	SiO_2	SrO	L.O.I.**
DOMTAR GYP A	46.2	32.9	0.10	0.47	0.05	19.4	0.021	0.18	0.009	0.011	0.45	0.11	20.06

* Total iron calculated as Fe2O3 ** Loss on ignition at 1000'C

continued analysis listed in mg/kg

Number	As	Ba	Br	Cd	Ce	Cl	Co	Cr	Cs	Eu	Hf	La
DOMTAR GYP A	0.19	(28)	(0.5)	0.51	(0.7)	12	(0.2)	(2)	(0.15)	0.06	0.26	0.24

continued

Number	Lu	Mn	Rb	Sb	Sc	Sm	Th	Ti	U	Yb	Zn	Zr
DOMTAR GYP A	(0.006)	19	(0.8)	0.04	0.09	0.041	(0.1)	(78)	0.1	0.02	7	(9)

CRM GYPSUM ROCK

analysis listed in mass %

Number	SO_3	CaO	Al_2O_3	CO_2	Cl-	Fe_2O_3	H_2O	K_2O	MgO	Na_2O	SiO_2	SrO	TiO_2	LOI	Units
GBW 03109a	51.91	39.24	0.34	(4.02)	0.033	0.16	0.39	0.094	1.74	0.065	1.68	(0.27)	0.016	4.55	50 g
GBW 03111a	40.72	32.30	0.14	(5.44)	0.0032	0.11	17.95	0.026	2.47	0.014	0.63	(0.096)	0.010	23.60	50 g
NCS DC62106d *	43.91	32.21	0.25	.	.	0.20	.	0.08	0.72	0.11	0.99	.	0.01	21.52	20 g
GBW 03111	37.64	30.28	1.14	(5.80)	0.013	0.38	16.62	0.23	3.19	0.014	4.16	(0.077)	0.058	(22.88)	50 g

* NCS DC62106d also contains 0.17% adhered water and 19.78% crystallized water.

RM GYPSUM BYPRODUCT

analysis listed in mass % based on a dry (40'C) sample — 100 g units

Number	SO_3	CaO	Al_2O_3	CO_2	Cr_2O_3	$T.Fe_2O_3$	H_2O+	K_2O	MgO	Na_2O	P_2O_5	SiO_2	SrO	TiO_2	V_2O_5	%Total	LOI*
DOMTAR FGD-1	46.4	32.7	0.023	0.02	0.0002	0.014	20.70	0.007	0.007	0.005	0.03	0.13	0.012	.	0.0003	100.05	21.04
DOMTAR FGD-2	45.6	32.8	0.033	0.62	0.0015	0.043	20.38	0.01	0.019	0.02	0.05	0.21	0.024	.	0.0009	98.81	21.33
DOMTAR TIG-1	43.4	32.3	0.57	1.41	0.036	0.26	20.3	0.008	0.12	0.036	0.04	0.11	0.42	0.82	0.10	99.93	22.03

H_2O+ combined water at 250'C * Loss on ignition at 1000'C (1 hr)

continued analysis listed in mg/kg

Number	As	Ce	Cl	Co	Cr	Dy	Eu	F	Hf	La	Mn	Sb
DOMTAR FGD-1	0.10	0.5	(100)	0.02	1.2	.	0.02	95	.	0.35	2.0	0.03
DOMTAR FGD-2	0.48	1.7	(115)	0.07	10.2	0.48	0.09	320	0.06	2.18	2.5	0.024
DOMTAR TIG-1	0.22	6	400	0.26	246	0.42	0.08	230	3.0	2.7	36	0.05

Number	Sc	Se	Sm	Ta	Tb	Th	Ti	U	V	Yb	Zn	Zr
DOMTAR FGD-1	0.023	0.8	0.07	.	.	0.03	75	.	1.5	.	1.7	.
DOMTAR FGD-2	0.166	3.0	0.52	.	0.07	0.38	75	1.10	5.1	0.27	2.3	(10)
DOMTAR TIG-1	17.1	.	0.65	3.1	(2)	2.14	6154	2.5	560	0.31	(32)	(80)

CRM HORNBLENDITE WITH EXTENSIVE ANALYSIS

analysis listed in mass %

Number	Al_2O_3	CO_2	CaO	FeO	$T.Fe_2O_3$	H_2O+	K_2O	MgO	Mn	MnO	Na_2O	P_2O_5	S	SiO_2	Ti	TiO_2	LOI
VS 2113-81	14.24	.	11.04	9.72	18.26	.	0.382	12.70	.	0.144	2.14	.	.	37.95	.	1.91	.
NCS DC73377	13.76	(0.16)	9.6	10.8	14.8	(1.7)	0.48	7.2	0.1600	.	2.07	.	(0.0060)	49.62	0.5510	.	1.06
JH-1	5.66	.	15.02	(8.09)	10.27	.	0.53	16.73	.	0.19	0.71	0.099	.	48.18	.	0.67	.

continued analysis listed in mg/kg except * which is ng/g

Number	Ag	As	B	Ba	Be	Bi	Cd	Ce	Cl	Co	Cr	Cs	Cu%	Dy	Er	Eu	F	Ga	Gd
VS 2113-81	.	.	.	99	.	.	.	.	.	74	15	.	0.074	.	.	.	.	25	.
NCS DC73377	(0.05)	26	12	62	0.34	(0.06)	(0.14)	7.7	(116)	52	137	1.8	0.0084	3.5	2.3	0.91	200	17.2	2.8
JH-1	.	.	.	106	.	.	.	17.6	.	51.5	616	0.87	0.00086	2.5	1.2	0.86	.	7.9	.

Number	Ge	Hf	Hg*	Ho	In	La	Li	Lu	Mo	Nb	Nd	Ni	P	Pb	Pr	Rb	Sb	Sc
VS 2113-81	.	.	.	.	.	.	.	.	1.3	.	.	57	.	4.9	.	.	.	58
NCS DC73377	1.46	1.5	3.3	0.85	(0.06)	2.9	11.2	0.39	0.15	2.7	6.5	117	360	(8)	1.25	29	0.63	43
JH-1	.	1.4	.	0.53	.	7.9	.	0.17	0.77	4.2	11.6	58.2	.	2.6	.	14.4	.	77.6

Number	Se	Sm	Sn	Sr	Ta	Tb	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Units
VS 2113-81	.	.	2.9	.	.	.	.	.	.	.	39	.	.	1.5	1370	21	40 g
NCS DC73377	0.083	2.1	(0.8)	142	(0.18)	0.57	(0.4)	(0.11)	0.37	(0.14)	296	0.34	20	2.4	100	(57)	70 g
JH-1	.	3.1	.	153	0.23	0.52	1.4	.	.	0.58	228	.	13.7	1.2	61.8	48.3	100 g

AMPHIBOLITE

IRON PELLETS (supplied in homogeneous powder form)

= class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg

#	Number	Fe	Fe(met)	FeO	Al	Al_2O_3	Ca	CaO	Mg	MgO	Mn	MnO	Na	Na_2O	P	S	Si	SiO_2	Ti	TiO_2
1	VS R10/4	90.9	87.3	.	.	0.29	.	1.65	.	0.30	.	.	.	0.094	0.0104	0.0062	.	4.11	.	.
1	SRM 691	90.5	.	.	.	1.21		0.64	.	0.51	.	0.042	.	0.177	0.005	(0.009)	.	3.6	.	0.27
1	NCS DC28240a	66.18	.	0.78	.	0.43	.	0.51	.	0.79	.	0.040	.	.	0.010	0.0066	.	3.81	.	0.048
1	VS R29	64.95	.	0.48	.	0.38	.	0.45	.	0.149	.	.	.	.	0.0123	0.0118	.	6.13	.	.
1	NCS DC28239b	63.78	.	0.77	.	0.98	.	0.85	.	1.59	.	0.065	.	.	0.016	0.0086	.	5.29	.	0.18
1	NCS DC28020a	63.07	.	(0.04)	.	1.47	.	1.34	.	0.96	.	0.303	.	0.103	0.028	0.0084	.	5.22	.	0.258
1	VS R28	63.01	.	1.16	.	0.37	.	4.09	.	0.194	.	.	.	.	0.0121	0.087	.	5.11	.	.
1	NCS DC28020b	61.81	.	(0.18)	.	1.48	.	1.30	.	1.00	.	0.310	.	0.099	0.032	0.0055	.	6.88	.	0.251
1	NCS DC11025	61.37	.	(1.92)	.	1.35	.	1.04	.	0.80	.	0.120	.	0.105	0.093	0.021	.	6.59	.	1.61
1	NCS DC28020c	60.46	.	0.33	.	0.76	.	0.75	.	5.15	.	0.130	.	0.036	0.013	0.029	.	6.12	.	0.154
1	VS R3/2	58.72	.	2.53	.	2.50	.	4.47	.	2.48	.	0.232	.	.	0.0027	0.005	.	3.74	.	2.49
1	VS R23/1	58.7	.	.	.	.	.	4.45	.	.	.	.	.	.	.	.	.	3.75	.	.
1	NCS DC28021a	57.88	.	6.53	.	2.54	.	3.15	.	3.11	.	0.126	.	0.105	0.016	0.115	.	7.92	.	0.207

Number	As*	C	Cd*	Co	Cr	Cu	K	K_2O	Mo*	N*	Ni	Pb*	Sn	V	V_2O_5	Zn	Units
VS R10/4	.	1.72	.	.	.	0.0019	.	0.055	.	.	.	1.8	.	.	.	0.0018	100 g
SRM 691	(14)	(0.12T)	(<5)	0.031	0.025	0.030	0.065	.	(<20)	(50)	(0.269)	(<20)	(<0.001)	0.015	.	(0.004)	100 g
NCS DC28240a	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g
VS R29	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g
NCS DC28239b	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g
NCS DC28020a	.	.	.	.	.	0.0089	.	0.078	.	.	.	.	.	.	.	0.012	50 g
VS R28	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g
NCS DC28020b	.	.	.	.	.	0.0089	.	0.066	.	.	.	.	.	0.155	.	0.012	50 g
NCS DC11025	.	.	.	.	.	.	.	0.111	.	.	.	.	.	.	.	0.012	70 g
NCS DC28020c	.	.	.	.	.	0.010	.	0.081	.	.	.	.	.	.	.	0.012	50 g
VS R3/2	.	.	.	0.020	.	.	.	.	.	.	.	.	.	.	0.56	.	100 g
VS R23/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	150 g
NCS DC28021a	12	.	.	.	.	0.018	.	0.265	.	.	.	47	.	.	.	0.039	50 g

CRM IRON SULPHIDE CONCENTRATE

analysis listed in mass % 25 g units

Number	Al	Ca	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	P	Pb	S	SiO_2	Ti	Zn
CAN TPO-1	(3.51)	(2.17)	0.021	(0.03)	0.118	34.85	(0.56)	(1.66)	(0.08)	(0.85)	0.617	(0.03)	(0.02)	18.03	25.52	(0.35)	(0.02

CRM **IRON ORE, chart 1 of 9** # = class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg

#	Number	Fe	FeO	Al	Al_2O_3	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	Na	Na_2O	P	P_2O_5	S	Si	SiO_2	Ti	TiO_2
1	VS R21/2	99.0	.	.	.	.	.	.	.	.	.	0.3	.	.	.	0.01	.	0.02	0.06	.	.	.
1	VS R16/3	98.2	.	.	.	.	.	.	.	.	.	0.380	.	.	.	0.0110	.	0.0198	0.073	.	.	.
1	FLX 2001	Fe2O3:96.47	.	.	1.40	.	0.026	.	.	.	.	.Mn2O3:0.134	.	.	.	.	0.202	.	.	1.67	.	0.134
1	JK 55	92.47	.	.	(0.21)	.	(1.2)	.	(0.032)	.	(0.86)	.	(0.084)	.	.	(0.036)	.	.	.	(1.0)	.	(0.17)
~~1~~	~~ECRM 685-1~~	~~91.103~~	~~.~~	~~0.3197~~	~~.~~	~~0.1395~~	~~.~~	~~0.0418~~	~~.~~	~~0.2394~~	~~.~~	~~0.0415~~	~~.~~	~~0.0773~~	~~.~~	~~0.0170~~	~~.~~	~~0.0031~~	~~0.7950~~	~~.~~	~~0.2199~~	~~.~~
2	VS R40	90.95	.	.	0.82	0.90	.	.	0.05129	.	0.299	.	.	.	0.084	0.0094	.	0.0057	.	4.13	.	.
1	NCS DC28039	72.02	28.78	.	0.095	.	0.026	.	0.0064	.	0.043	0.043	.	.	0.0008	0.0016	.	0.0030	.	0.14	0.029	.
1	NCS DC28029	72.01	28.63	.	0.095	.	0.025	.	0.0068	.	0.042	0.043	.	.	0.0008	0.0013	.	0.0028	.	0.158	0.028	.
1	NCS DC16002	71.79	28.69	.	0.069	.	.	.	.	.	0.038	0.053	.	.	.	0.0022	.	0.055	.	0.36	.	.
1	GIOP-118	71.51	34.86	.	(<0.01)	.	0.0493	.	(<0.01)	.	0.0576	0.0491	.	(0.019)	.	0.0058	.	0.0026	.	0.763	.	(<0.01)
1	JK 29A	71.36	.	.	0.232	.	0.082	.	0.0087	.	0.223	.	0.0632	.	0.015	0.0059	.	0.0059	.	0.33	.	0.292
1	JK 42A	70.66	.	.	0.278	.	0.199	.	0.0157	.	0.382	.	0.0506	.	0.043	0.0247	.	0.0082	.	0.800	.	0.385
1	IMZ 350	70.20	30.06	.	0.077	.	0.084	.	0.015	.	0.19	0.030	.	.	0.033	0.007	.	0.097	.	2.51	.	0.021
1	ECRM 687-1	69.66	.	0.0356	.	0.0113	.	0.0011	.	0.0018	.	0.1658	.	0.0030	.	0.0120	.	.	0.0157	.	0.0303	.
1	GIOP-117	69.631	.	.	0.06	.	(0.01)	.	(0.0026)	.	(0.013)	0.008	.	0.011	.	0.00325	.	0.0026	.	0.203	.	0.0902
1	NCS DC28220	69.05	23.8	.	0.50	.	0.20	.	.	.	0.17	.	0.079	.	.	0.010	.	0.011	.	2.45	.	0.313
1	NCS DC13019c	68.96	28.98	.	0.174	.	0.196	.	0.0068	.	0.268	.	0.049	.	0.0060	0.010	.	0.0277	.	3.98	.	0.0174
1	IMZ 324	68.93	28.27	.	0.11	.	0.107	.	0.026	.	0.24	0.026	.	.	(0.04)	0.014	.	0.044	.	3.96	.	0.028
1	NCS DC28219	68.55	23.0	.	0.54	.	0.21	.	.	.	0.20	.	0.052	.	.	0.0054	.	0.027	.	3.21	.	0.116
1	VS R38	68.55	.	.	0.212	.	0.118	.	0.087	.	0.131	.	0.035	.	0.036	0.0122	.	0.334	.	4.56	.	0.022
1	NCS DC28005c	68.38	28.80	.	0.58	.	0.78	.	0.050	.	1.15	.	0.086	.	0.026	0.0035	.	0.034	.	2.25	.	0.057
1	IMZ 323	68.35	27.65	.	0.23	.	0.109	.	0.027	.	0.28	0.043	.	.	0.035	0.018	.	0.052	.	4.31	.	0.017
1	NCS DC28115	68.29	28.25	.	0.43	.	0.70	.	0.060	.	1.25	0.061	.	.	0.021	0.0047	.	0.041	.	2.08	0.034	0.057
1	NCS DC28032	68.29	0.24	.	0.74	.	0.074	.	0.0063	.	0.025	0.096	.	.	0.015	0.028	.	0.0028	.	0.85	0.050	.
1	NCS DC93024	68.02	30.50	.	0.34	.	0.35	.	0.018	.	0.19	0.017	.	.	0.012	0.017	.	0.301	.	4.58	.	0.056
1	IMZ 352	67.84	29.09	.	0.206	.	0.295	.	0.020	.	0.55	0.032	.	.	0.030	0.018	.	0.061	.	4.56	.	0.015
1	NCS DC28005b	67.84	29.72	.	0.45	.	0.155	.	0.055	.	0.202	.	0.030	.	0.018	0.0025	.	0.106	.	5.32	.	0.097
1	NCS DC28221	67.84	28.8	.	0.60	.	0.63	.	.	.	1.40	.	0.070	.	.	0.0046	.	0.041	.	2.34	.	0.061
1	IMZ 320	67.76	27.37	.	0.12	.	0.13	.	0.049	.	0.30	0.029	.	.	0.037	0.022	.	0.012	.	5.30	.	0.016
1	IMZ 325	67.73	28.03	.	0.20	.	0.17	.	0.027	.	0.27	0.031	.	.	(0.03)	0.016	.	0.077	.	5.01	.	0.018
1	IMZ 351	67.55	28.52	.	0.132	.	0.095	.	0.019	.	0.25	0.0121	.	.	0.037	0.008	.	0.023	.	5.71	.	0.010
1	IMZ 261/1	67.54	.	.	0.59	.	0.30	.	.	.	1.37	.	0.16	.	.	(0.019)	.	0.080	.	3.16	.	.
1	VS R25/1	67.3	.	.	.	.	0.14	.	.	.	0.25	.	.	.	.	.	.	.	.	3.37	.	.
1	VS R22/2	67.0	.	.	0.3	.	0.1	.	.	.	0.2	.	.	.	.	0.008	.	.	.	3.3	.	.
1	NCS DC73009	66.87	23.14	.	0.99	.	0.14	.	0.030	.	0.22	0.071	.	.	0.012	(0.011)	.	0.0055	.	5.05	0.059	.
1	SRM 690	66.8	.	.	0.17	.	0.20	.	0.0030	.	0.177	.	0.230	.	0.0027	0.009	.	(0.004)	.	3.70	.	0.021
1	OREAS 40	66.72	1.76	.	0.130	.	0.015	.	0.018	.	0.017	.	0.020	.	.	0.004	.	0.008	.	4.64	.	0.050
1	ECRM 690-1	66.70	.	0.198	.	0.269	.	0.0158	.	0.815	.	0.0337	.	0.0312	.	0.0085	.	.	0.881	.	0.229	.
1	NCS DC28222	66.64	27.9	.	0.76	.	0.86	.	.	.	1.62	.	0.091	.	.	0.0051	.	0.096	.	2.96	.	0.070
1	NCS DC14028c	66.56	26.01	.	0.28	.	0.11	.	0.009	.	0.11	0.135	.	.	(0.006)	0.015	.	0.0045	.	6.09	0.283	.
1	NCS DC14208	66.56	26.01	.	0.28	.	0.11	.	0.009	.	0.11	0.135	.	.	(0.006)	0.015	.	0.0045	.	6.09	0.283	.
1	NCS DC28037	66.54	0.21	.	1.43	.	0.031	.	0.012	.	0.054	0.482	.	.	0.015	0.034	.	0.0071	.	0.962	0.051	.
1	NCS DC28109	66.52	27.91	.	0.62	.	1.10	.	0.091	.	1.96	0.070	.	.	0.032	0.0062	.	0.064	.	3.26	0.037	0.061

| # | Number | Fe | FeO | Al | Al_2O_3 | Ca | CaO | K | K_2O | Mg | MgO | Mn | MnO | Na | Na_2O | P | P_2O_5 | S | Si | SiO_2 | Ti | TiO_2 |

Number	As	Ba	C	Cl	Co	Cr	Cr_2O_3	Cu	Ni	Pb	V	V_2O_5	Zn	LOI	Units	Other
VS R21/2	.	.	0.02	.	.	.	.	.	.	.	.	.	.	.	100 g	O: 0.3
VS R16/3	.	.	0.108	.	Insoluble Residue: 0.155			.	.	.	.	.	.	.	100 g	O: 1.15
FLX 2001	.	.	.	.	.	.	.	.	.	.	.	.	.	.	35 g	
JK 55	.	.	.	.	Metallic Iron: 84.15%			.	.	.	.	(0.27)	.	.	100 g	
~~ECRM 685-1~~	~~.~~	~~.~~	~~1.487~~	~~.~~	~~0.0133~~	~~.~~	~~.~~	~~.~~	~~0.0175~~	~~.~~	~~0.1436~~	~~.~~	~~.~~	~~.~~	~~100 g~~	
VS R40	.	.	1.393	.	Metallic Iron: 85.7%			.	.	.	.	.	.	.	100 g	
NCS DC28039	.	.	.	.	.	.	.	.	.	.	.	.	.	.	70 g	
NCS DC28029	0.00012	.	.	.	0.0008	0.0062	.	0.0007	0.0022	0.0002	.	.	0.0026	.	50 g	
NCS DC16002	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
GIOP-118	(0.011)	(0.0055)	.	(0.0071)	(0.0026)	0.2681	.	0.0071	0.1539	(0.0078)	(0.0021)	.	(0.0034)	-3.857	10 g	
JK 29A	.	.	.	.	0.0106	0.0057	.	0.0007	0.0167	.	.	0.266	0.0016	.	100 g	
JK 42A	.	.	.	.	0.0105	0.0010	.	0.0007	0.0129	.	.	0.251	0.0015	.	100 g	
IMZ 350	.	(0.0019)	0.024	.	(0.0024)	0.0031	.	(0.0006)	.	.	0.0020	.	(0.0017)	.	100 g	
ECRM 687-1	.	.	Mo: 0.0020	0.0173	.	0.0227	.	0.0030	0.0122	.	.	Sn: 0.0006	0.0051	.	100 g	
GIOP-117	(0.0038)	(0.0038)	.	0.012	(0.001)	(0.0031)	.	(0.0037)	(0.0026)	(0.0048)	(0.0013)	.	(0.0014)	0.085	10 g	
NCS DC28220	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	
NCS DC13019c	.	.	.	.	.	.	.	.	.	0.0052	.	.	0.0030	.	50 g	
IMZ 324	.	0.0024	0.052	.	0.003	0.0025	.	0.0014	0.0013	0.0002	.	.	(0.003)	2.91	100 g	
NCS DC28219	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	
VS R38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	Fe_2O_3: 30.6
NCS DC28005c	.	.	.	.	.	.	.	0.0037	.	.	.	.	0.0055	.	50 g	
IMZ 323	.	0.0020	0.027	.	0.0026	0.0020	.	0.0007	0.0002	0.0015	(0.002)	.	0.0021	2.49	100 g	
NCS DC28115	.	.	.	.	.	.	.	0.0065	.	.	.	.	0.0037	.	70 g	
NCS DC28032	.	.	.	.	.	.	.	.	.	.	.	.	.	.	70 g	
NCS DC93024	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
IMZ 352	.	(0.0019)	0.124	0.013	.	0.0011	.	(0.0005)	.	(0.0012)	0.0009	.	(0.0013)	.	100 g	
NCS DC28005b	.	.	.	.	.	0.0075	.	.	.	.	.	.	0.0020	.	50 g	
NCS DC28221	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	
IMZ 320	0.0015	0.0019	0.033	.	(0.003)	0.003	.	0.0015	0.0013)	0.0015	0.0015	.	0.002	2.87	100 g	
IMZ 325	.	0.0021	0.094	.	0.002	0.0023	.	0.0010	.	0.0017	0.0018	.	(0.003)	2.53	100 g	
IMZ 351	(0.0009)	(0.0019)	0.103	0.043	(0.0027)	0.0014	.	0.0012	.	(0.0009)	0.0009	.	(0.0016)	.	100 g	
IMZ 261/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
VS R25/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	150 g	
VS R22/2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	150 g	
NCS DC73009	.	.	.	.	.	.	.	(0.0015)	.	.	.	.	.	.	50 g	
SRM 690	.	.	.	.	.	(0.003)	.	.	.	.	(0.0045)	.	.	.	100 g	FeII: 0.83
OREAS 40	.	.	.	.	.	.	.	.	.	.	0.0013	.	.	-0.248	10 g	Fe_2O_3:[64.96]
ECRM 690-1	.	.	.	.	0.0089	0.0113	.	0.0006	0.0200	.	0.1417	.	.	.	100 g	
NCS DC28222	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	
NCS DC14028c	.	.	.	.	.	.	.	0.0010	.	.	.	.	.	.	50 g	
NCS DC14208	.	.	.	.	.	.	.	0.0010	.	.	.	.	.	.	50 g	
NCS DC28037	.	.	.	.	.	.	.	.	.	.	.	.	.	.	70 g	
NCS DC28109	.	.	.	.	.	.	.	0.010	.	.	.	.	0.0052	.	70 g	

| Number | As | Ba | C | Cl | Co | Cr | Cr_2O_3 | Cu | Ni | Pb | V | V_2O_5 | Zn | LOI | Units | Other |

CRM **IRON ORE, chart 2 of 9** # = class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg

#	Number	Fe	FeO	Al	Al_2O_3	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	Na	Na_2O	P	P_2O_5	S	Si	SiO_2	Ti	TiO_2
1	NCS DC28028	66.47	0.58	.	1.36	.	0.028	.	0.014	.	0.091	0.137	.	.	0.005	0.055	.	0.0066	.	1.79	0.046	.
1	IMZ 353	66.42	1.41	.	0.40	.	0.098	.	0.011	.	0.054	0.051	.	.	0.012	0.018	.	0.0049	.	4.07	.	0.28
1	SARM 145	66.42	.	.	0.58	.	0.15	.	0.09	.	0.02	.	0.02	.	0.02	.	0.12	(0.014)	.	3.56	.	0.03
1	NCS DC28027	66.34	0.07	.	1.42	.	0.02	.	0.013	.	0.063	0.48	.	.	0.0055	0.034	.	0.0071	.	1.02	0.057	.
1	NCS DC28223	66.31	24.4	.	1.04	.	0.64	.	.	.	0.26	.	0.085	.	.	0.039	.	0.011	.	4.17	.	0.709
1	BCS 517	66.30	.	0.508	.	0.033	.	0.0105	.	0.0311	.	0.679	.	0.0097	.	0.0408	.	0.0090	0.519	.	0.0332	.
1	JSS 805-2	66.22	.	0.565	.	0.0071	.	0.012	.	0.0221	.	0.596	.	0.0026	.	0.047	.	0.0077	0.552	.	0.0409	.
1	GIOP-116	66.214	.	.	0.909	.	0.0898	.	0.0088	.	0.0559	0.04	.	0.035	.	0.01331	.	0.00428	.	3.577	.	0.1249
1	NCS DC28005a	66.18	27.01	.	0.54	.	0.74	.	0.054	.	2.64	.	0.103	.	0.031	0.0067	.	0.059	.	2.90	.	0.077
1	NCS DC28033	66.17	26.04	.	0.260	.	0.21	.	0.014	.	0.18	0.043	.	.	0.0015	0.012	.	0.044	.	7.21	0.024	.
2	DH 1137	66.15	0.32	.	0.442	.	1.930	.	0.011	.	0.164	0.038	.	.	0.020	.	0.113	0.003	.	2.365	.	0.032
1	ECRM 682-2	66.12	.	0.325	.	.	.	.	.	0.0133	.	0.0311	.	.	.	0.0529	.	0.0140	0.833	.	0.0441	.
1	IMZ 358	66.08	0.84	.	0.214	.	2.61	.	0.029	.	0.23	0.027	.	.	0.032	0.0066	.	0.0103	.	2.60	.	0.022
1	VS R1/4	66.0	26.1	.	0.28	.	0.17	.	.	.	0.38	.	.	.	.	0.0157	.	0.029	.	7.38	.	.
1	NCS DC28214	65.97	27.0	.	0.70	.	0.43	.	.	.	0.45	.	0.094	.	.	0.013	.	0.291	.	5.02	.	0.541
2	BS 105	65.9	.	0.098	.	0.50	.	0.013	.	0.188	.	0.087	.	0.016	.	0.0077	.	(0.002)	2.17	.	0.0074	.
1	JK 28	65.86	2.4	0.35	.	0.21	.	0.99	.	0.16	.	0.045	.	0.078	.	0.045	.	0.064	1.96	.	0.11	.
1	IMZ 362	65.81	0.4	.	0.123	.	1.69	.	0.118	.	0.18	0.0087	.	.	0.058	0.0091	.	0.0021	.	3.79	.	0.008
1	VS R37	65.81	.	.	0.264	.	0.050	.	.	.	0.029	.	0.015	.	.	0.0110	.	1.29	.	3.06	.	0.013
1	**IMS PBS-204**	65.75	.	.	0.98	.	(0.010)	.	0.003	.	0.040	0.019	.	.	0.010	0.124	.	0.014	.	1.14	.	0.060
2	DH 1136	65.74	.	.	0.345	.	0.370	.	0.033	.	0.083	1.21	.	.	0.025	.	0.017	0.002	.	3.35	.	0.023
1	NCS DC28114	65.71	27.14	.	0.83	.	0.72	.	0.048	.	3.33	0.127	.	.	0.015	0.013	.	0.158	.	2.07	0.418	0.697
1	ECRM 604-1	65.69	.	0.93	.	0.107	.	.	.	0.049	.	0.092	.	.	.	0.053	.	0.015	1.27	.	0.060	.
1	JSS 850-4	65.67	(0.30)	.	0.40	.	0.41	.	0.075	.	0.79	0.019	.	.	0.129	0.015	.	0.006	.	4.12	.	0.056
1	NCS DC28035	65.66	0.54	.	1.64	.	0.056	.	0.018	.	0.102	0.135	.	.	0.007	0.060	.	0.022	.	1.92	0.048	.
1	BAM 630-1	65.63	.	.	0.88	.	0.10	.	.	.	0.47	0.060	.	.	.	0.043	.	0.032	.	5.88	.	0.066
1	CAN IOC-1	65.62	20.76	.	(0.184)	.	0.975	.	(0.004)	.	1.043	.	0.472	.	.	0.0120	.	(0.00657)	.	2.633	.	0.0429
2	DH 1114	65.55	27.20	.	0.271	.	0.421	.	0.061	.	0.565	0.029	.	.	0.078	.	0.028	0.019	.	7.47	.	0.060
1	IMZ 322	65.50	26.82	.	0.095	.	0.26	.	0.058	.	0.46	0.026	.	.	0.069	0.015	.	0.047	.	7.56	.	0.012
1	IMZ 310	65.25	1.61	.	1.02	.	0.30	.	0.022	.	0.25	0.058	.	.	0.054	0.034	.	0.011	.	6.58	.	0.035
1	SRM 693	65.0	.	.	1.04	.	0.015	.	0.0028	.	0.014	.	0.090	.	0.002	0.056	.	(0.005)	.	3.86	.	0.034
1	JSS 804-3	64.91	.	0.473	.	0.109	.	.	.	0.0119	.	0.0199	.	.	.	0.056	.	0.0073	2.47	.	0.026	.
1	IMZ 363	64.90	0.57	.	0.30	.	0.372	.	0.040	.	0.375	0.0301	.	.	0.112	0.0086	.	0.004	.	6.08	.	0.032
1	NCS DC28217	64.82	24.5	.	1.30	.	0.85	.	.	.	0.31	.	0.088	.	.	0.053	.	0.011	.	4.91	.	0.949
1	NCS DC28218	64.81	25.4	.	0.80	.	0.65	.	.	.	1.78	.	0.084	.	.	0.026	.	0.035	.	5.04	.	0.477
2	DH 1123	64.80	0.133	.	1.619	.	0.034	.	0.008	.	0.037	0.049	.	.	0.006	.	0.123	0.011	.	2.67	.	0.047
2	DH 1118	64.72	.	.	1.785	.	0.052	.	0.020	.	0.057	0.713	.	.	0.014	.	0.141	0.009	.	1.56	.	0.075
2	DH 1135	64.69	0.06	.	1.49	.	0.011	.	0.016	.	0.033	1.520	.	.	.	.	0.140	0.006	.	0.696	.	0.052
2	DH 1116	64.69	.	.	0.722	.	1.149	.	0.023	.	0.400	0.198	.	.	0.016	.	0.058	.	.	4.67	.	0.078
1	NCS DC28052	64.53	0.28	.	0.77	.	0.30	.	0.038	.	0.32	0.075	.	.	0.054	0.025	.	0.0053	.	5.65	0.122	.

Number	As	Ba	C	CO_2	Cl	Co	Cr	Cr_2O_3	Cu	Ni	NiO	Pb	V	V_2O_5	Zn	ZnO	LOI	Units	Other
NCS DC28028	0.0012	.	.	.	.	0.0008	0.003	.	0.0014	0.0019	.	0.0013	.	.	0.0044	.	.	50 g	
IMZ 353	(0.0007)	.	0.011	.	(0.0039)	(0.0018)	0.0045	.	0.0008	(0.0017)	.	(0.0011)	0.005	.	(0.0010)	.	(0.086)	100 g	
SARM 145	.	BaO:(0.046)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.36	100 g	
NCS DC28027	0.0004	.	.	.	.	0.0009	0.0015	.	0.0085	0.0008	.	0.0013	.	.	0.0032	.	.	50 g	
NCS DC28223	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	
BCS 517	.	.	0.061	.	0.00075	.	.	.	0.0088	.	.	0.0028	0.0040	.	0.0047	.	1.898	100 g	
JSS 805-2	.	.	.	.	.	.	.	.	0.0094	.	.	.	0.0039	.	0.0047	.	1.72	100 g	
GIOP-116	.	.	.	.	0.0346	.	.	.	.	.	.	.	.	.	.	.	0.404	10 g	Zr: 0.0104
NCS DC28005a	.	.	.	.	.	.	.	.	0.0050	.	.	.	.	.	0.0070	.	.	50 g	
NCS DC28033	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	70 g	last
DH 1137	.	.	0.101	.	.	.	.	0.017	.	.	.	.	.	.	.	.	0.080	100 g	CO_2: 0.089
ECRM 682-2	.	.	.	.	.	.	.	.	0.0005	.	.	0.0004	0.0015	.	.	.	.	100 g	
IMZ 358	(0.0008)	.	0.030	.	.	(0.0016)	0.0034	.	0.0008	(0.0016)	.	(0.0011)	0.0015	.	(0.0013)	.	0.051	100 g	
VS R1/4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
NCS DC28214	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	
BS 105	(0.001)	.	.	.	.	(0.0005)	0.012	.	(0.001)	0.0036	.	(0.002)	0.0024	.	(0.001)	.	.	100 g	Sn: (0.002)
JK 28	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	last	150 g	Fe_2O_3: 91.5
IMZ 362	.	(0.003)	(0.016)	.	.	(0.0005)	0.0020	.	0.0011	0.0010	.	0.0017	.	.	0.0010	.	0.13	100 g	
VS R37	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
IMS PBS-204	0.001	(0.004)	.	.	(0.002)	(0.002)	(0.002)	.	(0.003)	(0.002)	.	(0.004)	(0.003)	(0.002)	0.002	.	3.46	250 g	**17034**
DH 1136	.	.	0.016	0.030	.	.	.	0.025	.	.	.	.	.	0.006	.	0.003	0.057	100 g	
NCS DC28114	.	.	.	.	.	.	.	.	0.016	.	.	.	.	.	0.0080	.	.	70 g	
ECRM 604-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
JSS 850-4	.	.	.	.	.	.	(0.003)	.	0.008	(0.006)	.	.	0.025	.	(0.007)	.	.	100 g	
NCS DC28035	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	70 g	
BAM 630-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
CAN IOC-1	.	(0.0030)	(0.9)	(3)	(0.003)	(0.001999)	.	0.0224	(0.0008)	.	.	(0.0002)	(0.00408)	.	(0.0011)	.	0.863	200 g	
DH 1114	.	.	0.125	.	.	.	.	0.006	.	.	.	.	.	0.002	.	.	.	100 g	
IMZ 322	.	0.0013	0.047	.	.	0.0008	0.0019	.	.	0.0014	.	0.0011	0.0002	.	0.0029	.	2.25	100 g	
IMZ 310	0.005	0.003	0.158	.	0.07	0.003	0.005	.	0.0011	0.002	.	0.0013	0.0015	.	0.0019	.	-1.20	100 g	
SRM 693	(0.0012)	.	.	.	.	.	(0.0048)	.	.	(0.0009)	.	.	(0.0043)	.	.	.	.	100 g	
JSS 804-3	0.0030	FeII:0.22%		Combined Waters:0.39%			0.0024	.	.	0.0028	.	.	0.0025	.	.	.	.	100 g	
IMZ 363	.	(0.0011)	(0.013)	.	.	(0.0007)	0.0032	.	(0.0011)	0.0012	.	(0.0016)	.	.	0.0011	.	(0.073)	100 g	
NCS DC28217	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	
NCS DC28218	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	
DH 1123	.	.	0.058	.	.	.	.	.	.	.	.	.	.	0.005	.	0.0009	.	100 g	
DH 1118	.	.	0.085	0.033	.	.	.	.	.	.	.	.	.	0.017	.	0.005	2.51	100 g	
DH 1135	.	.	0.069	0.007	.	.	.	.	.	.	.	.	.	.	.	.	2.31	100 g	
DH 1116	.	.	0.016	0.026	.	.	.	0.038	.	.	0.011	.	.	0.009	.	0.0010	0.059	100 g	
NCS DC28052	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	70 g	

IRON ORE, chart 3 of 9

= class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg

#	Number	Fe	FeO	Al	Al_2O_3	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	Na	Na_2O	P	P_2O_5	S	Si	SiO_2	Ti	TiO_2
1	GIOP-127	64.499	.	.	2.815	.	0.1522	.	0.0195	.	0.0644	0.0633	.	0.0184	.	0.0457	.	0.0133	.	2.578	.	0.0581
1	NCS DC14001b	64.48	0.34	.	1.26	.	0.15	.	0.096	.	0.041	0.087	.	.	0.013	0.049	.	0.018	.	3.40	.	0.057
1	NCS DC28113	64.42	27.00	.	0.90	.	1.06	.	0.099	.	3.28	0.109	.	.	0.034	0.011	.	0.381	.	3.56	0.315	0.522
1	IMZ 356	64.41	(0.47)	.	1.63	.	0.035	.	0.021	.	0.057	0.765	.	.	0.011	0.040	.	0.0084	.	2.85	.	0.101
1	ECRM 691-1	64.39	.	0.475	.	0.999	.	0.0504	.	2.022	.	0.1734	.	0.0164	.	0.0877	.	0.0632	0.556	.	0.966	.
1	NCS DC14028d	64.37	20.96	.	1.10	.	1.17	.	0.036	.	1.30	0.147	.	.	0.017	0.013	.	0.371	.	2.95	0.294	.
1	NCS DC93025	64.17	31.34	.	0.29	.	0.56	.	0.012	.	0.49	0.032	.	.	0.011	0.033	.	0.624	.	9.43	.	0.049
1	NM 613C	64.03	.	.	3.11	.	0.24	.	.	.	0.35	0.025	.	.	.	0.023	.	0.013	3.63	.	.	.
1	VS R15/2	64.0	28.0	.	.	.	0.9	.	.	.	.	.	.	.	.	.	.	.	.	2.3	.	.
1	NCS DC28215	63.93	26.9	.	1.09	.	2.06	.	.	.	0.79	.	0.136	.	.	0.017	.	0.282	.	5.90	0.444	.
1	NCS DC14049	63.86	0.25	.	2.04	.	0.084	.	0.33	.	0.056	0.170	.	.	0.027	0.037	.	0.020	.	4.62	.	0.12
1	NCS DC28051	63.56	0.35	.	0.926	.	1.12	.	0.13	.	1.48	0.134	.	.	0.070	0.018	.	0.015	.	4.57	0.071	.
1	ASCRM 032	63.53	.	0.97	.	0.040	.	0.006	.	0.039	.	0.071	.	0.0085	.	0.074	.	0.011	1.81	.	0.043	.
1	NCS DC11005a	63.34	(0.07)	.	0.52	.	0.12	.	0.070	.	0.146	.	0.84	.	0.020	0.016	.	0.107	.	3.36	.	0.034
1	IMZ 360	63.36	25.3	.	0.356	.	2.77	.	0.039	.	0.63	0.098	.	.	0.027	0.019	.	0.074	.	5.4	.	0.023
1	NCS DC11017	63.33	1.76	.	1.13	.	1.05	.	0.115	.	1.30	.	0.086	.	0.070	0.011	.	0.0030	.	5.56	.	0.151
1	GIOP-141	63.226	.	.	1.8	.	0.036	.	0.0189	.	0.1003	0.0691	.	0.024	.	0.0665	.	0.0281	.	3.548	.	0.0574
1	NCS DC28224	63.20	1.4	.	1.02	.	0.86	.	.	.	0.50	.	0.083	.	.	0.020	.	0.015	.	6.55	0.319	.
1	NM 161.6	63.18	.	.	2.85	.	.	.	.	.	.	.	.	.	.	0.067	.	0.009	.	2.37	.	0.10
2	DH 1115	63.17	.	.	2.68	.	0.494	.	0.008	.	0.244	0.074	.	.	0.020	.	0.101	.	.	5.79	.	0.128
1	IMZ 330	63.09	1.19	.	0.13	.	1.04	.	0.18	.	0.23	0.012	.	.	0.073	0.013	.	0.003	.	8.26	.	0.01
1	NCS DC28003b	63.07	23.93	.	0.64	.	0.71	.	0.025	.	4.82	.	1.08	.	0.016	0.016	.	0.024	.	3.38	.	0.224
1	IMZ 331	63.05	1.55	.	0.24	.	3.78	.	0.092	.	0.21	0.028	.	.	0.037	0.015	.	0.107	.	5.11	.	0.017
1	GIOP-143	62.97	.	.	1.49	.	0.0348	.	0.00942	.	0.0475	0.1353	.	0.0121	.	0.064	.	0.01731	.	3.086	.	0.0531
1	IMZ 357	62.79	0.95	.	1.07	.	0.060	.	0.012	.	0.047	0.173	.	.	0.0098	0.058	.	0.0064	.	7.08	.	0.081
1	JSS 806-1	62.77	.	0.96	.	0.0197	.	0.0091	.	0.034	.	0.125	.	0.0115	.	0.083	.	0.019	1.55	.	0.044	.
1	IMZ 354	62.76	1.41	.	1.48	.	1.31	.	0.15	.	0.49	0.390	.	.	0.096	0.028	.	0.0149	.	4.78	.	0.68
1	GIOP-44	62.75	.	.	2.216	.	0.0255	.	0.0127	.	0.0571	0.0709	.	(0.02)	.	0.06267	.	0.0199	.	4.55	.	0.1064
~~1~~	~~VS 5403-90~~	~~62.74~~	~~25.74~~	~~.~~	~~0.73~~	~~.~~	~~0.89~~	~~.~~	~~.~~	~~.~~	~~0.65~~	~~0.162~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~3.89~~	~~.~~	~~7.14~~	~~.~~	~~0.055~~
1	NCS DC28003a	62.65	24.53	.	0.39	.	0.71	.	0.040	.	4.73	.	0.113	.	0.013	0.011	.	0.114	.	4.20	.	0.117
1	NCS DC28110	62.63	23.21	.	1.19	.	1.09	.	0.068	.	5.21	0.170	.	.	0.028	0.017	.	0.255	.	3.15	0.096	0.160
1	ASCRM 031	62.53	.	0.80	.	0.011	.	0.005	.	0.035	.	0.110	.	0.0010	.	0.062	.	0.025	1.29	.	0.032	.
1	GIOP-37	62.53	.	.	2.037	.	0.0341	.	0.0146	.	0.0446	0.0959	.	0.015	.	0.1097	.	0.0159	.	3.877	.	0.0615
1	NCS DC73007	62.51	21.54	.	1.02	.	0.18	.	0.037	.	0.28	0.061	.	.	0.016	0.11	.	0.0058	.	10.93	0.059	.

Number	As	Ba	C	Cl	Co	Cr	Cr_2O_3	Cu	Ni	Pb	V	V_2O_5	Zn	Zr	LOI	Units	Other
GIOP-127	0.0066	0.0072	.	0.0066	(0.0034)	0.007	.	0.0024	0.0042	0.0065	0.01274	.	0.0023	(0.0028)	1.834	10 g	Sr: 0.0036
NCS DC14001b	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	
NCS DC28113	0.013	.	.	.	.	.	.	0.047	.	.	.	.	0.0096	.	.	70 g	
IMZ 356	.	0.028	0.043	(0.0087)	(0.0023)	0.0028	.	0.0109	.	0.0015	0.0052	.	0.0066	.	2.37	100 g	
ECRM 691-1	Fe II: 20.71		0.307	.	.	0.0095	.	0.0768	0.0299	0.0008	0.0603	.	0.0195	.	.	100 g	
NCS DC14028d	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	
NCS DC93025	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
NM 613C	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
VS R15/2	.	.	.	.	.	.	.	.	.	.	.	0.6	.	.	.	100 g	
NCS DC28215	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	
NCS DC14049	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	65 g	
NCS DC28051	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	70 g	
ASCRM 032	0.0018	0.0037	.	0.0080	0.0008	0.0022	.	0.0009	0.0011	0.0008	0.0022	.	0.0022	0.0019	2.90	10x10 g	Sn: 0.0013 Sr: 0.0008
NCS DC11005a	0.0044	(0.62 BaO)	0.119	.	0.0031	.	.	0.034	.	0.035	.	.	0.026	.	.	50 g	
IMZ 360	.	0.0033	0.69	.	(0.0011)	0.0077	.	0.007	0.0041	0.011	(0.0013)	.	0.28	.	(-0.30)	100 g	
NCS DC11017	(0.0006)	.	.	.	.	.	.	0.0045	.	(0.0006)	.	.	0.0058	.	.	70 g	
GIOP-141	0.00195	(0.004)	.	0.0103	0.00159	0.0154	.	0.0043	0.0055	(0.0034)	0.0022	.	0.00282	0.0027	3.687	10 g	Sr: 0.0027
NCS DC28224	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	
NM 161.6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
DH 1115	.	.	.	.	.	.	0.005	.	.	.	.	0.010	.	.	.	100 g	
IMZ 330	.	(0.003)	0.016	.	.	0.003	.	0.0017	(0.002)	0.0016	.	.	0.002	.	-0.04	100 g	
NCS DC28003b	.	.	.	.	.	.	.	.	.	.	.	.	0.055	.	.	50 g	
IMZ 331	(0.0004)	0.0025	.	.	0.001	0.0051	.	0.0016	0.002	0.002	0.003	.	0.003	.	0.22	100 g	Sn: 11*
GIOP-143	(0.0016)	(0.0059)	.	0.009	0.00187	(0.0016)	.	(0.0021)	(0.0028)	(0.004)	0.0016	.	0.00168	(0.0018)	4.898	10 g	Sr: 0.0029
IMZ 357	(0.0006)	(0.0064)	0.054	.	.	0.0039	.	0.0014	(0.0019)	(0.0014)	0.0047	.	0.0019	.	2.14	100 g	
JSS 806-1	.	.	.	.	.	0.0033	.	0.0012	0.0013	.	0.0018	.	0.0020	.	4.4	150 g	FeII: 0.15
IMZ 354	.	(0.0042)	0.251	(0.0046)	(0.0023)	0.0064	.	0.0016	(0.0017)	(0.0009)	0.013	.	0.0017	.	0.97	100 g	
GIOP-44	.	.	.	0.0082	.	0.0033	.	0.0026	.	.	.	.	.	.	2.929	10 g	
~~VS 5403-90~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~0.32~~	~~.~~	~~.~~	~~.~~	~~.~~	~~0.029~~	~~.~~	~~.~~	~~50 g~~	~~Ag: 5.9* CO_2: 0.39~~
NCS DC28003a	.	.	.	.	.	.	.	0.0071	.	.	.	.	0.0085	.	.	50 g	
NCS DC28110	.	.	.	.	.	.	.	0.018	.	.	.	.	0.010	.	.	70 g	
ASCRM 031	0.0011	0.0029	.	0.0106	0.0012	0.0026	.	0.0011	0.0013	0.0006	0.0013	.	0.0018	0.0014	5.80	10x10 g	Sn: 0.0013 Sr: 0.0001
GIOP-37	.	.	.	0.0109	.	.	.	.	.	.	.	.	.	.	4.021	10 g	
NCS DC73007	.	.	.	.	.	.	.	(0.0015	.	.	.	.	.	.	.	50 g	

CRM **IRON ORE, chart 4 of 9** # = class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg

#	Number	Fe	FeO	Al	Al_2O_3	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	Na	Na_2O	P	P_2O_5	S	Si	SiO_2	Ti	TiO_2
1	GIOP-56	62.41	.	.	1.969	.	0.0369	.	0.0184	.	0.0513	0.2196	.	0.0174	.	0.0902	.	0.0164	.	3.594	.	0.06
1	GIOP-43	62.39	.	.	2.368	.	0.028	.	0.0134	.	0.0623	0.0821	.	(0.012)	.	0.0587	.	0.024	.	4.707	.	0.1213
1	IMS PBS-72	62.38	.	.	2.14	.	0.053	.	0.041	.	(0.081)	0.404	.	.	(0.023)	0.064	.	(0.020)	.	3.65	.	0.105
1	NCS DC15005	62.36	0.48	.	2.56	.	0.050	.	0.015	.	0.062	.	0.112	.	0.015	0.073	.	0.022	.	4.69	.	0.113
1	ASCRM 035	62.35	.	0.72	.	0.117	.	0.022	.	0.150	.	0.152	.	0.0565	.	0.078	.	0.057	1.99	.	0.046	.
1	NCS DC28026	62.27	0.59	.	2.39	.	0.144	.	0.023	.	0.156	0.17	.	.	0.024	0.078	.	0.02	.	4.2	0.055	.
1	IRSID 611-1	62.22	.	0.69	.	2.85	.	.	.	0.32	.	1.97	.	.	.	0.030	.	(0.008)	2.07	.	0.033	.
1	USZ 27-99	62.2	21.06	.	1.37	.	0.56	.	0.07	.	2.78	.	0.105	.	(0.04)	.	(0.016)	.	.	3.37	.	0.101
1	SARM 132	62.2	.	.	1.84	.	(0.086)	.	0.219	.	.	.	(0.0200)	.	(0.031)	0.054	.	.	.	7.82	.	(0.094)
1	GIOP-38	62.15	.	.	2.008	.	0.0407	.	0.023	.	0.07	0.5627	.	0.0195	.	0.0515	.	0.0256	.	3.101	.	0.0687
1	NCS DC28025	62.11	0.58	.	2.06	.	0.021	.	0.023	.	0.101	0.65	.	.	0.013	0.067	.	0.013	.	2.92	0.051	.
1	IMZ 332	62.10	1.61	.	0.32	.	0.39	.	0.117	.	0.71	0.026	.	.	0.050	0.010	.	0.003	.	9.63	.	0.027
1	NCS DC28216	62.01	26.9	.	1.46	.	3.65	.	.	.	1.10	.	0.176	.	.	0.020	.	0.258	.	6.74	0.388	.
1	DSZU RG36	62.01	0.67	.	0.84	.	0.051	.	0.017	.	0.48	.	0.026	.	0.079	0.015	.	0.0068	.	9.43	.	0.037
1	NCS DC11009a	61.96	15.13	.	0.914	.	0.375	.	0.093	.	0.364	.	0.947	.	0.024	0.027	.	0.212	.	4.92	.	0.447
1	GIOP-47	61.9	.	.	1.88	.	0.0151	.	0.0064	.	0.041	0.0782	.	(0.015)	.	0.0688	.	0.0199	.	2.809	.	0.0614
1	IMZ 333	61.87	1.65	.	0.33	.	0.34	.	0.11	.	0.73	0.034	.	.	0.057	0.008	.	0.001	.	10.07	.	0.026
1	GIOP-41	61.85	.	.	1.978	.	0.0368	.	0.0113	.	0.053	0.1078	.	0.018	.	0.1109	.	0.0335	.	3.043	.	0.0762
1	NCS DC28031	61.82	0.55	.	2.26	.	0.024	.	0.024	.	0.085	0.61	.	.	0.012	0.073	.	0.012	.	2.94	0.054	.
1	NCS DC18011	61.80	0.30	.	3.05	.	0.051	.	.	.	0.102	.	0.170	.	.	0.076	.	0.022	.	4.52	.	0.134
1	IMZ 359	61.74	3.17	.	0.25	.	2.93	.	0.061	.	0.86	0.028	.	.	0.079	0.0078	.	0.017	.	7.75	.	0.021
1	NCS DC14033	61.73	1.51	.	0.48	.	0.11	.	0.056	.	0.055	0.027	.	.	0.0056	0.024	.	0.036	.	9.82	0.041	.
1	GIOP-42	61.7	.	.	1.896	.	0.0172	.	(0.0049)	.	0.045	0.0541	.	0.018	.	0.0618	.	0.0137	.	2.743	.	0.0674
1	GIOP-46	61.699	.	.	1.854	.	0.0159	.	(0.0056)	.	0.045	0.0685	.	(0.012)	.	0.0684	.	0.0152	.	3.064	.	0.0656
1	NCS DC28053	61.68	0.24	.	0.84	.	0.33	.	0.071	.	0.38	0.042	.	.	0.046	0.017	.	0.020	.	10.32	0.063	.
1	GIOP-121	61.609	.	.	2.174	.	0.0207	.	0.0093	.	0.049	0.1915	.	0.011	.	0.0629	.	0.0168	.	2.986	.	0.0588
1	ASCRM 034	61.59	.	1.19	.	0.029	.	0.012	.	0.040	.	0.141	.	0.0117	.	0.082	.	0.024	2.00	.	0.054	.
1	GIOP-82	61.58	.	.	1.255	.	0.02	.	0.0097	.	0.04	0.2102	.	0.0172	.	0.0524	.	0.0155	.	3.079	.	0.697
1	NCS DC28024	61.53	0.24	.	2.12	.	0.118	.	0.026	.	0.109	0.276	.	.	0.034	0.068	.	0.038	.	3.43	0.052	.
1	GIOP-25	61.5	.	.	3.58	.	(<0.05)	.	0.028	.	0.055	0.023	.	.	.	0.023	.	0.017	.	5.28	.	0.135
1	NCS DC73006	61.46	(0.35)	.	1.68	.	0.52	.	0.098	.	0.77	0.072	.	.	0.080	0.019	.	(0.0067)	.	6.65	1.12	.
1	IMZ 340	61.45	3.40	.	2.37	.	1.22	.	(0.020)	.	2.40	0.15	.	.	0.066	(0.002)	.	.	.	4.20	.	2.45
1	OREAS 406	61.44	.	.	1.14	.	0.157	.	0.019	.	(0.037)	.	0.039	.	(0.017)	0.085	.	(0.006)	.	7.96	.	0.047
1	ECRM 688-1	61.38	.	0.679	.	1.449	.	0.180	.	1.061	.	0.0457	.	0.333	.	0.337	.	(0.0468)	3.383	.	0.408	.
1	NCS DC93023	61.34	29.68	.	0.45	.	0.64	.	0.018	.	(0.60)	0.056	.	.	0.012	0.036	.	0.494	.	12.36	.	0.064
1	GIOP-62	61.3	.	.	2.254	.	0.0628	.	0.0476	.	0.085	0.308	.	0.0209	.	0.0537	.	0.0348	.	4.282	.	0.1592
1	GIOP-115	61.28	.	.	1.748	.	0.2298	.	0.0205	.	0.1622	0.0166	.	0.0595	.	0.00882	.	0.0073	.	9.046	.	0.199
1	IMZ 361	61.16	3.4	.	2.60	.	0.074	.	0.0059	.	0.027	0.054	.	.	0.005	0.082	.	0.015	.	5.6	.	0.072
1	GIOP-51	61.126	.	.	2.096	.	0.0287	.	0.0114	.	0.049	0.274	.	0.0134	.	0.0665	.	0.0196	.	3.133	.	0.063
1	BAM 631-1	61.09	.	.	1.06	.	0.75	.	(0.04)	.	0.54	0.044	.	.	(0.04)	0.114	.	0.033	.	3.20	.	0.109
1	GIOP-124	61.051	.	.	2.529	.	0.0148	.	0.012	.	0.0679	0.0769	.	0.0193	.	0.0667	.	0.0178	.	3.535	.	0.0735
1	NCS DC28030	60.82	0.21	.	2.27	.	0.035	.	0.022	.	0.112	0.298	.	.	0.026	0.073	.	0.041	.	3.45	0.056	.
1	**IMS PBS-203**	60.67	.	.	1.62	.	0.067	.	0.215	.	0.096	4.29	.	.	0.056	0.041	.	0.017	.	2.20	.	0.101
1	GIOP-18	60.64	.	.	2.4	.	.	.	.	.	.	.	.	.	.	0.056	.	.	.	4.74	.	0.04
#	Number	Fe	FeO	Al	Al_2O_3	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	Na	Na_2O	P	P_2O_5	S	Si	SiO_2	Ti	TiO_2

Number	As	Ba	C	CO_2	Cl	Co	Cr	Cr_2O_2	Cu	Ni	Pb	V	V_2O_5	Zn	Zr	LOI	Units	Other	
GIOP-56	.	.	.	.	0.014	0.007	0.0038	.	.	.	.	.	.	0.00237	.	4.076	10 g		
GIOP-43	.	.	.	.	0.0088	.	0.0038	.	0.0027	.	.	.	.	.	.	3.167	10 g		
IMS PBS-72	(0.002)	(0.011)	.	.	(0.013)	(0.001)	(0.005)	.	(0.002)	(0.003)	(0.002)	0.020	.	(0.005)	(0.003)	3.89	250 g	Sr: 0.059	
NCS DC15005	.	.	.	.	.	.	.	.	0.0019	.	.	.	.	.	.	.	100 g		
ASCRM 035	0.0079	0.0017	.	.	0.0398	0.0018	0.0048	.	0.0087	0.0033	0.0005	0.0024	.	0.0029	0.0023	4.02	10x10 g	Sn: 0.0011	Sr: 0.0009
NCS DC28026	0.0013	.	.	.	.	0.001	0.0027	.	0.0015	0.0024	0.0004	.	.	0.0026	.	.	50 g		
IRSID 611-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g		
USZ 27-99	.	.	.	.	.	0.013	.	.	0.030	0.008	.	.	.	(0.013)	.	(1.46)	100 g		
SARM 132	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g		
GIOP-38	.	.	.	.	0.0124	.	0.0078	.	.	.	.	.	.	.	.	4.87	10 g		
NCS DC28025	0.0011	.	.	.	.	0.0015	0.0038	.	0.0018	0.0033	0.0008	.	.	0.0026	.	.	50 g		
IMZ 332	.	0.0036	0.012	.	.	.	0.005	.	0.0021	0.002	0.0016	(0.001)	.	0.0023	.	0.11	100 g		
NCS DC28216	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g		
DSZU RG36	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	(1.1)	150 g	Insoluble Residue: 10.0%	
NCS DC11009a	0.011	.	0.128	.	.	0.0061	.	.	0.063	.	0.042	.	.	0.054	.	.	50 g	BaO: (0.71)	
GIOP-47	.	.	.	.	.	.	0.00263	.	.	.	.	.	.	.	.	6.309	10 g		
IMZ 333	.	0.003	0.011	.	.	.	0.006	.	0.002	0.002	0.0015	0.001	.	0.0014	.	0.13	100 g		
GIOP-41	.	.	.	.	0.0125	.	.	.	.	.	.	.	.	.	.	5.784	10 g		
NCS DC28031	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	70 g		
NCS DC18011	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g		
IMZ 359	.	(0.0016)	0.036	.	0.018	(0.0014)	0.0023	.	(0.0006)	.	(0.0010)	0.0009	.	0.0018	.	-0.13	100 g		
NCS DC14033	.	.	.	.	.	0.0048	.	.	0.061	0.0023	.	.	.	.	.	.	50 g		
GIOP-42	.	.	.	.	.	.	0.00222	.	0.0032	.	.	.	.	.	.	6.76	10 g		
GIOP-46	.	.	.	.	.	.	0.0023	.	0.0027	.	.	.	.	.	.	6.385	10 g		
NCS DC28053	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	70 g		
GIOP-121	(0.0014)	(0.0056)	.	.	0.0088	(0.0015)	(0.0017)	.	(0.0016)	(0.0026)	(0.0012)	(0.001)	.	(0.0017)	(0.0021)	6.237	10 g		
ASCRM 034	0.0011	0.0055	.	.	0.0110	0.0009	0.0022	.	0.0009	0.0015	0.0012	0.0021	.	0.0016	0.0021	4.76	10x10 g	Sn: 0.0005	Sr: 0.0013
GIOP-82	.	.	.	.	0.0118	.	.	.	.	.	0.013	.	.	.	.	6.411	10 g		
NCS DC28024	0.0011	.	.	.	.	0.0009	0.0054	.	0.0014	0.0027	0.0008	.	.	0.002	.	.	50 g		
GIOP-25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.72	10 g		
NCS DC73006	.	.	.	.	.	.	.	.	0.0028	.	.	.	.	.	.	.	50 g		
IMZ 340	.	.	.	.	.	.	(0.068)	.	.	.	.	0.30	.	.	.	.	100 g		
OREAS 406	(0.001)	(0.00374)	.	.	(0.006)	(0.0009)	.	(0.002)	(0.0019)	(0.0058)	(0.00196)	(0.00114)	.	(0.00174)	(0.003)	2.69	10 g		
ECRM 688-1	(0.0011)	.	.	.	.	0.0096	(0.002)	.	0.0023	0.0136	0.00025	0.135	.	0.0015	(0.0015)	.	100 g		
NCS DC93023	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g		
GIOP-62	0.0068	0.0075	.	.	0.0184	.	0.0143	.	.	.	.	0.02073	.	0.0064	.	4.71	10 g		
GIOP-115	.	.	.	.	0.0536	.	.	.	.	.	.	0.00314	.	.	0.0187	0.817	10 g		
IMZ 361	.	0.003	0.288	.	.	(0.0005)	0.0031	.	(0.0013)	0.0013	0.0015	(0.0013)	.	0.0031	.	4.37	100 g		
GIOP-51	.	.	.	.	0.016	.	.	.	.	.	.	.	.	.	.	6.629	10 g		
BAM 631-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g		
GIOP-124	(0.0014)	(0.0036)	.	.	0.0136	(0.0027)	0.00166	.	(0.0021)	0.0022	(0.0025)	(0.00096)	.	0.0028	(0.0028)	6.203	10 g	Sr: 0.0034	
NCS DC28030	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	70 g		
IMS PBS-203	0.003	(0.024)	.	.	(0.023)	(0.004)	(0.004)	.	0.003	(0.008)	(0.003)	(0.009)	.	0.009	(0.003)	2.93	250 g	Sr: 0.009	**17034**
GIOP-18	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5.5	10 g		
Number	As	Ba	C	CO_2	Cl	Co	Cr	Cr_2O_2	Cu	Ni	Pb	V	V_2O_5	Zn	Zr	LOI	Units	Other	

CRM **IRON ORE, chart 5 of 9** # = class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg

#	Number	Fe	FeO	Al	Al_2O_3	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	Na	Na_2O	P	S	Si	SiO_2	Ti	TiO_2
1	GIOP-161	60.48	.	.	2.116	.	0.0234	.	0.00935	.	0.174	0.2674	.	(0.01)	.	0.0622	0.0189	.	2.911	.	1.63
1	GIOP-89	60.42	.	.	1.702	.	0.0606	.	0.0106	.	0.086	0.1927	.	0.0178	.	0.048	0.0155	.	3.922	.	0.344
1	NCS DC28002a	60.37	21.03	.	3.54	.	1.49	.	0.090	.	1.23	.	0.236	.	0.102	0.043	0.016	.	7.40	.	0.751
1	IMZ 342	60.32	20.1	.	0.48	.	4.51	.	0.058	.	0.86	0.080	.	.	0.042	0.017	0.15	.	5.93	.	0.045
1	GIOP-122	60.31	.	.	2.498	.	0.0337	.	0.0298	.	0.067	0.2252	.	0.0254	.	0.0637	0.0814	.	3.937	.	0.0848
1	GIOP-145	60.21	.	.	2.017	.	0.0291	.	0.00923	.	0.0654	0.2292	.	0.0131	.	0.05915	0.01967	.	3.571	.	0.0787
1	GIOP-87	60.16	.	.	2.247	.	0.0298	.	(0.0094)	.	0.0482	0.0344	.	(0.014)	.	0.0976	0.0114	.	3.147	.	0.096
1	ECRM 680-1	59.98	.	0.66	.	0.45	.	0.078	.	0.14	.	0.025	.	0.128	.	0.018	0.544	4.20	.	0.045	.
1	GIOP-45	59.93	.	.	2.024	.	0.0486	.	0.0123	.	0.0789	0.1189	.	0.0185	.	0.0505	0.0248	.	4.991	.	0.1078
1	GIOP-67	59.91	.	.	2.107	.	0.0528	.	(0.009)	.	0.112	0.1811	.	0.0165	.	0.0346	0.0198	.	4.849	.	0.0914
1	IMZ 262/1	59.73	.	.	0.71	.	0.42	.	.	.	0.83	(0.04)	0.044	.	.	(0.016)	(0.005)	.	12.28	.	.
1	NCS DC28036	59.71	0.62	.	2.76	.	0.317	.	0.042	.	0.233	0.192	.	.	0.086	0.078	0.090	.	5.18	0.066	.
1	GIOP-85	59.66	.	.	1.581	.	0.0496	.	0.00962	.	0.1054	0.2429	.	0.0168	.	0.044	0.0131	.	3.614	.	0.054
1	IRSID 606-1	59.66	.	0.34	.	1.04	.	.	.	0.32	.	2.59	.	.	.	0.026	0.033	1.04	.	0.019	.
1	GIOP-70	59.62	.	.	1.741	.	0.0834	.	0.0104	.	0.071	0.1706	.	0.0139	.	0.0413	0.0225	.	4.311	.	0.0588
1	SRM 692	59.6	.	.	1.42	.	0.022	.	0.039	.	0.036	.	0.458	.	0.007	0.038	(0.005)	.	10.17	.	0.044
1	NCS DC19003b	59.51	26.53	.	3.36	.	0.055	.	.	.	1.34	.	0.43	.	.	0.0049	0.013	.	1.40	.	10.21
1	GIOP-69	59.49	.	.	1.574	.	0.337	.	0.0162	.	0.089	0.2574	.	0.0301	.	0.0407	0.0598	.	3.346	.	0.0484
1	GIOP-66	59.49	.	.	1.553	.	0.0926	.	0.0107	.	0.052	0.1609	.	(0.013)	.	0.0439	0.0232	.	4.099	.	0.0454
1	GIOP-71	59.48	.	.	1.591	.	0.2672	.	0.0151	.	0.075	0.234	.	0.0223	.	0.0415	0.0474	.	3.571	.	0.0486
1	KZ 184-89	59.44	20.34	.	1.01	.	1.35	.	0.16	.	0.22	0.36	.	.	.	0.031	1.08	.	7.99	.	0.052
1	GIOP-144	59.43	.	.	1.81	.	0.0917	.	0.0109	.	0.0598	0.1963	.	0.0123	.	0.0475	0.0274	.	4.247	.	0.0627
1	GIOP-147	59.17	.	.	2.108	.	0.0295	.	0.0119	.	0.0659	0.1211	.	(0.0092)	.	0.0816	0.0217	.	4.449	.	0.2036
1	GIOP-76	59.2	.	.	2.435	.	0.0324	.	(0.0092)	.	0.051	0.0577	.	(0.013)	.	0.1237	0.0092	.	4.02	.	0.1096
1	GIOP-74	59.19	.	.	2.331	.	0.429	.	0.0184	.	0.108	0.0809	.	0.0227	.	0.0503	0.0371	.	4.565	.	0.113
1	GIOP-84	59.13	.	.	2.435	.	0.0504	.	0.0195	.	0.0602	0.354	.	0.0164	.	0.04696	0.0274	.	5.428	.	0.2216
1	IMZ 355	59.11	3.86	.	1.92	.	0.071	.	0.007	(0.030)	.	0.083	.	.	0.011	0.090	0.013	.	10.06	.	0.057
1	GIOP-88	59.11	.	.	2.081	.	0.097	.	0.010	.	0.1264	0.125	.	0.0185	.	0.04453	0.0146	.	4.593	.	0.399
1	GIOP-148	58.9	.	.	2.324	.	0.1025	.	0.0117	.	0.0594	0.1869	.	0.0131	.	0.0807	0.0302	.	4.452	.	0.1091
1	GIOP-138	58.89	.	.	3.261	.	0.0311	.	0.0123	.	0.0606	0.1264	.	0.0128	.	0.0535	0.287	.	4.487	.	0.1628
1	NCS DC14010b	58.84	18.69	.	2.30	.	1.82	.	0.214	.	1.18	0.60	.	.	0.057	0.022	0.088	.	7.73	.	0.460
1	NCS DC13034	58.79	26.09	.	0.54	.	1.77	.	.	.	0.30	.	0.061	.	.	0.584	0.047	.	14.47	.	0.014
1	IMZ 311	58.65	0.78	.	1.03	.	0.048	.	0.065	.	0.06	0.018	.	.	0.23	0.048	0.015	.	13.58	.	0.039
1	GIOP-17	58.48	.	.	3.3	.	.	.	.	.	.	.	.	.	.	0.060	.	.	6.13	.	0.06
1	ASCRM 033	58.45	.	0.80	.	0.047	.	0.002	.	0.058	.	0.029	.	0.0068	.	0.052	0.007	2.28	.	0.041	.
1	NCS DC28040	58.40	3.11	.	2.04	.	4.41	.	0.048	.	1.17	0.269	.	.	0.039	0.063	0.038	.	5.06	0.084	.
1	GIOP-125	58.292	.	.	3.916	.	0.0115	.	0.0304	.	0.0996	0.1876	.	0.0125	.	0.068	0.009	.	4.37	.	0.146
1	GIOP-81	58.21	.	.	2.559	.	0.095	.	0.01014	.	0.1224	0.0728	.	0.0166	.	0.0784	0.012	.	4.947	.	0.1288
1	GIOP-79	58.06	.	.	2.231	.	0.035	.	0.01039	.	0.067	0.0731	.	(0.019)	.	0.1131	0.0088	.	5.592	.	0.0927
1	OREAS 405	58.02	.	.	2.26	.	0.196	.	0.020	.	(0.062)	.	0.030	.	(0.014)	0.111	0.018	.	8.37	.	0.214
1	**IMS PBS-263**	57.92	.	.	2.40	.	0.038	.	0.040	.	0.147	0.510	.	.	0.066	0.256	0.016	.	3.68	.	0.057
1	**IMS PBS-268**	57.84	.	.	2.91	.	0.133	.	0.028	.	0.122	0.238	.	.	0.022	0.067	0.058	.	5.74	.	0.150
1	GIOP-78	57.83	.	.	2.484	.	0.2818	.	(0.0083)	.	0.165	0.0792	.	0.0167	.	0.0401	0.0146	.	5.017	.	0.1272
1	NCS DC14043	57.78	1.48	.	1.52	.	0.56	.	0.22	.	0.54	0.104	.	.	0.023	0.046	0.187	.	11.18	0.070	.
1	GIOP-73	57.77	.	.	3.548	.	0.1806	.	0.018	.	0.078	0.0967	.	0.0183	.	0.0538	0.0326	.	5.251	.	0.1846
1	IMZ 312	57.69	(0.72)	.	1.00	.	0.057	.	0.032	.	0.21	0.025	.	.	0.27	0.027	0.011	.	14.67	.	0.039
1	GIOP-146	57.65	.	.	3.716	.	0.0486	.	0.0179	.	0.102	0.1401	.	0.015	.	0.0457	0.02603	.	5.777	.	0.2016

#	Number	Fe	FeO	Al	Al_2O_3	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	Na	Na_2O	P	S	Si	SiO_2	Ti	TiO_2

Number	As	Ba	C	Cl	Co	Cr	Cr_2O_3	Cu	Ni	Pb	V	V_2O_5	Zn	Zr	LOI	Units	Other
GIOP-161	(0.0016)	0.0086	.	0.0092	0.00259	0.0319	.	(0.0024)	0.0037	(0.0049)	0.0382	.	0.00369	0.00283	6.017	10 g	Sr: 0.0108
GIOP-89	.	.	.	0.0093	.	.	.	.	.	.	.	.	0.0045	.	7.118	10 g	
NCS DC28002a	0.0012	.	.	.	.	0.068	.	0.0080	.	.	.	.	0.016	.	.	50 g	
IMZ 342	.	.	.	.	.	(0.008)	.	.	.	(0.03)	(0.003)	.	0.89	.	(0.46)	100 g	
GIOP-122	0.00497	(0.0071)	.	0.0078	(0.0018)	(0.0025)	.	0.0335	(0.0028)	(0.002)	(0.0012)	.	0.0034	(0.0027)	6.543	10 g	Sr: 0.0105
GIOP-145	(0.0016)	0.006	.	0.0083	0.00183	(0.0013)	.	(0.0018)	(0.0018)	(0.0051)	0.00203	.	0.00384	(0.0026)	7.658	10 g	Sr: 0.0204
GIOP-87	.	.	.	.	.	.	.	.	.	.	.	.	.	.	8.034	10 g	
ECRM 680-1	0.057	.	.	.	0.013	0.005	.	0.063	0.007	0.317	.	.	0.165	.	.	100 g	
GIOP-45	.	.	.	0.0149	.	0.0023	.	0.0025	.	.	.	.	.	.	6.615	10 g	
GIOP-67	.	.	.	0.0087	.	0.0037	.	.	.	.	.	.	0.0052	.	6.774	10 g	
IMZ 262/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
NCS DC28036	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	70 g	
GIOP-85	.	.	.	0.0059	0.0053	.	.	.	.	.	0.00604	.	.	.	8.808	10 g	
IRSID 606-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
GIOP-70	.	.	.	0.0081	.	.	.	.	.	.	.	.	.	.	8.069	10 g	
SRM 692	(0.0045)	.	.	.	(0.0010)	(0.0019)	.	(0.0045)	(0.0007)	.	(0.0049)	.	.	.	.	100 g	
NCS DC19003b	.	.	.	.	0.015	.	0.042	.	0.014	.	.	0.78	0.028	.	.	70 g	
GIOP-69	.	.	.	0.0251	.	.	.	.	.	.	.	.	.	.	8.933	10 g	
GIOP-66	.	.	.	.	.	.	.	.	.	.	.	.	.	.	8.691	10 g	
GIOP-71	.	.	.	0.0187	.	.	.	.	.	.	.	.	.	.	8.855	10 g	
KZ 184-89	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	CO2: 4.14
GIOP-144	(0.0015)	(0.0048)	.	0.0072	(0.0019)	(0.0012)	.	0.0025	(0.0021)	(0.0044)	(0.0013)	.	0.00346	0.0017	8.272	10 g	Sr: 0.0043
GIOP-76	.	.	.	.	.	.	.	.	.	.	.	.	.	.	8.236	10 g	
GIOP-147	(0.0022)	(0.0049)	.	0.0056	0.00179	(0.0018)	.	(0.0021)	(0.0019)	(0.0048)	0.00277	.	0.00419	0.004	8.078	10 g	Sr:(0.0028)
GIOP-74	.	.	.	0.0093	.	0.0042	.	.	.	.	.	.	.	.	7.434	10 g	
GIOP-84	.	0.0111	.	0.008	.	.	.	.	.	.	.	.	.	.	6.597	10 g	
IMZ 355	.	.	0.079	(0.0043)	.	0.0062	.	(0.0012)	.	0.0013	0.0013	.	0.0020	.	3.20	100 g	
GIOP-88	.	.	.	0.0082	.	.	.	.	.	.	.	.	0.0063	0.005	7.877	10 g	
GIOP-148	(0.0016)	(0.0041)	.	0.0073	(0.001)	0.00185	.	(0.0021)	(0.0021)	(0.0042)	0.00193	.	0.0027	0.0031	8.2	10 g	Sr: 0.0051
GIOP-138	0.0019	(0.0032)	.	0.0098	(0.0017)	0.0029	.	(0.0023)	0.00174	(0.0031)	0.00304	.	(0.002)	0.0035	7.363	10 g	Sr: 0.00226
NCS DC14010b	.	.	.	.	.	.	.	0.048	.	.	.	.	0.149	.	.	50 g	
NCS DC13034	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	
IMZ 311	0.0006	0.004	0.015	0.25	(0.0006)	0.004	.	0.0012	0.003	0.0014	0.0014	.	0.0017	.	-0.98	100 g	
GIOP-17	.	.	.	.	.	.	.	.	.	.	.	.	.	.	6.2	10 g	last
ASCRM 033	0.0019	0.0011	.	0.0045	0.0005	0.0012	.	0.0008	0.0011	0.0001	0.0031	.	0.0008	0.0022	9.52	10x10 g	Sr: 0.0004
NCS DC28040	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	70 g	
GIOP-125	(0.0027)	(0.0036)	.	(0.0021)	(0.0031)	0.0061	.	(0.0028)	0.0032	(0.002)	0.00212	.	0.0039	(0.0042)	7.644	10 g	Sr: 0.0105
GIOP-81	.	.	.	.	.	.	.	.	.	.	0.00316	.	0.0065	.	8.618	10 g	
GIOP-79	.	.	.	.	.	.	.	.	.	.	.	.	.	.	8.55	10 g	
OREAS 405	(0.001)	(0.003)	.	(0.005)	(0.000750)	.	102*	(0.002)	(0.004)	(0.0015)	(0.00289)	.	(0.0017)	(0.007)	5.61	10 g	Sr:(21.5*)
IMS PBS-263	0.029	(0.005)	.	0.057	0.006	0.010	.	0.018	0.017	(0.002)	0.002	**17034**	0.007	(0.008)	9.15	250 g	Sr: 0.007
IMS PBS-268	0.005	(0.004)	.	(0.014)	(0.001)	(0.005)	.	0.008	(0.005)	(0.001)	0.005	**17034**	0.008	(0.004)	7.44	2 kg	**COARSE**
GIOP-78	.	.	.	0.0073	.	.	.	.	.	.	0.00281	.	0.0076	.	8.967	10 g	
NCS DC14043	.	.	.	.	.	.	.	0.066	.	.	.	.	.	.	.	50 g	
GIOP-73	.	.	.	0.0105	.	0.0049	.	.	.	.	.	.	.	.	7.766	10 g	
IMZ 312	(0.0007)	0.0022	0.024	0.31	0.0003	0.006	.	0.0014	0.0022	0.0011	0.0019	.	0.0022	.	-1.20	100 g	
GIOP-146	(0.0016)	(0.0036)	.	0.0105	0.0017	0.00388	.	(0.0023)	(0.0013)	(0.0044)	0.0039	.	0.00308	0.00397	7.347	10 g	Sr: 0.0034

| Number | As | Ba | C | Cl | Co | Cr | Cr_2O_3 | Cu | Ni | Pb | V | V_2O_5 | Zn | Zr | LOI | Units | Other |

CRM **IRON ORE, chart 6 of 9** # = class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg

#	Number	Fe	FeO	Al	Al_2O_3	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	Na	Na_2O	P	S	Si	SiO_2	Ti	TiO_2
1	VS R36	57.47	0.73	.	0.71	.	0.037	.	0.015	.	0.39	.	0.024	.	0.076	0.0138	0.0064	.	16.28	.	0.031
1	NCS DC28081	57.41	1.89	.	5.11	.	0.34	.	0.150	.	0.142	.	0.228	.	0.045	0.054	0.018	.	7.31	.	0.230
1	GIOP-86	57.26	.	.	2.657	.	0.1514	.	0.0107	.	0.1758	0.085	.	0.0184	.	0.03934	0.0139	.	5.752	.	0.1434
1	GIOP-75	57.23	.	.	2.649	.	0.1564	.	0.01048	.	0.1778	0.0875	.	0.0182	.	0.0394	0.014	.	5.761	.	0.143
1	GIOP-68	57.18	.	.	4.126	.	0.0414	.	0.0173	.	0.063	0.1027	.	0.0163	.	0.0555	0.0293	.	5.51	.	0.2228
1	GIOP-61	57.14	.	.	2.523	.	0.1735	.	0.0194	.	0.068	0.228	.	0.0199	.	0.0426	0.0388	.	5.946	.	0.115
1	JSS 821-1	57.05	.	1.24	.	0.159	.	0.0055	.	0.113	.	0.085	.	0.0095	.	0.0415	0.0108	2.28	.	0.0718	.
1	ECRM 689-1	57.05	.	1.185	.	1.183	.	0.462	.	0.980	.	0.1196	.	0.638	.	0.0706	.	(5.4)	.	0.3264	.
1	ASCRM 030	56.76	.	1.42	.	0.245	.	0.009	.	0.108	.	0.079	.	0.0170	.	0.038	0.021	2.71	.	0.089	.
1	JSS 831-2	56.64	1.97	FeII:	21.82	1.05	.	0.061	.	2.09	.	0.501	.	0.082		0.153	0.0049	1.93	.	4.51	.
1	NCS DC73005	56.60	20.50	.	0.99	.	1.36	.	0.071	.	3.62	0.076	.	.	0.058	0.017	2.44	.	11.48	0.043	.
1	GIOP-142	56.58	.	.	3.032	.	0.2678	.	0.0109	.	0.218	0.0892	.	0.0126	.	0.0412	0.01404	.	6.704	.	0.1782
1	NCS DC28212	56.29	26.9	.	2.53	.	8.04	.	.	.	1.96	.	0.289	.	.	0.032	0.197	.	8.86	.	0.208
1	GIOP-137	56.285	.	.	6.029	.	0.966	.	0.0691	.	0.5292	0.04	.	0.2205	.	0.0579	0.0209	.	7.946	.	0.3815
1	NCS DC28112	56.23	24.15	.	1.39	.	2.73	.	0.133	.	4.89	0.132	.	.	0.070	0.023	0.369	.	7.81	0.620	1.03
1	JSS 820-5	56.17	.	1.63	.	0.112	.	0.0172	.	0.073	.	0.067	.	0.0132	.	0.031	0.0182	2.81	.	0.092	.
1	IMS PBS-73	56.06	.	.	3.19	.	0.129	.	0.027	.	(0.090)	0.138	.	.	0.096	0.076	0.038	.	6.77	.	0.111
1	NCS DC11018	56.02	7.78	.	2.20	.	9.89	.	0.038	.	2.87	.	0.355	.	0.057	0.058	0.023	.	4.50	.	0.108
1	IMZ 313	55.85	0.68	.	1.13	.	0.079	.	0.030	.	0.31	0.03	.	.	0.23	0.031	0.0085	.	17.29	.	0.044
1	NCS DC15002a	55.81	1.86	.	1.93	.	1.10	.	0.433	.	0.36	.	0.026	.	0.33	0.011	0.469	.	13.00	.	0.083
1	VS R5/6	55.8	9.81	.	2.57	.	9.30	.	.	.	1.95	.	0.86	.	.	0.029	0.035	.	5.71	.	0.29
1	**IMS PBS-202**	55.48	.	.	2.60	.	1.43	.	0.191	.	1.05	0.576	.	.	0.034	0.202	0.095	.	4.29	.	0.192
1	IMS PBS-31	55.24	.	.	6.03	.	0.062	.	0.020	.	(0.096)	0.231	.	.	(0.072)	0.038	0.066	.	4.26	.	0.185
1	NCS DC19016	55.23	1.01	.	3.07	.	1.08	.	0.123	.	1.88	.	0.199	.	0.173	0.037	0.0087	.	6.43	.	7.69
1	GIOP-136	55.22	.	.	6.493	.	1.055	.	0.0757	.	0.5767	0.0402	.	0.241	.	0.0578	0.0241	.	8.632	.	0.4166
1	OREAS 404	55.14	.	.	2.97	.	0.102	.	(0.008)	.	(0.074)	.	(0.007)	.	(0.014)	0.151	0.032	.	7.88	.	0.385
1	IMZ 343	55.09	6.37	.	0.74	.	10.93	.	0.037	.	1.21	0.0200	.	.	(0.040)	0.030	0.021	.	9.31	.	0.032
1	NCS DC28225	54.96	10.7	.	2.93	.	11.49	.	.	.	0.98	.	0.171	.	.	0.050	0.032	.	5.89	.	0.152
1	NCS DC18018	54.90	7.87	.	2.34	.	10.36	.	.	.	2.41	.	0.29	.	.	0.064	0.036	.	5.81	.	0.50
1	NCS DC11004a	54.86	1.17	.	2.85	.	0.630	.	0.26	.	0.524	.	1.04	.	0.047	0.119	0.258	.	8.27	.	0.120
1	VS 5405-90	54.83	.	.	2.04	.	.	.	0.33	.	0.29	0.62	.	.	.	0.034	0.018	.	16.23	.	0.092
1	NCS DC11006a	54.74	3.90	.	1.48	.	1.02	.	0.214	.	0.657	.	1.31	.	0.048	0.036	0.439	.	8.53	.	0.154
1	NCS DC18019	54.03	7.98	.	2.57	.	10.50	.	.	.	2.71	.	0.70	.	.	0.073	0.027	.	6.11	.	0.24
1	NM 161.5	53.85	.	.	7.53	.	.	.	.	.	.	.	.	.	.	0.071	0.008	.	7.13	.	0.29
1	IMS PBS-28	53.74	.	.	4.34	.	0.058	.	0.073	.	(0.094)	0.851	.	.	(0.098)	0.074	0.029	.	7.12	.	0.190
1	IRSID 603-1	53.65	.	4.20	.	(0.91)	.	.	.	(0.2)	.	0.440	.	.	.	0.084	0.097	1.28	.	0.137	.
1	NCS DC28034	53.42	15.27	.	0.57	.	0.31	.	0.086	.	11.21	0.065	.	.	0.25	0.018	0.192	.	5.22	0.044	.

#	Number	Fe	FeO	Al	Al_2O_3	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	Na	Na_2O	P	S	Si	SiO_2	Ti	TiO_2

Number	As	Ba	C	Cl	Co	Cr	Cr_2O_3	Cu	Ni	Pb	V	V_2O_5	Zn	Zr	LOI	Units	Other
VS R36	.	.	.	.	.	.	.	.	.	.	.	.	Insoluble Residue:		16.5	100 g	
NCS DC28081	0.0014	.	.	.	.	0.032	.	0.0038	.	.	.	.	0.0027	.	.	50 g	
GIOP-86	.	.	.	.	.	.	.	.	.	.	0.00336	.	0.0094	.	8.94	10 g	
GIOP-75	.	.	.	.	.	.	.	.	.	.	0.00312	.	0.0092	.	8.954	10 g	
GIOP-68	.	.	.	0.011	.	0.0051	.	.	.	.	0.00353	.	.	.	7.876	10 g	
GIOP-61	.	.	.	0.0094	.	.	.	.	.	.	.	.	0.0042	.	8.961	10 g	
JSS 821-1	.	.	.	.	.	0.0027	.	0.0007	0.0035	0.0006	0.0040	.	0.0074	.	9.16	70 g	
ECRM 689-1	.	.	.	.	0.0103	.	.	0.0068	0.0195	.	0.1020	.	0.0042	.	.	100 g	
ASCRM 030	0.0014	0.0034	.	0.0101	0.0014	0.0020	.	0.0016	0.0019	0.0008	0.0042	.	0.0096	0.0037	9.24	10x10 g	Sr: 0.0010
JSS 831-2	.	.	.	.	.	0.028	.	0.0068	0.0077	.	0.299	.	0.074	.	(0.11)	100 g	
NCS DC73005	.	.	.	.	.	.	.	0.068	.	.	.	.	.	.	.	50 g	
GIOP-142	(0.0015)	(0.0052)	.	(0.0035)	0.00182	0.00206	.	(0.0019)	0.002	(0.0038)	0.00499	.	0.00871	0.0054	8.368	10 g	Sr:0.004
NCS DC28212	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	
GIOP-137	(0.001)	0.0053	.	(0.0032)	(0.0017)	0.0051	.	(0.0019)	0.00175	(0.0026)	0.00726	.	0.00233	0.0079	3.111	10 g	Sr: 0.0056
NCS DC28112	0.167	.	.	.	.	.	.	0.527	.	.	.	.	0.037	.	.	70 g	
JSS 820-5	.	.	.	.	.	0.0032	.	0.00068	0.0023	0.00065	0.0042	.	0.0032	.	8.78	70 g	
IMS PBS-73	(0.022)	0.039	.	(0.082)	0.042	0.043	.	0.049	0.046	0.056	0.034	Sr:0.070	0.057	(0.045)	8.36	250 g	Sn: 0.045
NCS DC11018	0.0014	.	.	.	.	.	.	0.0044	.	0.0031	.	.	0.065	.	.	70 g	
IMZ 313	(0.0008)	0.0017	0.031	(0.29)	0.0002	0.0067	.	0.0015	0.0024	0.0009	(0.001)	.	0.0028	.	-1.31	100 g	
NCS DC15002a	0.23	.	.	.	.	.	.	0.134	.	0.319	.	.	0.161	.	.	50 g	
VS R5/6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	150 g	
IMS PBS-202	0.013	(0.006)	.	(0.018)	(0.004)	0.007	.	0.002	0.010	0.004	0.007	.	0.014	(0.005)	9.46	250 g	**17034**
IMS PBS-31	0.081	(0.002)	.	(0.055)	(0.003)	.	0.009	(0.002)	(0.005)	(0.003)	(0.006)	.	0.019	(0.007)	9.56	250 g	
NCS DC19016	.	.	.	.	0.010	.	0.34	.	0.021	.	.	0.51	0.033	.	.	100 g	
GIOP-136	(0.001)	0.0056	.	0.0036	(0.0018)	0.00537	.	(0.0016)	0.00194	(0.003)	0.00768	.	0.00257	0.0087	3.266	10 g	Sr: 0.0053
OREAS 404	(0.00176)	(0.00312)	.	(0.00379)	.	.	0.0124	(0.0018)	(0.0031)	(0.0006)	(0.00422)	.	(0.0018)	(0.0107)	9.40	10 g	Sr:(23.6*)
IMZ 343	.	.	.	.	.	0.004	.	.	.	.	.	.	0.005	.	.	100 g	
NCS DC28225	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	
NCS DC18018	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
NCS DC11004a	0.096	(BaO:0.86)	0.310	.	0.0054	.	.	0.066	.	0.101	.	.	0.144	.	.	50 g	
VS 5405-90	.	.	.	.	.	.	.	.	.	0.23	.	.	0.089	.	.	50 g	Ge: 5.1*
NCS DC11006a	0.215	(BaO:1.08)	0.227	.	0.0086	.	.	0.102	.	0.182	.	.	0.30	.	.	50 g	
NCS DC18019	0.021	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
NM 161.5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
IMS PBS-28	(0.003)	(0.010)	.	0.080	(0.002)	.	(0.007)	(0.002)	(0.005)	(0.003)	(0.003)	.	(0.008)	(0.003)	9.75	250 g	
IRSID 603-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
NCS DC28034	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	70 g	B_2O_3: 3.62

| Number | As | Ba | C | Cl | Co | Cr | Cr_2O_3 | Cu | Ni | Pb | V | V_2O_5 | Zn | Zr | LOI | Units | Other |

CRM **IRON ORE, chart 7 of 9** # = class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg

#	Number	Fe	FeO	Al	Al_2O_3	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	Na	Na_2O	P	S	Si	SiO_2	Ti	TiO_2
1	SARM 147	52.67	.	.	0.96	.	7.05	.	(0.21)	.	5.28	.	0.23	.	.	.	0.13	.	3.35	.	1.72
1	OREAS 403	52.31	.	.	2.63	.	0.106	.	0.011	.	0.077	.	(0.007)	.	(0.015)	0.123	0.026	.	13.67	.	0.289
1	NCS DC11007a	52.24	4.21	.	6.84	.	0.561	.	0.61	.	0.606	.	0.194	.	0.093	0.346	0.094	.	10.20	.	0.237
1	IMZ 263/1	52.10	.	.	1.14	.	0.17	.	.	.	0.17	(0.04)	0.045	.	.	(0.026)	0.036	.	22.78	.	.
1	**IMS PBS-222**	52.08	.	.	9.60	.	0.073	.	0.024	.	0.080	0.126	.	.	0.027	0.039	0.034	.	9.33	.	0.760
1	NCS DC11029	51.67	27.30	.	4.97	.	0.52	.	0.0081	.	2.02	.	0.238	.	0.023	0.046	0.259	.	4.06	.	13.54
1	ECRM 677-1	51.54	.	0.32	.	0.038	.	0.008	.	0.012	.	0.016	.	0.007	.	0.0170	(0.005)	11.78	.	0.013	.
1	NCS DC28064	51.48	0.25	.	5.65	.	0.014	.	.	.	0.70	0.70	.	.	.	0.0045	0.17	.	2.30	.	0.15
1	NCS DC28067	51.36	0.26	.	4.16	.	0.022	.	.	.	1.05	0.80	.	.	.	0.0055	0.095	.	3.11	.	0.091
1	IMS PBS-29	51.21	.	.	3.69	.	0.085	.	0.090	.	(0.093)	1.284	.	.	(0.052)	0.054	0.030	.	12.56	.	0.245
1	NCS DC28083	50.98	8.92	.	5.03	.	3.44	.	.	.	1.05	.	0.306	.	.	0.963	0.112	.	9.40	.	0.125
1	NCS DC28111	50.94	20.67	.	1.42	.	4.85	.	0.204	.	3.95	0.098	.	.	0.14	0.033	0.430	.	13.83	0.065	0.108
1	NCS DC28213	50.92	19.9	.	3.28	.	6.90	.	.	.	3.40	.	0.943	.	.	0.050	0.130	.	13.68	.	0.241
1	CGL 206	50.87	Sr:0.002238		1.25	.	5.87	.	0.24	.	4.93	.	0.11	.	(0.10)	.	(2.60)	.	5.86	.	0.08
1	GIOP-15	50.68	.	.	4.1	.	.	.	.	.	.	.	.	.	.	0.032	.	.	20.10	.	0.04
1	VS R33	50.42	.	.	.	.	8.35	.	.	.	1.33	.	.	.	.	0.039	3.10	.	10.62	.	.
1	NCS DC28082	49.53	0.05	.	7.45	.	0.032	.	.	.	0.107	.	3.39	.	.	0.083	0.029	.	7.44	.	0.370
1	NCS DC73004	49.50	7.66	.	2.58	.	0.91	.	0.91	.	0.98	0.198	.	.	0.035	0.138	0.065	.	16.30	0.083	.
1	GIOP-36	49.5	.	.	5.51	.	0.011	.	.	.	2.657	0.200	.	.	.	0.008	0.014	.	0.85	.	20.10
1	GIOP-35	49.4	.	.	5.53	.	.	.	.	.	2.569	0.200	.	.	.	0.008	0.014	.	0.85	.	20.20
1	NCS DC11030	49.12	26.44	.	5.09	.	1.16	.	0.023	.	2.30	.	0.240	.	0.073	0.179	0.382	.	5.52	.	12.80
1	NCS DC18017	48.44	11.17	.	2.98	.	15.52	.	.	.	2.32	.	0.81	.	.	0.065	0.155	.	8.40	.	0.23
1	OREAS 402	48.41	.	.	2.49	.	0.090	.	0.010	.	0.072	.	(0.007)	.	(0.016)	0.119	0.024	.	19.77	.	0.288
1	NCS DC28082a	48.00	0.05	.	3.44	.	0.15	.	.	.	0.268	.	3.40	.	.	0.076	0.111	.	12.74	.	0.146
1	NCS DC15004	47.86	21.99	.	1.12	.	1.72	.	0.062	.	0.96	.	0.082	.	0.043	0.032	0.235	.	28.01	.	0.070
1	NCS DC26706	47.72	.	.	4.65	.	0.13	.	.	.	2.34	0.89	.	.	.	0.0027	0.12	.	5.16	.	.
1	GIOP-134	47.52	.	.	9.953	.	1.688	.	0.1171	.	0.934	0.05982	.	0.3921	.	0.0577	0.0258	.	13.474	.	0.6576
1	IMZ 341	47.52	.	.	1.22	.	0.52	.	0.11	.	0.35	0.021	.	.	(0.09)	0.164	0.006	.	28.49	.	0.041
1	NCS DC28108	46.93	19.95	.	2.05	.	7.12	.	0.33	.	5.54	0.058	.	.	0.220	0.039	0.637	.	14.75	0.067	0.112
1	NCS DC11031	46.74	24.39	.	5.49	.	1.18	.	0.021	.	2.60	.	0.226	.	0.057	0.101	0.21	.	8.19	.	12.24
1	OREAS 401	45.63	.	.	2.36	.	0.094	.	0.010	.	0.061	.	(0.007)	.	(0.016)	0.105	0.022	.	24.88	.	0.247
1	GIOP-133	45.481	.	.	10.86	.	1.863	.	0.1277	.	1.029	0.06048	.	0.4342	.	0.0573	0.0277	.	14.796	.	0.7211
1	NCS DC62001d	44.99=Fe_2O_3		.	4.37	.	9.92	.	0.89	.	1.55	.	.	.	0.37	.	SO3:3.15	.	26.64	.	0.27
1	NCS DC11001	44.73	12.91	.	0.75	.	7.14	.	.	.	4.18	.	0.20	.	.	0.013	1.50	.	18.22	.	.
1	NM 161.4	44.58	.	.	12.40	.	0.41	.	.	.	0.24	.	.	.	.	0.092	0.008	.	12.23	.	0.50
1	IMS PBS-11	44.56	.	.	6.12	.	0.146	.	0.122	.	(0.118)	0.814	.	.	(0.028)	0.047	0.033	.	21.51	.	0.528
1	AMIS 0346	44.34	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	15.02	.
1	IMZ 264/1	44.25	.	.	1.14	.	0.23	.	.	.	0.22	(0.04)	0.043	.	.	0.025	0.055	.	33.56	.	.
1	GIOP-132	43.12	.	.	11.89	.	2.062	.	0.1405	.	1.141	0.0608	.	0.4797	.	0.0567	0.0302	.	16.33	.	0.7943
1	NCS DC19013	42.89	.	.	4.10	.	0.124	.	.	.	0.517	.	1.67	.	.	0.099	.	.	22.06	.	0.26

Number	As	Ba	CO_2	Cl	Co	Cr	Cr_2O_3	Cu	Ni	NiO	Pb	V	V_2O_5	Zn	ZnO	Zr	LOI	Units	Other
SARM 147	.	.	C:1.36	.	.	.	.	CuO:(0.13)	.	(0.04)	.	.	0.104	.	.	.	3.37	100 g	P_2O_5: 1.17
OREAS 403	(0.00137)	.	.	(0.00366)	.	.	0.0109	(0.0016)	(0.0020)	.	(0.0018)	0.00345	.	(0.0020)	.	(0.0085)	8.00	10 g	
NCS DC11007a	0.051	.	C:0.549	.	0.0043	.	.	0.015	.	.	0.034	.	.	0.066	.	.	.	50 g	BaO: (0.028)
IMZ 263/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
IMS PBS-222	0.005	(0.002)	.	(0.007)	(0.001)	.	(0.007)	0.002	(0.002)	.	(0.003)	0.007	0.002	.	**17034**	(0.018)	5.22	250 g	Sr: 0.008
NCS DC11029	.	.	.	.	.	.	.	.	.	.	.	.	0.590	0.045	.	.	.	70 g	
ECRM 677-1	.	.	.	.	.	.	.	.	(0.0015)	.	.	.	.	.	.	.	.	100 g	
NCS DC28064	.	.	.	.	0.10	1.80	.	.	0.72	.	.	.	.	.	.	.	.	50 g	
NCS DC28067	.	.	.	.	0.098	2.00	.	.	0.94	.	.	.	.	.	.	.	.	50 g	
IMS PBS-29	(0.004)	(0.012)	.	(0.027)	(0.002)	.	(0.009)	(0.002)	(0.005)	.	(0.003)	(0.006)	(0.008)	.	.	(0.007)	7.86	250 g	
NCS DC28083	.	.	C:0.89	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	
NCS DC28111	0.083	.	.	.	.	.	.	0.305	.	.	.	.	.	0.017	.	.	.	70 g	
NCS DC28213	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	
CGL 206	(0.00270)	(0.00251)	.	.	0.00905	(0.00202)	.	0.04181	0.01143	.	0.004446	0.02655	.	0.07032	.	.	(4.59)	100 g	P_2O_5: 0.048
GIOP-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.3	10 g	
VS R33	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
NCS DC28082	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	C: 0.071
NCS DC73004	.	.	.	.	.	.	.	0.0014	.	.	.	.	.	.	.	.	.	50 g	
GIOP-36	.	.	.	0.008	0.022	0.067	.	.	0.038	.	.	0.313	.	0.063	.	.	-0.64	10 g	
GIOP-35	.	.	.	0.008	0.022	0.068	.	.	0.038	.	.	0.313	.	0.062	.	.	-0.51	10 g	Sn: 0.003
NCS DC11030	.	.	.	.	.	.	.	.	.	.	.	.	0.553	0.043	.	.	.	70 g	
NCS DC18017	0.030	.	.	.	.	.	.	.	.	.	0.061	.	.	0.13	.	.	.	100 g	
OREAS 402	(0.00114)	.	.	(0.00343)	.	.	0.0109	(0.0018)	(0.00148)	.	(0.00090)	(0.00351)	.	(0.00193)	.	(0.0083)	7.64	10 g	
NCS DC28082a	.	.	.	.	.	.	.	.	.	.	0.283	.	.	0.49	.	.	.	50 g	C: 0.072
NCS DC15004	.	.	.	.	.	.	.	0.0023	.	.	.	.	.	.	.	.	.	100 g	
NCS DC26706	.	.	.	.	0.14	2.34	.	.	1.05	.	.	.	.	.	.	.	.	25 g	C: 0.25
GIOP-134	(0.001)	0.008	.	0.0036	(0.0015)	0.0077	.	(0.002)	0.00227	.	(0.0027)	0.0122	.	0.00251	.	0.0125	4.452	10 g	Sr: 0.007
IMZ 341	.	.	C:(0.037)	.	.	.	.	.	.	.	.	.	.	.	.	.	(1.1)	100 g	
NCS DC28108	.	.	.	.	.	.	.	0.119	.	.	.	.	.	0.0038	.	.	.	70 g	
NCS DC11031	.	.	.	.	.	.	.	.	.	.	.	.	0.539	0.041	.	.	.	70 g	
OREAS 401	(0.00109)	.	.	(0.00328)	.	.	0.0107	(0.0018)	(0.00289)	.	(0.00112)	(0.00322)	.	(0.00211)	.	(0.0074)	6.71	10 g	
GIOP-133	(0.001)	0.0081	.	0.00357	(0.0014)	0.00784	.	(0.0013)	0.00233	.	(0.0021)	0.129	.	0.00297	.	0.136	4.762	10 g	Sr: 0.0075
NCS DC62001d	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	7.51	20 g	
NCS DC11001	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	60 g	
NM 161.4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
IMS PBS-11	(0.003)	(0.013)	.	(0.009)	(0.001)	.	(0.021)	(0.003)	(0.004)	.	(0.004)	0.011	(0.006)	.	.	(0.014)	6.28	250 g	
AMIS 0346	.	.	.	.	.	.	.	.	.	.	.	0.27	.	.	.	Density:	4.39	100 g or 1kg	
IMZ 264/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
GIOP-132	(0.001)	0.0083	.	0.00413	(0.0016)	0.0089	.	0.0021	0.00263	.	(0.003)	0.0155	.	0.00319	.	0.0156	5.101	10 g	Sr: 0.0086
NCS DC19013	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	

CRM **IRON ORE, chart 8 of 9** # = class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg

#	Number	Fe	FeO	Al	Al_2O_3	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	Na	Na_2O	P	S	Si	SiO_2	Ti	TiO_2
1	IRSID 612-1	42.4	.	3.00	.	12.06	.	.	.	1.20	.	0.363	.	.	.	0.885	0.053	5.94	.	0.151	.
1	NCS DC18020	41.81	21.87	.	3.23	.	18.30	.	.	.	4.85	.	1.80	.	.	0.159	0.302	.	10.21	.	0.50
1	IMS PBS-30	41.13	.	.	4.57	.	0.070	.	0.382	.	(0.089)	12.78	.	.	(0.093)	0.038	0.033	.	7.02	.	0.231
1	GIOP-131	41.08	.	.	12.77	.	2.23	.	0.151	.	1.231	0.0612	.	0.5184	.	0.0561	0.0329	.	17.619	.	0.8557
1	NCS DC73003	40.51	(14.5)	.	2.27	.	2.00	.	0.27	.	2.22	0.122	.	.	0.16	0.032	0.94	.	33.93	0.067	.
1	NCS DC28065	39.68	0.10	.	9.98	.	0.30	.	.	.	2.54	0.59	.	.	.	0.010	0.23	.	10.00	.	0.14
1	KZ 182-89	38.63	1.61	.	1.04	.	0.14	.	0.11	.	.	0.044	.	.	.	0.065	.	.	42.64	.	0.144
1	VS R8/3	38.2	.	.	10.35	.	0.89	.	.	.	2.17	.	0.432	.	.	0.165	0.031	.	16.57	.	0.85
1	IMZ 265/1	37.74	.	.	3.10	.	1.50	.	.	.	0.53	0.056	.	.	.	0.039	0.047	.	37.02	.	.
1	IRSID 601-1	36.76	.	2.33	.	4.05	.	.	.	1.21	.	0.370	.	.	.	0.590	0.065	8.95	.	0.114	.
1	NCS DC13033	35.36	5.18	.	(0.11)	.	(0.13)	.	.	.	0.20	.	0.125	.	.	0.022	0.0064	.	48.50	.	0.007
1	KZ 183-89	35.16	1.32	.	1.66	.	.	.	0.35	.	.	0.046	.	.	.	0.019	0.7	.	41.56	.	0.073
1	VS R20/3	34.7	.	.	0.67	.	2.54	Magnetic Iron: 27.6%			3.42	.	.	.	.	.	0.073	.	37.6	.	.
1	NCS DC28069	34.18	0.11	.	2.39	.	0.12	.	.	.	12.12	0.78	.	.	.	0.0015	0.082	.	18.28	.	0.030
1	NCS DC11013	34.07	20.15	.	0.74	.	0.99	.	0.165	.	2.86	.	0.093	.	0.065	0.054	0.118	.	48.27	.	0.043
1	VS R24/2	33.73	.	.	1.52	.	2.12	.	.	.	8.29	.	.	.	.	0.0055	0.065	.	5.46	.	.
1	VS R9/1	33.48	42.9	.	0.86	.	2.29	.	.	.	9.64	.	.	.	.	0.0051	0.059	.	3.47	.	.
1	GIOP-110	33.21	.	.	0.0893	.	1.417	.	0.0159	.	1.778	0.021	.	0.0152	.	0.0928	0.0042	.	50.09	.	0.0141
1	GIOP-98	32.63	.	.	0.1008	.	1.409	.	0.0121	.	1.875	0.0179	.	0.0163	.	0.1103	0.0273	.	50.88	.	0.138
1	GIOP-107	32.23	.	.	0.246	.	3.523	.	0.0135	.	1.257	0.037	.	0.0279	.	0.0497	0.1871	.	49.76	.	0.014
1	GIOP-113	32.11	.	.	0.5359	.	2.403	.	0.0218	.	2.343	0.1712	.	0.0276	.	0.0793	0.453	.	48.98	.	0.0298
1	GIOP-99	31.7	.	.	0.2553	.	1.5672	.	0.039	.	1.967	0.0248	.	0.0197	.	0.1006	0.003	.	51.54	.	0.0278
1	GIOP-105	31.04	.	.	0.438	.	1.841	.	0.075	.	2.289	0.0446	.	0.0238	.	0.0876	0.1507	.	51.51	.	0.0374
1	IRSID 607-1	30.89	.	2.48	.	13.74	.	.	.	0.77	.	0.254	.	.	.	0.529	0.050	3.07	.	0.123	.

Number Fe FeO Al Al_2O_3 Ca CaO K K_2O Mg MgO Mn MnO Na Na_2O P S Si SiO_2 Ti TiO_2

Number	As	Ba	CO_2	Cl	Co	Cr	Cr_2O_3	Cu	Ni	NiO	Pb	V	V_2O_5	Zn	ZnO	Zr	LOI	Units	Other
IRSID 612-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
NCS DC18020	0.051	.	.	.	.	.	.	.	.	.	0.208	.	.	0.223	.	.	.	100 g	
IMS PBS-30	(0.002)	0.088	.	(0.008)	(0.015)	.	(0.007)	(0.002)	(0.007)	.	(0.004)	(0.004)	.	(0.005)	.	(0.007)	10.80	250 g	
GIOP-131	(0.001)	0.0081	.	0.004	(0.0015)	0.009	.	(0.0017)	0.00236	.	(0.0016)	0.0166	.	0.00326	.	0.0173	5.405	10 g	Sr: 0.0086
NCS DC73003	.	.	.	.	.	.	.	0.028	.	.	.	.	.	.	.	.	.	50 g	
NCS DC28065	.	.	.	.	0.085	1.71	.	.	1.30	.	.	.	.	.	.	.	.	50 g	
KZ 182-89	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
VS R8/3	.	.	.	.	(0.06)	.	2.53	.	.	0.67	.	.	.	.	.	.	10.4	75 g	
IMZ 265/1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
IRSID 601-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
NCS DC13033	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g	
KZ 183-89	.	3.10	.	.	.	.	.	.	.	.	0.026	.	.	.	.	.	.	100 g	Ge: 36.6*
VS R20/3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
NCS DC28069	.	.	.	.	0.13	1.48	.	.	1.50	.	.	.	.	.	.	.	.	50 g	
NCS DC11013	0.0003	.	.	.	.	.	.	0.0031	.	.	0.028	.	.	0.0045	.	.	.	70 g	
VS R24/2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 or 125 g	
VS R9/1	.	.	CO3:	(11.0)	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
GIOP-110	(0.0032)	(0.0046)	.	(0.0047)	(0.0032)	(0.0048)	.	(0.0055)	(0.0064)	.	(0.0022)	(0.001)	.	0.0031	.	(0.0015)	-1.17	10 g	
GIOP-98	(0.0044)	0.0067	.	(0.0045)	(0.0037)	(<0.01)	.	(0.0047)	(0.004)	.	(0.0062)	(0.001)	.	(0.0041)	.	(0.002)	-1.217	10 g	
GIOP-107	(0.0044)	(0.0047)	.	0.0058	(0.0028)	(0.0026)	.	(0.0045)	(0.0032)	.	(0.0032)	(0.0017)	.	0.0047	.	(0.0022)	-1.224	10 g	
GIOP-113	(0.0033)	(0.0042)	.	0.0117	0.0034	(0.0019)	.	(0.0048)	(0.0048)	.	(0.0042)	(0.0021)	.	0.0107	.	(0.0021)	-0.719	10 g	
GIOP-99	(0.0055)	(0.0041)	.	(0.0045)	(0.0032)	(0.0046)	.	(0.0051)	(0.003)	.	(0.0032)	(0.0016)	.	(0.0036)	.	(0.0023)	-0.984	10 g	
GIOP-105	(0.004)	0.0077	.	0.0078	(0.0032)	(0.0036)	.	(0.004)	(0.003)	.	(0.0026)	(0.0023)	.	(0.0049)	.	(0.0021)	-0.997	10 g	
IRSID 607-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	

Number As Ba CO_2 Cl Co Cr Cr_2O_3 Cu Ni NiO Pb V V_2O_5 Zn ZnO Zr LOI Units Other

CRM IRON ORE, chart 9 of 9

= class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg

#	Number	Fe	FeO	Al	Al_2O_3	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	Na	Na_2O	P	S	Si	SiO_2	Ti	TiO_2
1	IMZ 266/1	29.04	.	.	3.13	.	3.42	.	.	.	0.95	.	0.078	.	.	0.030	0.10	.	44.94	.	.
1	GIOP-104	29.83	.	.	0.526	.	2.168	.	0.0409	.	2.535	0.0762	.	0.0235	.	0.1065	0.2414	.	52.59	.	0.0283
1	GIOP-112	29.46	.	.	0.405	.	2.047	.	0.0267	.	2.323	0.0678	.	0.0248	.	0.0876	0.3007	.	53.57	.	0.0207
1	GIOP-97	28.234	.	.	0.746	.	3.028	.	0.0522	.	2.093	0.0742	.	0.0552	.	0.0396	0.554	.	54.4	.	0.0279
1	VS R39	28.03	.	.	3.92	.	1.69	.	1.29	.	1.97	.	0.069	.	0.083	0.073	0.245	.	49.1	.	0.155
1	GIOP-96	27.442	.	.	0.723	.	2.884	.	0.051	.	2.819	0.107	.	0.038	.	0.0507	0.94	.	54.38	.	0.0289
1	NCS DC28071	25.15	20.15	.	6.68	.	11.80	.	.	.	12.48	0.54	.	.	.	0.017	0.22	.	29.18	.	0.17
~~1~~	~~GIOP-95~~	~~24.215~~	~~34.86~~	~~.~~	~~1.259~~	~~.~~	~~4.804~~	~~.~~	~~0.0806~~	~~.~~	~~4.374~~	~~0.2645~~	~~.~~	~~0.049~~	~~.~~	~~0.066~~	~~0.497~~	~~.~~	~~54.85~~	~~.~~	~~0.0584~~
1	ECRM 651-1	23.85	.	2.25	.	16.15	.	0.27	.	1.04	.	0.97	.	0.05	.	0.35	0.40	3.46	.	0.10	.
1	GIOP-139	22.43	.	.	4.974	.	1.316	.	2.617	.	1.978	0.068	.	0.5068	.	0.0995	0.39	.	53.76	.	0.1922
1	NCS DC73001	20.17	(7.5)	.	3.57	.	2.84	.	0.53	.	1.68	0.168	.	.	0.28	0.045	0.051	.	60.86	0.085	.
1	IMZ 267/1	19.75	.	.	4.05	.	4.73	.	.	.	1.22	(0.16)	0.16	.	.	0.030	0.17	.	53.72	.	.
1	NCS DC28070	19.43	10.20	.	7.10	.	20.02	.	.	.	11.58	0.50	.	.	.	0.024	0.35	.	28.78	.	0.24
1	NCS DC28068	16.83	0.10	.	2.06	.	0.16	.	.	.	21.32	0.40	.	.	.	0.0018	0.025	.	34.93	.	0.043
1	GIOP-128	16.494	.	.	34.64	.	0.0207	.	0.1797	.	0.035	0.0336	.	0.0194	.	0.012	0.0518	.	21.726	.	1.581

#	Number	Fe	FeO	Al	Al_2O_3	Ca	CaO	K	K_2O	Mg	MgO	Mn	MnO	Na	Na_2O	P	S	Si	SiO_2	Ti	TiO_2

Number	As	Ba	Cl	Co	Cr	Cu	Ni	Pb	V	V_2O_5	Zn	Zr	LOI	Units	Other
IMZ 266/1	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
GIOP-104	(0.006)	(0.0047)	0.0099	(0.0031)	(0.0013)	(0.0043)	(0.0045)	(0.0042)	(0.0016)	.	0.006	(0.0017)	-0.992	10 g	
GIOP-112	(0.0063)	(0.0038)	0.0104	(0.0033)	(0.0016)	(0.0045)	(0.0031)	(0.0045)	(0.0013)	.	0.0061	(0.002)	-0.922	10 g	
GIOP-97	(0.0085)	(0.0037)	0.0095	(0.003)	(0.0011)	0.0062	(0.004)	(0.0041)	(0.0012)	.	0.006	(0.0021)	-0.92	10 g	
VS R39	23.1% Iron Magnetite		.	.	.	.	.	.	.	.	.	.	.	100 g	Fe_2O_3: 14.96
GIOP-96	(0.0081)	(0.0059)	0.0201	(0.0032)	(0.0034)	(0.0064)	(0.0046)	(0.004)	(0.0018)	.	0.0076	(0.0027)	-0.454	10 g	
NCS DC28071	.	.	.	0.066	1.16	.	1.41	.	.	.	.	.	.	50 g	
~~GIOP-95~~	~~(0.0084)~~	~~(0.002)~~	~~0.0184~~	~~(0.0031)~~	~~(0.0031)~~	~~0.005~~	~~(0.0055)~~	~~(0.0056)~~	~~(0.003)~~	~~.~~	~~0.0087~~	~~(0.002)~~	~~0.546~~	~~10 g~~	
ECRM 651-1	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
GIOP-139	0.0075	0.0183	(0.006)	(0.0017)	(0.0023)	0.0041	(0.0019)	0.0054	0.00332	.	0.155	0.0081	1.63	10 g	Sr: 0.0101
NCS DC73001	.	.	.	.	.	0.0028	.	.	.	.	.	.	.	50 g	
IMZ 267/1	.	.	.	.	.	.	.	.	.	.	.	.	.	100 g	
NCS DC28070	.	.	.	0.055	0.81	.	1.07	.	.	.	.	.	.	50 g	
NCS DC28068	.	.	.	0.064	0.81	.	1.74	.	.	.	.	.	.	50 g	
GIOP-128	0.0034	(0.0063)	0.0085	(0.0095)	0.0151	(0.004)	(0.0038)	(0.0066)	0.0424	.	(0.0033)	0.049	17.964	10 g	Sr: 0.0047

CRM COARSE AND RAW IRON ORE

2kg of raw, coarse material

Number	Fe	Al_2O_3	CaO	K_2O	MgO	Mn	Na	P	S	SiO_2	Sr	TiO_2	LOI
GIOC-10	61.30	2.12	0.023	0.009	0.052	0.262	(0.012)	0.066	0.021	3.04	(0.002)	0.068	6.52
GIOC-6	61.26	2.17	0.021	(0.008)	0.050	0.263	(0.015)	0.068	(0.020)	3.10	(0.003)	0.067	6.50
GIOC-11	60.13	2.03	0.046	0.010	0.089	0.259	(0.011)	0.070	0.026	3.48	0.009	0.089	7.67
GIOC-14	60.10	1.21	0.027	0.009	0.076	0.154	(0.012)	0.074	0.041	5.78	(0.002)	0.081	6.38
GIOC-12	58.59	1.94	0.037	0.020	0.089	0.113	(0.015)	0.054	0.031	3.90	(0.002)	0.170	9.70
GIOC-16	57.72	2.69	0.041	0.040	0.096	0.537	(0.016)	0.069	0.026	5.13	(0.002)	0.183	8.30
GIOC-9	57.48	2.39	0.131	0.010	0.138	0.150	(0.012)	0.044	0.016	5.43	0.041	0.146	9.22
GIOC-15	57.43	3.40	0.047	0.021	0.080	0.361	(0.011)	0.117	0.068	4.24	(0.002)	0.166	9.01
GIOC-8	57.28	2.42	0.120	0.006	0.145	0.072	(0.011)	0.040	0.014	5.38	0.051	0.147	9.66

Number	As	Ba	Cl	Co	Cr	Cu	Ni	Pb	Sn	V	Zn	Zr
GIOC-10	(0.001)	(0.007)	0.010	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.001)	(0.001)	(0.002)	(0.002)
GIOC-6	(0.008)	(0.012)	(0.013)	(0.003)	(0.006)	(0.015)	(0.013)	(0.002)	(0.002)	(0.001)	(0.004)	(0.003)
GIOC-11	0.007	(0.006)	0.008	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)	(0.003)	(0.003)
GIOC-14	0.022	(0.005)	(0.005)	(0.002)	0.004	(0.003)	(0.003)	(0.003)	(0.002)	0.004	(0.003)	(0.002)
GIOC-12	0.011	(0.004)	(0.005)	(0.005)	0.007	(0.004)	(0.005)	(0.003)	(0.001)	0.007	(0.002)	(0.004)
GIOC-16	(0.002)	(0.007)	0.007	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.001)	0.004	(0.004)	(0.005)
GIOC-9	0.002	(0.003)	(0.004)	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	0.004	0.007	(0.005)
GIOC-15	0.007	(0.005)	0.008	(0.002)	(0.002)	(0.003)	(0.003)	(0.002)	(0.001)	0.003	(0.003)	0.007
GIOC-8	0.002	(0.002)	(0.004)	(0.001)	(0.002)	(0.001)	(0.002)	(0.002)	(0.006)	(0.003)	0.007	(0.005)

IRON ORE SINTER

= class, where 1 = CRM and 2 = RM analysis listed in mass %

#	Number	Fe	FeO	Al	Al_2O_3	C	CO_2	Ca	CaO	Cr_2O_3	Cu	CuO	F	K	K_2O	Mg	MgO	LOI 900'C
2	DH 5630	60.62	4.86	.	1.134	.	.	.	6.99	.	.	.	.	.	0.040	.	0.654	.
2	DH 5635	59.22	5.27	.	1.392	.	.	.	6.11	0.031	.	.	.	.	0.066	.	0.882	1.27
2	DH 5631	58.54	5.41	.	1.43	.	.	.	6.28	.	.	.	.	.	0.247	.	2.01	.
1	NCS DC14203	57.63	10.80	.	1.37	.	.	.	8.17	.	0.0063	.	.	.	0.065	.	1.65	.
2	DH 5616	57.29	6.58	.	1.331	.	.	.	9.51	0.045	.	.	.	.	0.045	.	1.491	.
~~1~~	~~JSS 851-5~~	~~56.67~~	~~.~~	~~0.89~~	~~.~~	~~.~~	~~.~~	~~7.94~~	~~.~~	~~Cr:0.0163~~	~~0.0034~~	~~.~~	~~Fe II: 5.99~~	~~.~~	~~0.48~~	~~.~~	~~.~~	~~0.041~~
1	NCS DC28046	56.14	9.17	.	2.07	.	.	.	10.35	.	.	.	.	.	0.125	.	2.21	.
1	NCS DC14009a	55.58	20.06	.	2.38	.	.	.	3.62	.	0.017	.	.	.	0.316	.	5.99	.
1	NCS DC28046a	55.49	7.93	.	1.84	.	.	.	11.66	.	0.0034	.	.	.	0.045	.	2.83	.
1	NCS DC11024	55.37	(8.20)	.	2.19	.	.	.	10.76	.	.	.	.	.	0.082	.	2.14	.
2	BS 104	55.32	.	.	1.26	.	.	.	8.72	.	.	.	.	.	(0.15)	.	3.06	.
1	NCS DC28038	55.19	6.23	.	1.83	.	.	.	9.19	.	.	.	.	.	0.070	.	2.22	.
1	NCS DC28023a	53.10	7.49	.	2.76	.	.	.	11.78	.	.	.	.	.	0.079	.	2.69	.
2	DH 5632	55.03	4.06	.	1.281	.	.	.	10.79	.	.	.	.	.	0.174	.	2.070	.
1	**BS 104A**	54.8	.	.	1.04	0.22	.	.	10.5	.	.	.	.	.	0.14	.	1.24	.
1	BCS 377/6	54.78	.	0.783	.	.	.	5.74	.	Cr:0.0154	.	.	.	.	.	0.907	.	.
1	NCS DC14204	54.62	9.26	.	1.49	.	.	.	9.29	.	0.014	.	.	.	0.046	.	1.74	.
~~1~~	~~NCS DC28023b~~	~~53.74~~	~~8.52~~	~~.~~	~~3.05~~	~~As:0.020~~	~~.~~	~~Cr:0.021~~	~~9.67~~	~~.~~	~~0.017~~	~~.~~	~~.~~	~~.~~	~~0.145~~	~~.~~	~~3.45~~	~~.~~
1	NCS DC28050	53.26	9.53	.	2.24	.	.	.	11.31	.	.	.	.	.	0.084	.	2.70	.
1	NCS DC14202	52.77	6.55	.	2.54	.	.	.	11.33	.	0.012	.	.	.	0.078	.	2.02	.
1	NCS DC28049	52.16	8.06	.	2.17	.	.	.	13.05	.	.	.	.	.	0.082	.	1.63	.
1	NCS DC14206	51.13	9.22	.	2.44	.	.	.	9.46	.	(0.007)	.	.	.	0.080	.	4.40	.
1	NCS DC28047	50.04	8.07	.	2.11	.	.	.	13.72	.	.	.	.	.	0.091	.	2.08	.
1	ECRM 676-1	39.76	.	3.40	.	.	.	12.78	.	.	.	.	0.10	0.43	.	1.16	.	.

continued analysis listed in mass % except * which is mg/kg

Number	Mn	MnO	Na	Na_2O	Ni*	NiO	P	P_2O_5	PbO	S	Si	SiO_2	SrO	Ti	TiO_2	V	V_2O_5	ZnO	Units
DH 5630	0.298	.	.	0.032	.	.	.	0.112	.	0.011	.	3.98	.	.	0.085	.	.	0.016	100 g
DH 5635	0.368	.	.	0.047	.	.	.	0.120	.	0.013	.	4.81	.	.	0.224	.	.	0.010	100 g
DH 5631	0.945	.	.	.	.	.	.	0.107	.	.	.	5.08	.	.	0.076	.	.	0.040	100 g
NCS DC14203	0.174	.	.	0.046	.	.	0.102	.	.	0.025	.	5.38	.	0.113	.	.	.	.	50 g
DH 5616	0.477	.	.	0.025	.	.	.	0.140	.	.	.	5.18	.	.	0.101	.	0.018	0.013	100 g
~~1~~	~~JSS 851-5~~	~~0.241~~	~~.~~	~~.~~	~~50~~	~~.~~	~~0.060~~	~~.~~	~~.~~	~~0.016~~	~~2.40~~	~~.~~	~~.~~	~~0.065~~	~~.~~	~~0.0004~~	~~.~~	~~Zn:0.0075~~	~~100 g~~
NCS DC28046	0.227	.	.	0.048	.	.	0.064	.	.	0.032	.	5.54	.	0.076	.	.	.	.	70 g
NCS DC14009a	.	0.097	.	0.068	.	.	0.017	.	.	0.106	.	9.95	.	.	0.266	.	.	0.011	50 g
NCS DC28046a	.	0.289	.	0.034	.	.	0.045	.	.	0.040	.	4.85	.	.	0.109	.	.	0.0078	50 g
NCS DC11024	.	0.36	.	0.045	.	.	0.056	.	.	0.017	.	5.64	.	.	0.125	.	.	0.0062	70 g
BS 104	.	0.79	.	(0.06)	.	.	.	0.127	.	0.011	.	7.70	.	.	0.08	.	.	.	100 g
NCS DC28038	0.222	.	.	0.057	.	.	0.057	.	.	0.028	.	6.79	.	0.123	.	.	.	.	70 g
NCS DC28023a	.	0.740	.	0.049	.	.	0.059	.	.	0.042	.	6.49	.	.	0.144	.	.	.	50 g
DH 5632	0.708	.	.	.	.	.	.	0.104	.	0.059	.	5.55	.	.	0.068	.	.	0.026	100 g
BS 104A	.	1.06	.	0.022	.	.	.	0.101	.	0.015	.	7.97	.	.	0.094	.	.	**17025**	100 g
BCS 377/6	0.604	.	.	.	.	.	0.0586	.	Pb:0.1485	.	2.982	.	.	0.1001	.	0.0178	.	Zn:1.002	100 g
NCS DC14204	0.193	.	.	0.019	.	.	0.039	.	.	0.024	.	7.94	.	0.092	.	.	.	.	50 g
~~1~~	~~NCS DC28023b~~	~~.~~	~~0.185~~	~~.~~	~~0.090~~	~~.~~	~~.~~	~~0.036~~	~~.~~	~~Pb:0.012~~	~~0.022~~	~~.~~	~~7.11~~	~~.~~	~~.~~	~~0.290~~	~~.~~	~~last~~	~~0.018~~	~~50 g~~
NCS DC28050	0.286	.	.	0.44	.	.	0.049	.	.	0.075	.	6.24	.	0.082	.	.	.	.	70 g
NCS DC14202	0.199	.	.	0.033	.	.	0.060	.	.	0.033	.	7.51	.	0.062	.	.	.	.	50 g
NCS DC28049	0.440	.	.	0.38	.	.	0.024	.	.	0.096	.	6.92	.	0.067	.	.	.	.	70 g
NCS DC14206	0.179	.	.	0.040	.	.	0.066	.	.	0.059	.	8.58	.	0.094	.	.	.	.	50 g
NCS DC28047	0.390	.	.	0.53	.	.	0.028	.	.	0.125	.	7.60	.	0.067	.	.	.	.	70 g
ECRM 676-1	0.83	.	0.095	.	.	.	0.59	.	.	0.12	6.40	.	.	0.19	.	0.070	.	.	100 g

CRM KAOLIN

NCS: 50 g units UNS: 100 g units

Number	SiO_2	Al_2O_3	CaO	Fe_2O_3	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	SO_3	TiO_2	LOI
UNS KK	47.06	36.77	0.236	0.982	12.75	1.063	0.192	0.015	0.032	.	.	0.166	.
NCS DC60123a	45.30	37.70	0.064	0.35	15.26	0.042	0.021	0.0018	0.045	0.16	0.76	0.060	14.81
NCS DC60122a	43.41	34.77	0.038	1.50	13.24	0.78	0.069	0.0020	0.045	0.21	5.51	0.25	17.31

CRM KIMBERLITE WITH EXTENSIVE ANALYSIS

analysis listed in mass % 70 g units

Number	Al_2O_3	CO_2	CaO	FeO	Fe_2O_3T	H_2O+	K_2O	MgO	Na_2O	P_2O_5	SO_3	SiO_2	TiO_2	LOI
NCS DC71312	3.73	(16.78)	12.64	3.71	(6.53)	(4.47)	0.49	17.56	(0.1)	0.30	0.68	35.88	0.71	20.73

continued analysis listed in mg/kg except % which is mass %

Number	Ag	As	B	Ba	Be	Bi	Cd	Ce	Cl%	Co	Cr	Cs	Cu	Dy	Er	Eu	F%	Ga	Gd
NCS DC71312	(0.06)	3.5	(31.8)	(0.177)	1.3	(0.1)	0.46	127	(0.04)	40.0	795	5.2	26.2	2.6	(1.2)	1.6	(0.11)	7.1	4.7

Number	Ge	Hf	Hg	Ho	La	Li	Lu	Mn%	Mo	Nb	Nd	Ni	Pb	Pr	Rb	Sb	Sc	Se	Sm
NCS DC71312	0.89	4.9	0.010	0.49	69.8	75.7	0.16	(0.09)	1.4	60.4	49.0	516	20.7	13.8	28.4	(0.22)	10.9	0.10	6.5

Number	Sn	Sr	Ta	Tb	Th	Tm	U	V	W	Y	Yb	Zn	Zr
NCS DC71312	1.7	262	3.9	0.54	10.8	0.17	2.2	86	2.4	11.6	1.1	190	182

CRM LATERITE - NICKEL ORE

analysis listed in mass %, ICP values by fusion ICP, C and S: <0.01% from IR combustion furnace, all others fusion XRF including Cl: <50 ppm 10g or 1kg

Number	Ni	Co	Al_2O_3	C	CaO	Cr_2O_3	Cu	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SO_3	SiO_2	TiO_2	Zn	LOI
OREAS 195	2.94	0.0477	3.13	0.08	0.390	0.958	<0.0050	18.29	<0.01	19.01	0.288	0.034	<0.01	<0.01	44.00	0.037	0.0300	9.71
OREAS 195 ICP	2.89	0.0465	3.07	.	0.397	0.938	(0.0050)	18.16	<0.1	18.88	0.285	(0.03)	<0.01	<0.05	43.30	0.037	0.0293	.
OREAS 194	2.13	0.0428	2.74	0.07	0.311	0.819	(0.0040)	16.47	<0.01	22.83	0.261	(0.03)	<0.01	<0.01	43.02	0.035	0.0174	10.53
OREAS 194 ICP	2.10	0.0424	2.73	.	0.32	0.814	0.0041	16.42	<0.01	22.77	0.262	0.027	<0.01	<0.05	42.90	0.033	0.0184	.
OREAS 193	1.93	0.0495	3.08	0.07	0.362	0.962	<0.0050	19.51	<0.01	20.25	0.317	(0.03)	0.012	<0.01	42.72	0.053	0.0219	9.87
OREAS 193 ICP	1.91	0.0483	3.05	.	0.373	0.956	(0.0040)	19.49	(0.08)	20.26	0.316	0.030	<0.02	<0.05	42.49	0.051	0.0199	.
OREAS 192	1.77	0.0404	2.76	0.07	0.313	0.913	<0.0050	18.10	<0.01	21.32	0.277	0.028	<0.01	(0.004)	43.58	0.036	0.0176	10.17
OREAS 192 ICP	1.75	0.0398	2.75	.	0.316	0.910	(0.0038)	18.14	<0.1	21.26	0.278	0.022	<0.02	<0.02	43.45	0.033	0.0193	.
OREAS 191	1.75	0.0665	4.27	0.09	0.276	1.22	(0.0050)	24.86	<0.01	10.06	0.397	(0.02)	<0.01	<0.01	47.97	0.052	0.0302	8.10
OREAS 191 ICP	1.73	0.0652	4.19	.	0.287	1.21	(0.0050)	24.63	(0.1)	9.95	0.397	0.018	<0.02	<0.05	47.67	0.050	0.0297	.
OREAS 190	1.64	0.0889	6.00	0.07	0.133	1.73	(0.0070)	35.48	<0.01	6.91	0.577	(0.02)	<0.01	<0.01	38.22	0.064	0.0353	8.38
OREAS 190 ICP	1.62	0.0875	5.86	.	0.133	1.71	0.0068	35.40	<0.01	6.85	0.574	(0.01)	<0.02	<0.02	38.06	0.062	0.0327	.
OREAS 189	1.48	0.0326	2.09	0.10	0.326	0.765	<0.0050	15.04	<0.01	23.09	0.227	(0.03)	<0.01	<0.01	46.20	0.029	0.0125	10.13
OREAS 189 ICP	1.47	0.0327	2.08	.	0.328	0.764	(0.0030)	14.94	(0.08)	23.06	0.228	0.021	<0.02	<0.05	46.08	0.026	0.0103	.
OREAS 187	1.37	0.0636	2.80	0.11	0.341	0.987	(0.0040)	19.45	<0.01	17.99	0.356	<0.03	<0.01	<0.01	46.66	0.033	0.0196	9.27
OREAS 187 ICP	1.37	0.0629	2.77	.	0.352	0.987	<0.0050	19.40	<0.1	17.96	0.358	<0.03	<0.02	<0.05	46.37	(0.03)	0.0190	.
OREAS 186	1.23	0.0692	5.19	0.07	0.562	1.42	0.0061	32.04	<0.01	4.89	0.522	(0.02)	(0.01)	<0.01	46.29	0.069	0.0265	6.83
OREAS 186 ICP	1.22	0.0680	5.11	.	0.564	1.41	0.0057	31.72	<0.1	4.82	0.519	<0.01	<0.02	<0.05	46.24	0.070	0.0276	.
OREAS 185	1.14	0.0388	2.48	0.10	0.385	0.914	<0.0050	18.42	<0.01	20.22	0.297	0.027	<0.01	<0.01	45.93	0.033	0.0143	9.61
OREAS 185 ICP	1.12	0.0385	2.47	.	0.39	0.91	<0.0050	18.27	<0.01	20.17	0.295	0.024	<0.02	<0.05	45.58	0.031	0.0128	.
OREAS 184	1.02	0.0903	4.62	0.07	0.216	1.75	0.0070	39.30	<0.01	3.05	0.676	<0.01	0.017	<0.01	42.25	0.060	0.0278	6.24
OREAS 184 ICP	1.02	0.0899	4.58	.	0.231	1.75	0.0060	39.42	<0.1	3.00	0.678	<0.01	(0.02)	<0.05	42.19	0.058	0.0287	.
OREAS 183	0.995	0.0225	1.60	0.22	0.710	0.653	<0.0030	12.73	<0.01	27.31	0.180	(0.03)	0.005	<0.01	44.49	0.023	0.0078	10.90
OREAS 183 ICP	0.983	0.0222	1.60	.	0.72	0.651	0.0021	12.72	<0.1	27.43	0.181	0.030	<0.01	<0.02	44.13	0.020	0.0082	.
OREAS 182	0.707	0.0728	4.07	0.09	0.251	1.29	0.0052	29.40	<0.01	9.16	0.580	0.019	0.010	0.006	46.77	0.053	0.0181	7.14
OREAS 182 ICP	0.706	0.0723	4.02	.	0.253	1.28	0.0049	29.62	<0.1	9.12	0.587	0.014	<0.02	<0.05	46.54	0.051	0.0189	.

RM LEAD BASILICATE

analysis listed in mass % 25 or 100 g units

Number	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	Na_2O	PbO	SiO_2	TiO_2	LOI
CERAM AN28	2.46	0.05	0.018	0.05	<0.01	0.05	64.33	32.76	<0.01	0.15

CRM LEAD ORE TAILINGS WITH EXTENSIVE ANALYSIS

analysis listed mass % * BCS 362 lists AQUA REGIA results where indicated GBW: 50 g units BCS: 100 g units

Number	Al_2O_3	CaO	Cu	F	Fe_2O_3	K_2O	MgO	MnO	Mn_3O_4	Na_2O	Pb	PbO	S	SiO_2	SrO	TiO_2	Zn	ZnO	LOI
GBW 07235	12.88	19.51	0.20	0.27	4.37	1.42	1.62	1.40	.	1.61	4.17	.	0.86	43.63	.	0.53	0.062	.	.
BCS 362 *	0.667	44.21	0.0056*	.	0.483	0.14	0.068	.	0.829	0.084	2.30*	2.63	1.48	9.03	0.034	0.047	2.03*	2.59	32.81

continued analysis listed in mg/kg

Number	Ag	As	Bi	Cd	Ce	Cr	Cs	Dy	Eu	Er	Ga	Gd	Ge	Ho	In	La	Li	Lu
GBW 07235	14.7	85.1	15.6	3.2	78.3	(29)	(6)	3.0	1.2	1.5	16.7	3.7	0.90	0.61	0.12	40.5	(19)	0.24
BCS 362 *	.	30*	.	200*	.	11*	.	.	.	.	.	.	.	.	.	.	.	.

Number	Mo	Nd	Ni	Pr	Rb	Sb	Sc	Se	Sm	Sn	Tb	Te	Th	Tl	Tm	W	Y	Yb	pH
GBW 07235	1.6	28.2	27.7	8.1	(55)	39.3	7.5	1.7	5.1	3.0	0.58	3.9	10.2	0.43	0.23	17.6	15.4	1.5	.
BCS 362 *	.	.	12*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	8.14*

CRM LEAD ORE analysis listed in mass %

Number	Pb	Ag	As	Ba	Co	Cu	Fe	Ni	S	Zn	Zr	Units
KZ 6586-93	3.5	0.0019	.	0.38	.	0.013	2.03	.	0.55	0.045	0.019	100 g
GBM920-11	3.1189	0.01561	.	.	.	0.3436	.	0.0011	15.98	0.3602	.	10 or 250 g
GBM920-1	3.1136	0.01575	0.0491	.	0.0327	0.3431	.	0.0010	.	0.3642	.	10 or 250 g
GBM919-16	1.7662	0.01541	.	.	.	0.0164	.	0.0134	0.29	0.3397	.	10 or 250 g
KZ 5177-90	1.84	0.00181	.	10.3	.	.	.	.	2.96	.	.	100 g

CRM LEAD ORE analysis listed in mass % 25 g units

Number	Ag	Al_2O_3	As	Bi	CaO	Cd	Cu	Fe	MgO	Mn	Pb	S	Sb	SiO_2	Zn
NCS DC28116	0.022	2.56	0.068	0.085	17.16	0.0097	0.85	6.78	1.28	0.029	15.09	19.26	0.0084	7.92	1.44

CRM LEAD ORE analysis listed in mass % except* which is mg/kg

Number	Pb	S	Zn	Ag	Al	As	Au*	Ba*	C	Ca	Cd	Co*	Cr	Cu	Fe
CAN CPB-3	58.02	(17.03)	5.96	0.2790	0.203	(0.0391)	(0.119)	(60)	1.03	0.059	0.065	13.6	0.0102	0.240	8.45

Number	Hg*	K	La*	Mg	Mn	Na	Ni*	Sb	SiO_2	Sn*	Sr*	Th*	Y*	LOI	Units
CAN CPB-3	40.8	(0.09)	(2)	0.106	(0.421)	(0.01)	16.8	0.58	2.62	(6)	(3)	(0.4)	(2)	(0.15)	100g

CRM LIMESTONE AND DOLOMITE

analysis listed in mass % 100 g

Number	CaO	CO_2	Al_2O_3	BaO	Fe_2O_3	H_2O	K_2O	MgO	MnO_2	Na_2O	SiO_2	SO_3	SrO	TiO_2	LOI
DK KSTM 1	46.57	36.11	3.24	0.0049	1.24	0.57	0.56	0.47	0.14	0.04	8.79	0.12	0.1394	0.16	38.07
DK KSTM 2	55.04	43.20	0.19	0.002142	0.12	0.11	0.05	0.39	0.04	0.02	0.51	0.05	0.0197	0.01	43.57
DK KSTM 3	55.17	43.33	0.13	0.001178	0.07	0.07	0.02	0.48	0.02	0.02	0.28	0.02	0.0214	0.01	43.44
DK KSTM 4	30.23	45.53	0.14	0.002180	0.12	0.11	0.03	21.65	0.06	0.04	0.46	0.03	0.009052	0.01	47.25

continued analysis listed in mg/kg

Number	As	Cd	Co	Cr	Cu	Hg	Ni	Pb	Sb	Se	Zn
DK KSTM 1	2.01	0.11	6.04	11.72	8.45	0.015	18.58	5.69	0.08	0.02	23.59
DK KSTM 2	2.20	0.17	0.62	1.70	1.07	0.01	1.85	33.84	0.13	0.01	12.71
DK KSTM 3	0.32	0.11	0.45	1.21	1.02	0.01	0.85	0.67	0.76	0.01	2.56
DK KSTM 4	0.74	0.14	0.27	2.04	1.62	0.025	1.31	17.62	0.04	0.01	16.98

CRM LIMESTONE WITH EXTENSIVE ANALYSIS

analysis listed in mass % CGL: 100 g JLs: 20 g NCS: 50 g

Number	CaO	MgO	CO_2	SiO_2	LOI	Al_2O_3	Org.C	FeO	T.Fe_2O_3	H_2O-	H_2O+	K_2O	MnO	Na_2O	P_2O_5	SO_3	Ti%	TiO_2
JLs-1	55.09	0.606	43.58	0.120	.	0.0207	Fe_2O_3:	0.0178	0.0168	0.105	(0.140)	0.00297	0.00209	0.00194	0.0295	S:0.0123	.	(0.0020)
CGL 020	50.32	1.385	.	5.76	40.29	1.16	.	.	0.349	H_2O:	(0.16)	0.229	0.0231	0.228	0.0659	.	.	0.043
NCS DC70301	47.89	6.76	44.39	0.55	43.92	0.17	(0.03)	0.15	0.193	(0.20)	0.37	0.043	0.009	0.022	0.008	0.017	0.0066	0.011
NCS DC70302	41.95	11.62	44.89	0.72	44.75	0.22	(0.03)	0.16	0.205	(0.20)	0.31	0.052	0.009	0.029	0.014	0.013	0.0132	0.022
NCS DC70308	38.08	14.96	45.62	1.17	44.61	0.18	(0.04)	0.05	0.448	(0.17)	0.42	0.026	0.027	0.030	0.009	0.041	0.0054	0.009
NCS DC70305	30.93	20.14	45.58	1.15	45.73	0.29	(0.07)	0.07	0.17	(0.07)	0.39	0.16	0.012	0.036	0.035	0.33	0.0078	0.013

analysis listed in mg/kg except % which is mass %

Number	Ag	As	B	Ba	Be	Bi	Br	Cd	Ce	Cl	Co	Cr	Cs	Cu	Dy	Er	Eu	F	Ga	Gd
JLs-1	(0.0013)	(0.145)	.	476	.	.	.	0.159	0.521	.	0.0825	3.37	0.0201	0.268	0.0283	.	0.0072	57.5	.	(0.03)
CGL 020	.	.	.	51	0.58	.	.	(0.04)	6.08	.	1.1	5.3	2.01	1.3	0.528	0.298	0.143	.	1.48	0.611
NCS DC70301	0.020	0.50	(1.9)	9.7	0.08	0.015	(0.2)	0.10	1.4	34	0.45	4.8	0.07	2.2	0.12	0.09	0.037	76	0.3	0.13
NCS DC70302	0.021	0.29	(2.2)	11.6	0.12	0.020	(0.3)	0.09	1.9	34	0.5	5.6	0.09	2.2	0.15	0.12	0.052	91	0.33	0.16
NCS DC70308	0.035	5.5	(2.3)	10.6	0.15	0.012	0.9	0.39	1.5	123	0.5	9.7	0.10	2.9	0.20	0.15	0.049	179	0.4	0.19
NCS DC70305	(0.016)	0.96	(6.4)	0.52%	0.08	0.025	6.1	0.02	2.5	343	0.52	3.4	0.13	2.8	0.17	0.10	0.14	459	0.31	0.22

Number	Ge	Hf	Hg	Ho	I	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	P	Pb	Pr	Rb	Sb
JLs-1	0.126	.	(0.0056)	.	.	.	0.153	(0.2)	0.022	.	.	(1.0)	(0.136)	0.362	.	(0.7)	(0.032)	(0.18)	(0.0166)
CGL 020	.	0.395	.	0.103	.	.	3.71	9.7	0.0412	.	(0.13)	0.8	3.32	5	.	2.9	0.85	11.5	(0.25)
NCS DC70301	0.11	1.4	0.004	0.034	(0.5)	(0.03)	0.9	2.9	0.019	70	0.35	0.3	0.66	5.8	35	2.9	0.22	1.2	0.08
NCS DC70302	0.12	2.1	0.015	0.034	(0.3)	(0.02)	1.2	3.1	0.022	70	0.26	0.46	0.86	4.3	62	3.9	0.24	1.6	0.09
NCS DC70308	0.11	3.1	0.031	0.046	(0.2)	(0.02)	0.9	3.0	0.035	209	0.80	0.4	0.89	5.6	40	7.8	0.21	1.1	0.59
NCS DC70305	0.12	0.13	0.006	0.034	(0.2)	(0.02)	1.3	3.1	0.015	93	0.19	0.4	1.10	2.9	155	2.9	0.28	2.6	0.06

Number	Sc	Se	Sm	Sn	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W%	Y	Yb	Zn	Zr%
JLs-1	0.0307	.	0.135	.	295	(0.014)	(0.0041)	.	0.0287	(0.003)	.	1.75	3.59	.	0.223	0.0164	3.19	(0.000419)
CGL 020	0.71	.	0.638	0.66	1018	0.093	0.092	.	0.71	(0.083)	0.0437	1.08	5.9	8ppm	3.43	0.276	8	(0.0016)
NCS DC70301	0.40	0.014	0.15	(0.7)	227	(0.06)	0.022	0.008	0.25	0.022	0.018	0.59	4.8	0.17	1.2	0.11	8.1	0.00537
NCS DC70302	0.5	0.015	0.19	(0.6)	191	0.05	0.031	0.008	0.25	0.023	0.020	0.39	5.0	0.18	1.4	0.13	9.5	0.00768
NCS DC70308	0.5	0.10	0.21	(0.9)	85	0.030	0.035	0.016	0.29	0.02	0.030	1.13	7.5	0.13	1.8	0.19	35.7	0.0113
NCS DC70305	0.4	0.013	0.26	(0.7)	158	0.06	0.032	0.008	0.45	0.04	0.017	0.70	5.1	0.17	1.1	0.10	3.6	0.00049

CRM LIMESTONE

Number	Al	Ca	Fe	Mg	Mn	P	S	Si	Ti	Units
IRSID 702-1	0.21	21.48	0.440	12.37	0.098	0.024	0.027	1.04	0.013	100 g

CRM LIMESTONE AND DOLOMITE

analysis listed in mass % FLX: RM, 30g NCS: CRM, 50g

Number	CaO	MgO	SiO_2	Al_2O_3	Fe_2O_3	K_2O	Mn_2O_3	MnO	Na_2O	P	S	SO_3	SrO	TiO_2	LOI
FLX 136	55.06	0.377	0.548	0.181	0.126	0.051	0.038	.	.	.	.	0.033	0.022	.	.
NCS DC28246	54.92	0.37	0.47	0.203	0.107	.	.	0.0081	.	0.0017	0.010	.	0.017	0.0092	43.54
NCS DC28160	54.20	0.82	0.960	0.328	0.146	0.084	.	0.0049	0.006	0.0019	0.019	.	0.018	0.016	43.27
NCS DC28157	53.79	1.17	1.32	0.225	0.151	0.066	.	0.0037	0.0058	0.0027	0.020	.	0.018	0.014	43.22
NCS DC28161	53.76	1.50	0.835	0.242	0.143	0.048	.	0.0058	0.006	0.0012	0.018	.	0.017	0.011	43.37
NCS DC28245	53.40	1.90	0.37	0.17	0.125	.	.	0.0092	.	0.0015	0.014	.	0.024	0.0085	43.93
NCS DC28159	51.95	1.23	2.36	0.811	0.296	0.165	.	0.0077	0.009	0.0017	0.016	.	0.020	0.036	42.39
NCS DC28244	51.32	2.94	1.49	0.39	0.171	.	.	0.0026	.	0.0022	0.0082	.	0.018	0.018	43.47
NCS DC28156	51.22	2.43	3.32	0.340	0.181	0.094	.	0.0042	0.0074	0.0019	0.030	.	0.021	0.020	42.26
NCS DC28154	50.61	2.88	3.02	0.622	0.289	0.164	.	0.0054	0.026	0.0028	0.055	.	0.024	0.032	41.92
NCS DC28170b	49.25	5.31	0.82	0.17	0.194	0.030	.	0.0069	0.007	0.0015	0.007	.	0.016	0.0080	43.96
NCS DC28158	48.56	4.31	3.99	0.657	0.302	0.184	.	0.0055	0.028	0.0044	0.044	.	0.022	0.051	41.70
NCS DC28247	47.82	6.13	0.70	0.222	0.201	.	.	0.0095	.	0.0066	0.014	.	0.018	0.013	44.46
NCS DC28152	46.71	6.55	2.42	0.374	0.25	0.050	.	0.0046	0.011	0.0017	0.042	.	0.016	0.023	43.22
NCS DC28155	46.09	5.98	4.60	0.283	0.187	0.038	.	0.0046	0.010	0.0016	0.033	.	0.020	0.015	42.55
NCS DC28248	45.88	7.68	0.76	0.240	0.229	.	.	0.010	.	0.0078	0.016	.	0.018	0.014	44.51
NCS DC28153	41.81	10.37	2.35	0.543	0.417	0.074	.	0.0070	0.011	0.0032	0.050	.	0.014	0.031	43.81
NCS DC28163	30.22	20.85	1.87	0.205	0.244	0.018	.	0.015	0.012	0.0015	0.038	.	0.013	0.0079	45.31
NCS DC28164	30.15	20.91	2.16	0.250	0.248	0.027	.	0.016	0.011	0.0013	0.039	.	0.013	0.012	45.04
NCS DC28165	29.50	20.43	5.22	0.706	0.357	0.033	.	0.018	0.023	0.0020	0.056	.	0.016	0.021	43.07
NCS DC28162	28.73	19.76	8.42	1.20	0.475	0.039	.	0.020	0.033	0.0028	0.072	.	0.019	0.036	40.56
Number	CaO	MgO	SiO_2	Al_2O_3	Fe_2O_3	K_2O	Mn_2O_3	MnO	Na_2O	P	S	SO_3	SrO	TiO_2	LOI

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analysis listed in mass % GUW, UL: 50 g GBW, NCS: 70 g others: 100 g

Number	CaO	Al_2O_3	CO_2	FeO	Fe_2O_3	T.Fe_2O_3	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI
SRM 1d	52.85	0.526	.	.	0.3191	.	.	0.1358	0.301	.	0.0109	0.0413	4.080	0.0306	41.57
UL CCH1	52.05	0.32	.	.	.	0.18	.	0.08	2.71	0.01	0.05	0.05	0.95	0.02	43.20
NCS DC73375	51.1	0.68	39.8	(0.06)	.	0.21	(0.4)	0.15	0.71	.	0.03	.	6.65	.	40.2
GUW KH	47.8	2.39	37.6	0.33	0.92	.	.	0.41	0.74	0.088	.	0.121	8.60	(0.130)	.
GUW KH2	47.64	2.365	37.51	(0.31)	0.855	.	(1.26)	0.437	0.656	0.0848	0.106	0.117	8.66	0.130	.
GUW KH3	47.6	2.40	37.6	0.32	0.87	.	(1.4)	0.43	0.65	0.080	0.10	0.117	8.59	0.130	38.6
VS 3193-85	38.5	1.87	.	1.89	.	2.48	.	0.49	6.04	0.28	0.48	0.027	12.35	0.09	.
VS 3193-89	38.46	1.89	.	1.8	.	2.43	.	0.49	5.97	0.28	0.46	0.030	12.40	0.093	.
GBW 07108	35.67	5.03	32.4	1.64	.	2.52	+(2.12)	0.78	5.19	.	(0.08)	.	15.60	.	34.1
~~JDo-1~~	~~33.96~~	~~0.0174~~	~~46.50~~	~~(0.071)~~	~~0.0222~~	~~0.0208~~	~~+0.395~~	~~0.145~~	~~0.00232~~	~~18.47~~	~~0.00657~~	~~0.0129~~	~~0.0343~~	~~0.216~~	~~.~~
VS 813-89	29.48	0.43	45.6	0.36	0.47	.	0.4	0.35	20.75	0.050	0.07	0.011	2.69	0.025	.
VS 3192-89	21.56	5.48	.	1.8	.	3.15	.	2.75	12.89	0.30	1.38	0.060	19.92	0.28	.

analysis listed in mg/kg except % which is mass % and * which is ng/g

Number	Ag	As	Au*	B	Ba	Be	Bi	Br	Carbon%	Cd	Ce	Cl	Co	Cr	Cs	Cu
SRM 1d	.	.	.	BaO: 33		(0.1)	.	.	11.50	(0.3)	(4)	(130)	.	.	(0.4)	.
UL CCH1	(<1)	(1.3)	.	(10)	26	(<4)	(<5)	.	.	.	3.7	(370)	0.23	(5.4)	(0.13)	(<10)
NCS DC73375	(0.025)	0.66	.	(12)	9	0.14	0.032	(0.3)	(0.15 Org)	0.016	4.6	(24)	0.8	3.4	(0.10)	2.2
GUW KH	.	.	.	.	50	.	.	.	.	.	.	.	5.3	15	1.4	10
GUW KH2	.	.	.	.	46.3	.	.	.	.	.	18.1	.	(10)	14.2	12.2	8
GUW KH3	.	.	.	.	.	.	.	.	(0.14 Org)	.	.	.	.	.	.	.
VS 3193-85	.	.	.	(10)	60	(1)	.	.	.	.	18	.	2.2	13	(0.7)	4
VS 3193-89	.	.	.	.	50	.	.		.	.	16	.	2.3	9	.	4
GBW 07108	0.043	4.7	(0.94)	16	120	0.8	0.16	.	9.0 tot (0.11 org)	0.07	25	78	9	32	3.2	23
~~JDo-1~~	~~(0.0019)~~	~~(0.114)~~	~~trace~~	~~.~~	~~6.14~~	~~.~~	~~.~~	~~(0.79)~~	~~(12.760)~~	~~0.644~~	~~2.49~~	~~.~~	~~0.160~~	~~7.93~~	~~.~~	~~1.41~~
VS 813-89	.	.	.	5	30	1.3	.	.	.	.	.	.	3.0	6	.	8
VS 3192-89	.	.	.	.	400	.	.	.	.	.	27	.	12	30	.	29

Number	Dy	Er	Eu	F	Ga	Gd	Ge	Hf	Hg	Ho	I	In	La	Li	Li_2O	Lu	Mn	Mo
SRM 1d	(0.6)	(0.4)	(0.1)	(160)	(1)	(0.5)	.	.	.	(0.1)	.	.	(4)	.	.	.	209	.
UL CCH1	(0.27)	.	0.17	(367)	(<4)	(0.38)	(<10)	0.11	.	(0.4)	.	(<5)	5.0	0.03	.	.	.	(<5)
NCS DC73375	0.28	(0.17)	0.082	249	0.87	0.36	0.14	0.22	0.005	(0.045)	(0.1)	(0.02)	2.3	4.8	.	0.023	28	0.18
GUW KH	.	.	0.5	570	.	.	.	0.78	.	.	.	.	.	8.6	.	0.12	.	.
GUW KH2	.	.	0.47	610	.	.	.	.	.	.	.	.	.	(7)	.	0.127	.	.
GUW KH3	.	.	.	(610)	.	.	.	.	.	.	.	.	.	.	(21)	.	.	.
VS 3193-85	.	.	.	.	.	other impurities: 37.46%			.	.	.	.	(7)	.	.	(0.1)	.	.
VS 3193-89	.	.	.	.	.	.	.	.	.	.	.	.	8	.	.	.	.	.
GBW 07108	1.6	1.0	0.51	406	7.1	1.9	0.67	1.8	0.016	0.33	0.23	(0.04)	15	20	.	0.14	434	0.38
~~JDo-1~~	~~0.014~~	~~.~~	~~0.176~~	~~246~~	~~.~~	~~(1.3)~~	~~.~~	~~(0.0897)~~	~~(0.0095)~~	~~(0.42)~~	~~.~~	~~.~~	~~7.93~~	~~(0.4)~~	~~.~~	~~0.0494~~	~~.~~	~~(0.78)~~
VS 813-89	.	.	.	200	.	.	.	.	.	.	.	.	.	.	.	.	.	.
VS 3192-89	.	.	.	.	.	.	.	.	.	.	.	.	13	40	.	.	.	0.08

Number	Nb	Nd	Ni	P	Pd	Pb	Pr	Pt	Ra	Rb	S	SO_3%	Sb	Sc	Se	Sm	Sn
SRM 1d	(0.7)	(3)	(4)	.	.	.	(0.6)	.	.	(6)	1028	.	.	.	.	(0.5)	(1)
UL CCH1	.	4.2	11	.	.	6	.	.	.	(2.6)	1283	.	(0.25)	0.45	.	0.77	(<5)
NCS DC73375	0.8	1.96	(4)	57	N:(68)	5	0.60	.	.	4.0	36	.	0.072	(0.7)	0.021	0.40	(0.5)
GUW KH	.	.	20	.	.	.	.	.	.	25	.	.	.	3	.	2.2	.
GUW KH2	.	.	20.3	.	.	(6)	.	.	.	22	.	.	.	2.83	.	.	.
GUW KH3	.	.	.	.	.	.	.	.	.	.	900	(0.2)	.	.	.	.	.
VS 3193-85	(8)	.	7	.	.	16	.	.	.	15	.	.	.	(2)	.	.	.
VS 3193-89	7	.	5	.	.	10	.	.	.	15	.	.	.	2.2	.	.	.
GBW 07108	6.6	12.0	18	226	.	18	3.4	.	.	32	(370)	.	0.43	6.0	0.09	2.4	(0.98)
~~JDo-1~~	~~(0.4)~~	~~5.25~~	~~2.90~~	~~.~~	~~trace~~	~~(0.95)~~	~~0.956~~	~~trace~~	~~.~~	~~(1.75)~~	~~(90.5)~~	~~.~~	~~(0.036)~~	~~0.136~~	~~(0.0468)~~	~~0.788)~~	~~.~~
VS 813-89	.	.	5	.	.	8	.	.	2e-10	5	200	.	.	.	.	.	.
VS 3192-89	37	.	18	.	.	13	.	.	.	57	.	.	.	8	.	.	1.7

Number	Sr	SrO	Ta	Tb	Te	Th	Ti%	Tl	Tm	U	V	W	Y	Yb	Zn	ZnO	Zr
SRM 1d	.	303	.	(0.09)	.	(0.5)	.	.	.	(1)	(10)	.	(5)	(0.3)	.	22	.
UL CCH1	267	.	(0.03)	0.11	.	0.30	.	.	.	3.9	27	.	(7)	0.24	29	.	(35)
NCS DC73375	107	.	(0.05)	0.054	.	0.86	0.230	(0.03)	(0.024)	0.24	5.4	0.13	1.9	0.15	7	.	11
GUW KH	545	.	0.19	.	.	2.6	.	.	.	.	24	.	.	0.86	22	.	35
GUW KH2	532	.	.	.	.	2.08	.	.	.	(8)	.	.	.	.	22.9	.	.
GUW KH3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
VS 3193-85	500	.	.	.	.	(2)	.	.	.	(1)	24	.	(9)	(1)	25	.	26
VS 3193-89	440	.	.	.	.	1.8	.	.	.	1.0	.	.	.	0.9	30	.	27
GBW 07108	913	.	0.42	0.35	(0.024)	4.1	0.1960	0.33	0.17	1.9	36	0.67	9.1	0.90	52	.	62
~~JDo-1~~	~~116~~	~~.~~	~~(0.009)~~	~~0.116~~	~~.~~	~~0.0429~~	~~.~~	~~(0.003)~~	~~(0.059)~~	~~0.058~~	~~3.14~~	~~.~~	~~10.3~~	~~0.323~~	~~35.4~~	~~.~~	~~6.21~~
VS 813-89	90	.	.	.	.	1.0	.	.	.	1.5	25	.	.	.	30	.	30
VS 3192-89	44	.	.	.	.	15	.	.	.	0.8	22	.	.	2.5	30	.	70

LIMESTONE AND DOLOMITE

= class, where 1 = CRM and 2 = RM

f.SiO_2 = free SiO_2

#	Number	CaO	Al_2O_3	Fe	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P	P_2O_5	S	SO_3	SiO_2	f.SiO_2	TiO_2	LOI
1	NCS DC16006	65.20	0.885	.	0.46	0.19	4.55	0.013	0.021	0.0054	.	0.101	.	3.72	.	.	25.06
1	~~VS W10/3~~	~~55.8~~	~~0.012~~	~~.~~	~~.~~	~~.~~	~~0.32~~	~~.~~	~~.~~	~~0.0035~~	~~.~~	~~0.0053~~	~~.~~	~~0.050~~	~~.~~	~~.~~	~~.~~
1	ECRM 752-1	55.4	0.12	.	0.045	0.02	0.15	0.01	(<0.03)	.	(0.01)	0.007	.	0.70	.	0.009	43.4
1	BCS 513	55.59	0.108	.	0.0275	0.0150	0.182	0.0095	(<0.3)	.	(0.005)	0.0097	.	0.228	.	(0.004)	43.61
1	DK 1a	55.4	0.05	.	0.04	0.01	0.39	0.01	0.01	.	.	.	0.02	0.64	.	<0.01	43.3
1	NCS DC14014b	55.12	0.079	.	0.341	0.0030	0.73	0.0058	0.0075	0.0013	.	0.010	.	0.073	.	Ti:0.0010	43.53
1	~~NM 711~~	~~55.10~~	~~.~~	~~.~~	~~.~~	~~.~~	~~0.50~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~0.52~~	~~.~~	~~.~~	~~43.48~~
2	DH X3513	55.06	0.097	.	0.082	0.029	0.466	0.017	0.003	.	0.007	.	0.012	0.289	.	0.006	.
1	NCS DC60107b	54.71	0.24	.	0.098	0.049	0.66	0.0098	0.0063	.	0.0055	.	0.024	0.43	0.16	0.010	43.30
1	VB K1	54.58	0.11	.	0.097	(0.028)	0.72	0.0095	0.020	.	(0.016)	.	(0.051)	0.44	.	(0.011)	43.70
1	NCS DC14017b	54.11	0.61	.	0.319	0.0038	0.79	0.0074	0.021	0.0017	.	0.182	.	0.85	.	Ti:0.0021	42.79
1	~~GBW 03105a~~	~~54.03~~	~~0.24~~	~~.~~	~~0.11~~	~~0.084~~	~~0.81~~	~~0.0067~~	~~0.017~~	~~.~~	~~0.0081~~	~~.~~	~~0.018~~	~~1.09~~	~~0.67~~	~~0.010~~	~~43.12~~
1	~~NM 172~~	~~52.78~~	~~0.27~~	~~.~~	~~0.27~~	~~0.10~~	~~1.58~~	~~0.013~~	~~.~~	~~.~~	~~.~~	~~0.0089~~	~~.~~	~~1.92~~	~~.~~	~~0.011~~	~~42.57~~
1	NCS DC28205	52.42	0.39	.	0.197	.	1.92	0.0054	.	0.0019	.	0.012	.	2.17	.	0.0093	42.53
1	NCS DC60108a	51.61	0.33	.	0.17	0.17	2.25	0.0089	0.017	.	0.0061	.	0.016	2.09	1.38	0.015	42.84
1	NCS DC14015b	51.41	0.74	.	0.838	0.0062	2.31	0.013	0.0073	0.0021	.	0.273	.	2.06	.	Ti:0.0071	41.79
1	NCS DC28204	50.72	0.18	.	0.208	.	3.96	0.012	.	0.0076	.	0.016	.	0.83	.	0.0060	43.70
1	NCS DC60109a	50.09	0.94	.	0.58	(0.42)	1.79	(0.014)	(0.027)	.	0.033	.	(0.054)	4.05	(2.02)	(0.052)	41.53
2	~~DH X3515~~	~~48.91~~	~~0.787~~	~~.~~	~~1.293~~	~~0.187~~	~~0.379~~	~~0.028~~	~~0.032~~	~~.~~	~~0.036~~	~~.~~	~~0.055~~	~~8.75~~	~~.~~	~~0.048~~	~~.~~
1	NCS DC62002d	48.16	1.67	.	1.17	0.61	0.93	.	0.09	.	.	.	0.06	7.88	.	0.12	38.96
1	NCS DC60110a	47.07	0.60	.	0.38	(0.20)	5.81	(0.012)	(0.016)	.	(0.037)	.	(0.032)	2.25	(1.21)	(0.030)	43.22
1	~~DK 1b~~	~~43.6~~	~~3.20~~	~~.~~	~~1.25~~	~~0.96~~	~~3.00~~	~~0.02~~	~~0.13~~	~~.~~	~~.~~	~~.~~	~~0.13~~	~~9.5~~	~~.~~	~~0.15~~	~~37.7~~
1	VB K2	43.19	3.93	.	1.39	0.82	0.65	0.025	0.064	.	.	.	0.22	13.38	.	(0.21)	35.61
1	NCS DC14050	42.62	0.36	.	0.260	0.021	9.45	0.015	0.015	0.0033	.	0.039	.	7.97	.	Ti:0.0096	38.80
1	IPT 122	32.0	1.24	.	0.65	0.43	17.5	0.042	0.019	.	0.048	.	.	4.3	.	0.06	43.3
1	VS K4/4	31.2	0.47	.	0.56	.	20.1	0.034	.	.	.	.	.	0.96	.	.	.
1	~~SRM 88b *~~	~~29.95~~	~~0.336~~	~~.~~	~~0.277~~	~~0.1030~~	~~21.03~~	~~0.0160~~	~~0.0290~~	~~.~~	~~0.0044~~	~~.~~	~~.~~	~~1.13~~	~~.~~	~~(0.016)~~	~~(46.98)~~
1	DK 2a **	29.2	0.91	.	1.01	0.37	19.5	0.06	0.04	.	.	.	0.06	4.3	.	0.07	44.3

continued

Number	CO_2	Cl^-	Cr	Cr_2O_3	Cu	Pb	SrO	Zn	Ins.Res	Units	
NCS DC16006	.	.	.	.	.	.	.	.	.	15 g	
~~VS W10/3~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~75 g~~	
ECRM 752-1	.	.	.	.	.	.	0.019	.	.	100 g	
BCS 513	.	.	.	0.0012	.	0.0009	0.0176	0.0014	.	100 g	
DK 1a	.	.	.	.	.	.	.	.	.	60 g	
NCS DC14014b	.	.	.	.	.	.	Sr:0.025	.	.	50 g	
~~NM 711~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~100 g~~	
DH X3513	43.80	.	.	.	.	.	0.019	.	.	100 g	$-H_2O$ @ 900'C: 0.099
NCS DC60107b	(43.28)	0.014	.	.	.	.	.	.	.	50 g	
VB K1	(43.54)	.	(0.0025)	.	(0.00055)	.	.	.	.	100 g	
NCS DC14017b	.	.	.	.	.	.	Sr:0.024	.	.	50 g	
~~GBW 03105a~~	~~(43.12)~~	~~0.0028~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~50 g~~	
~~NM 172~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~100 g~~	
NCS DC28205	.	.	.	.	.	.	0.023	.	.	50 or 100 g	
NCS DC60108a	(42.59)	0.0066	.	.	.	.	.	.	.	50 g	
NCS DC14015b	.	.	.	.	.	.	Sr:0.023	.	.	50 g	
NCS DC28204	.	.	.	.	.	.	0.046	.	.	50 or 100 g	
NCS DC60109a	(41.32)	(0.0062)	.	.	.	.	.	.	.	50 g	
~~DH X3515~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~0.050~~	~~.~~	~~.~~	~~100 g~~	
NCS DC62002d	.	.	.	.	.	.	.	.	.	20 g	
NCS DC60110a	(43.02)	(0.0054)	.	.	.	.	.	.	.	50 g	
~~DK 1b~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~60 g~~	
VB k2	.	.	.	.	.	.	.	.	.	100 g	
NCS DC14050	.	.	.	.	.	.	Sr:0.017	.	.	50 g	
IPT 122	.	.	.	.	.	.	0.018	.	.	80 g	
VS K4/4	.	.	.	.	.	.	.	.	1.30	75 g	
~~SRM 88b *~~	~~46.37~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~0.0076~~	~~.~~	~~.~~	~~75 g~~	~~* SRM 88b lists Mn as MnO~~
DK 2a **	.	.	.	.	.	.	.	.	.	60 g	** DK 2a lists Mn_3O_4 as MnO

CRM SYNTHETIC LIMESTONE WITH TRACE ELEMENTS

Material base: $CaCO_3$ 85%, $MgCO_3$ 8%, SiO_2 5.2%, Al_2O_3 1.1%, Fe_2O_3 0.3%, Na_2SO_4 0.2%, K_2SO_4 0.2%

70 g units analysis listed in mg/kg

Number	Ag	As	B	Ba	Be	Bi	Cd	Ce	Co	Cr	Cu	Ga	La	Li	Mn
GBW 07712	(0.030)	2.2	2.2	24	0.22	0.23	(0.023)	2.8	2.3	2.3	2.2	2.8	2.6	3.2	37
GBW 07713	0.060	5.2	5	54	0.52	0.53	0.053	5.8	5.3	5.3	5.2	5.8	5.6	6.2	67
GBW 07714	0.11	10.2	10	104	1.0	1.0	0.10	11	10.3	10.3	10.2	10.8	10.6	11.2	117
GBW 07715	0.21	20	20	204	2.0	2.0	0.20	21	20.3	20.3	20	20.8	20.6	21	217
GBW 07717	1.0	100	100	1000	10	10	1.0	101	100	100	100	101	101	101	1020
GBW 07718	2.0	200	200	2000	20	20	2.0	200	200	200	200	200	200	200	2020
GBW 07719	5.0	500	500	5000	50	50	5.0	500	.	.	500	.	.	500	5000
GBW 07720	10	.	.	.	100	100	10	.	.	.	1000	.	.	.	10000

continued

Number	Mo	Nb	Ni	Pb	Sb	Sn	Sr	Ti	V	W	Y	Yb	Zn	Zr
GBW 07712	0.21	2.5	2.1	2.4	0.21	0.28	170	31	3.2	0.22	2.1	0.22	3.0	4.0
GBW 07713	0.51	5.5	5.1	5.4	0.51	0.58	200	61	6.2	0.52	5.1	0.52	6.0	7.0
GBW 07714	1.0	10.5	10	10.4	1.0	1.1	250	111	11.2	1.0	10	1.0	11	12
GBW 07715	2.0	20.5	20	20.4	2.0	2.1	350	210	21	2.0	20	2.0	21	22
GBW 07717	10	100	100	100	10	10	1150	1010	101	10	100	10	101	102
GBW 07718	20	200	200	200	20	20	2200	2000	200	20	200	20	200	202
GBW 07719	50	.	500	500	50	50	5200	5000	500	50	.	50	500	500
GBW 07720	100	.	.	1000	100	100	.	.	.	100	.	100	1000	.

CRM LITHIUM ORE WITH EXTENSIVE ANALYSIS

analysis listed in mass % **17025** 100 g units

Number	Al_2O_3	CaO	Fe_2O_3T	K_2O	Li_2O	MgO	MnO	Na_2O	P_2O_5	S	SiO_2	TiO_2	Zn	LOI	Units
CGL 128	13.66	0.746	0.663	6.28	0.578	0.033	0.603	(0.603)	(0.029)	(0.223)	73.40	(0.053)	0.0594	(2.14)	100 g

continued analysis listed in mg/kg

Number	As	Ba	Bi	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd
CGL 128	61.75	83.51	185	(3.64)	(46.93)	(0.401)	(105)	(67.38)	186	(1.37)	(1.18)	(0.091)	(29.69)	(1.22)

Number	Hf	Ho	In	La	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Rb	Sb	Sc
CGL 128	(5.64)	(0.313)	(0.303)	(28.92)	(0.421)	(7.26)	(77.63)	(8.64)	(1.76)	558	(3.41)	(2135)	(20.50)	(9.62)

Number	Sm	Sn	Sr	Ta	Tb	Te	Th	Tl	Tm	U	W	Y	Yb	Zr
CGL 128	(2.26)	(11.43)	24.54	(9.74)	(0.208)	(1.12)	(24.20)	(14.65)	(0.240)	45.28	107	(12.33)	(2.19)	69.94

CRM LITHIUM ORE

analysis listed in mass % 10 g units

Number	Li	Ta	Al	Ca	Fe	K	Mg	Mn	Na	Nb	Si	SiO_2	Sn	LOI
GTA-10	2.8622	0.0928	13.9	<0.2	0.59	1.0	0.09	0.0900	.	<0.04	30.1	.	0.0542	0.93
GTA-11	2.5760	0.0845	13.4	<0.5	1.00	1.3	0.18	0.0885	.	0.0267	30.2	.	0.0484	0.83
GTA-12	1.7412	0.0556	11.5	0.8	1.85	2.4	0.38	0.0770	.	0.0183	30.8	.	0.0325	1.05
GTA-13	1.4384	0.0458	10.8	0.8	2.06	2.8	0.40	0.0699	.	0.0153	30.8	.	0.0271	1.08
~~GTA-04~~	~~0.9275~~	~~.~~	~~8.11~~	~~0.24~~	~~1.30~~	~~2.05~~	~~.~~	~~0.0738~~	~~1.33~~	~~.~~	~~34.4~~	~~.~~	~~(0.0140)~~	~~.~~
GTA-05	0.8422	.	7.85	0.17	(0.88)	2.29	.	0.0749	2.27	.	34.5	.	(0.0070)	.
GTA-06	0.7843	.	8.03	0.17	(0.66)	2.58	.	0.1304	2.34	.	34.5	.	(0.0131)	.
~~GTA-03~~	~~0.7782~~	~~0.0173~~	~~8.22~~	~~0.19~~	~~1.01~~	~~2.95~~	~~.~~	~~0.1146~~	~~2.23~~	~~0.0069~~	~~.~~	~~72.0~~	~~0.0296~~	~~.~~
GTA-14	0.6362	0.0204	9.1	1.2	2.75	3.8	0.54	0.0590	.	0.0076	31.5	.	0.0122	1.18
GTA-09	0.4886	0.0148	8.46	0.24	0.63	1.79	.	0.1382	4.01	.	33.47	.	0.0094	.
GTA-01	0.3132	0.0415	7.59	0.25	0.52	2.18	.	0.0814	3.72	0.0047	.	73.4	0.0438	.
GTA-15	0.2434	0.0078	8.3	1.4	3.12	4.4	0.61	0.0523	.	<0.005	31.9	.	0.0048	1.20
GTA-02	0.1715	0.0691	8.31	0.31	0.48	2.49	.	0.0623	4.03	0.0052	.	71.8	0.0395	.
GTA-08	0.1121	0.0146	7.92	1.20	2.46	3.78	.	0.0639	0.258	.	31.88	.	0.0154	.
~~GTA-07~~	~~0.0502~~	~~0.0203~~	~~7.97~~	~~1.35~~	~~2.72~~	~~4.00~~	~~.~~	~~0.0576~~	~~2.55~~	~~.~~	~~31.41~~	~~.~~	~~0.0117~~	~~.~~

CRM LITHIUM ORE

analysis listed in mass %

Number	Li_2O	Al_2O_3	CaO	Cs_2O	F-	FeO	$T.Fe_2O_3$	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	Rb_2O	SiO_2	TiO_2	LOI
~~NCS DC86314~~	~~3.89~~	~~24.53~~	~~0.063~~	~~0.30~~	~~5.08~~	~~(0.043)~~	~~0.30~~	~~(2.77+)~~	~~7.75~~	~~0.027~~	~~0.40~~	~~1.08~~	~~0.13~~	~~1.24~~	~~53.92~~	~~0.029~~	~~(5.34)~~
NCS DC86304	2.29	19.12	0.076	0.177	3.12	(0.020)	0.301	2.29-	4.80	0.036	0.252	2.33	0.237	0.735	64.64	0.028	4.06
NCS DC86303	0.460	14.76	0.335	0.037	0.667	(0.062)	0.394	1.06-	3.17	0.054	0.070	4.19	0.173	0.145	74.37	0.018	1.48

continued analysis listed in mg/kg except % which is mass %

Number	BeO%	CeO_2	Dy_2O_3	Er_2O_3	Eu_2O_3	Gd_2O_3	Ho_2O_3	La_2O_3	Lu_2O_3	Nb_2O_5	Nd_2O_3	Pr_6O_{11}
~~NCS DC86314~~	~~0.0164~~	~~(1.88)~~	~~0.50~~	~~0.24~~	~~0.10~~	~~0.56~~	~~0.094~~	~~1.16~~	~~0.036~~	~~81~~	~~1.66~~	~~0.46~~
NCS DC86304	0.026	2.6	0.64	0.26	0.13	0.75	(0.13)	(2.1)	0.034	61.1	2.8	0.63
NCS DC86303	0.018	9.0	2.5	1.2	(0.14)	2.1	0.45	5.1	0.18	27.0	5.0	1.3

Number	REXOy*	Sc_2O_3	Sm_2O_3	Sn	Ta_2O_5%	Tb_4O_7	Tm_2O_3	W	Y_2O_3	Yb_2O_3	Units
~~NCS DC86314~~	~~10.7~~	~~0.31~~	~~0.52~~	~~152~~	~~.~~	~~0.10~~	~~0.039~~	~~79.0~~	~~3.06~~	~~0.22~~	~~70 g~~
NCS DC86304	15.2	0.44	0.64	97.1	0.012	0.13	0.040	43.7	3.4	0.23	70 g
NCS DC86303	47.0	0.98	1.6	(36)	0.00494	0.43	0.18	8.9	16.9	1.3	70 g

* RE_xO_y: Rare Earth Oxide

CRM LITHIUM ORE

45 g units

Number	Li_2O%
SRM 182	4.34
SRM 183	4.12

CRM LUJAVRITE

analysis listed in mass %

Number	SiO_2	Al_2O_3	CaO	FeO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	TiO_2	Ba	Be	Co	Cr	Cu	Ga	Ge
VS 2124-81	56.13	16.96	1.25	1.14	5.52	6.23	0.74	0.254	9.26	0.92	0.080	0.00139	0.00063	0.00125	0.00111	0.0063	0.00013

continued

Number	La	Li	Mo	Nb	Ni	Pb	Rb	Sn	Sr	V	Y	Yb	Zn	Units
VS 2124-81	0.040	0.0037	0.00028	0.034	0.00078	0.0020	0.0250	0.0014	0.080	0.0086	0.0081	0.00057	0.012	40 g

CRM LOW BORON MAGNESITE

Number	Al	B	Ca	Cr	Fe	K	Mg	Mn	Na	P	Si	Ti	Units
ECRM 779-1	0.105	0.0116	1.691	(0.0030)	3.73	(0.0020)	(54.57)	0.503	(0.0058)	0.0267	0.182	0.0081	100 g

CRM MAGNESITE

analysis listed in mass % — 100 g units — analysis listed in mg/kg

Number	MgO	Al_2O_3	CaO	Fe_2O_3	FeO	K_2O	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	Ba	Ce	Co	Cr	Cu	Ni	Sr	Zn
SARM 43	44.11	(0.06)	0.89	0.26	(0.1)	(0.04)	(0.1)	(0.05)	(0.02)	5.99	(0.01)	(25)	(20)	4	(195)	(15)	252	8	(10)

MAGNESITE

= class, where 1 = CRM and 2 = RM analysis listed in mass % CERAM: 25 or 100g NCS: 50g NH: 75g others: 100g

#	Number	MgO	Al_2O_3	B_2O_3	CaO	Cr_2O_3	Fe_2O_3	K_2O	MnO	Mn_2O_3	Na_2O	P_2O_5	S	SiO_2	SrO	TiO_2	LOI
1	BCS 389/1	97.89	0.104	.	0.880	.	0.607	.	0.100	.	.	0.0295	.	0.274	.	0.0052	.
1	BCS 319/1	95.38	0.109	.	3.00	0.0035	0.291	.	0.108	.	.	.	.	1.093	.	0.0070	.
2	CERAM AN37	94.00	.	0.09	1.46	0.005	1.80	<0.01	.	0.12	<0.05	0.02	.	1.39	.	0.03	.
2	CERAM AN36	93.30	.	0.09	0.94	0.004	4.66	<0.01	.	0.11	<0.05	0.008	.	0.48	.	0.01	.
1	ECRM 778-1	81.02	0.56	.	1.23	0.15	0.96	.	0.014	.	.	(0.009)	.	1.05	.	(0.013)	.
1	NCS DC28090	46.40	0.10	.	0.53	.	0.65	0.0050	0.016	.	0.017	0.013	0.0027	0.32	0.005	0.0060	51.58
1	USZ 37-2003	45.80	0.04	.	1.69	.	0.05	0.011	.	.	.	.	.	0.25	.	CO_2: 48.31	51.35
1	UNS MK	45.22	0.414	.	0.581	.	.	0.013	0.160	.	0.024	0.055	.	0.593	.	0.019	.
1	NCS DC28089	43.45	1.14	.	1.52	.	1.74	0.037	0.095	.	0.018	0.036	0.015	4.13	0.0013	0.041	47.35
1	NCS DC28089a	43.44	1.46	.	1.26	.	1.66	0.044	0.083	.	0.020	0.037	0.015	4.95	0.0014	0.048	46.57
2	CERAM AN43	.	.	0.005	.	.	.	(0.06)	.	.	.	.	.	.	.	.	last
2	CERAM AN45	.	.	0.222	.	.	.	.	.	.	.	.	.	.	.	.	last

RM MAGNESITE

typical analysis listed in mass % 100 g units

Number	MgO	Al_2O_3	C tot.	CO_2	CaO	Cr_2O_3	Fe_2O_3	K_2O	Mn_3O_4	P_2O_5	S	SiO_2	TiO_2	V_2O_5	ZnO	ZrO_2	$-H_2O$ at 900'C
DH 4208	47.83	41.66	0.353	0.580	2.06	0.040	1.49	0.037	0.070	0.077	0.007	5.09	0.066	0.001	0.006	0.091	0.894

CRM MAGNETITE ORE

analysis listed in mass & 250 g units

Number	Fe	Al_2O_3	CaO	K_2O	MgO	Mn	Na_2O	P	S	SiO_2	TiO_2	LOI
IMS PBS-59	32.82	0.56	1.23	0.429	2.16	0.064	0.644	0.069	(0.006)	46.45	(0.028)	1.34
IMS PBS-71	30.70	1.46	0.496	0.660	2.23	0.118	0.153	0.103	0.131	47.22	0.073	3.26
IMS PBS-70	30.46	1.49	0.492	0.675	2.26	0.117	0.149	0.102	0.133	47.54	0.073	3.28

Number	As	Ba	Cl	Co	Cr	Cu	Ni	Pb	Sn	Sr	V	Zn	Zr
IMS PBS-59	.	(0.005)	(0.015)	(0.001)	(0.011)	(0.002)	(0.002)	(0.001)	(0.002)	(0.003)	.	(0.002)	(0.003)
IMS PBS-71	(0.002)	(0.006)	(0.043)	(0.002)	(0.008)	(0.001)	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.004)
IMS PBS-70	(0.001)	(0.006)	(0.043)	(0.001)	(0.007)	(0.002)	(0.002)	(0.003)	(0.001)	(0.003)	(0.002)	(0.002)	(0.004)

CRM **MANGANESE ORE** # = class, where 1 = CRM and 2 = RM analysis in mass % T = Total

#	Number	Mn	MnO_2	$Mn(CO_3)$	Al_2O_3	As	As_2O_3	Ba	BaO	CO_2	CaO	Fe	Fe_2O_3	K_2O	MgO	Na_2O	SiO_2	TiO_2
1	IGS 29	MnO: 93.38	.	.	.	.	.	0.59	.	.	.	.	.	.	.	.	.	.
1	VS R13/3	58.88	90.4	.	.	.	.	.	.	.	.	.	.	.	.	.	2.01	.
1	NCS DC26703	58.80	(62.07)	.	0.74	.	.	.	.	C:0.034	0.37	1.45	.	.	0.17	.	5.63	Ti:0.025
1	VS P13/1	58.8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.00	.
1	SRM 25d	51.78	.	.	(5.33)	.	.	.	(0.21)	.	(0.052)	.	(3.91)	(0.928)	.	.	2.54	(0.136)
1	SARM 16	49.17	.	.	(0.3)	.	.	.	0.60	.	4.70	11.48	.	0.02	0.76	(0.03)	5.04	.
1	NCS DC35015	49.00	68.28	.	.	0.015	.	.	.	.	.	3.97	.	.	.	.	.	.
1	JSS 861-2	48.7	.	.	Al: 1.57	.	.	.	.	.	Ca: 0.063	(5.7)	.	.	.	.	Si: 2.62	.
1	NCS DC26702	48.53	(72.64)	.	3.28	.	.	.	.	C:0.085	0.37	4.93	.	.	0.25	.	5.56	Ti:0.102
1	BAM 633-1	47.85	.	.	1.64	.	(0.004)	.	1.13	.	2.02	1.64	.	.	0.58	.	10.39	0.079
1	AMIS 0403	46.82	MnO: 60.42		0.37	.	.	.		Ca: 3.56	5.12	12.43	18.25	(0.023)	0.66	(0.18)	5.25	(0.02)
2	RH01	46.8	51.3	.	1.50	.	.	.	(0.3)	.	1.77	1.63	.	1.33	1.10	0.41	11.4	.
1	AMIS 0404	45.93	MnO: 59.45		(0.40)	.	.	.		Ca: 3.07	4.43	13.63	19.54	(0.06)	0.51	0.79	3.56	(0.02)
1	NCS DC25008	45.47	.	.	6.81	.	.	.	.	.	0.071	3.21	.	.	0.077	.	9.51	0.087
1	NCS DC26704	45.20	(67.71)	.	6.88	.	.	.	.	C:0.090	0.103	6.03	.	.	0.097	.	5.55	Ti:0.092
1	NCS DC28045	44.97T	67.67	.	2.35	0.042	.	.	0.058	.	0.195	2.75T	.	1.48	0.182	0.034	16.00	0.105
1	NCS DC26701	44.95	(32.31)	.	0.37	.	.	.	.	C:1.22	7.53	10.50	.	.	1.05	.	5.41	Ti:0.010
1	NCS DC28210	44.76	66.46	.	7.28	.	.	.	.	.	0.24	5.72	.	.	0.257	.	4.62	0.34
1	VS R12/2	43.24	52.4	.	1.87	.	.	.	0.53	.	2.02	1.56	.	.	1.16	.	15.00	.
1	AMIS 0402	43.01	MnO: 56.77		0.38	.	.	.		Ca: 3.88	5.70	15.38	22.12	(0.02)	0.54	(0.11)	4.31	(0.024)
1	SARM 17	38.81	.	.	0.24	.	.	.	(0.08)	.	(14.4)	4.27	.	0.09	3.03	0.09	4.69	.
1	SARM 149	38.0	.	.	0.221	.	.	.	0.050	.	14.2	5.39	.	0.132	2.08	0.147	5.89	.
1	OREAS 170b	MnO: 59.46		.	3.90	.	.	.	.	.	0.270	.	7.04	1.80	0.329	0.318	9.49	0.189
1	OREAS 170a	MnO: 58.17		.	4.44	.	.	.	.	.	0.090	.	6.49	1.70	0.222	0.276	11.34	0.179
1	NCS DC28044	36.31T	45.02	.	2.08	0.039	.	.	0.410	.	3.30	6.90T	.	0.49	1.29	0.076	17.70	0.085
1	AMIS 0407	35.72	MnO: 46.81		0.29	.	.	.		Ca: 11.04	15.81	4.10	6.03	0.04	3.17	(0.039)	5.51	(0.02)
1	NCS DC11023	35.54T	52.73	.	3.80	0.112	.	.	1.62	.	2.34	10.25T	.	0.396	0.78	0.053	13.03	0.143
1	**CGL 127**	MnO: 45.9		.	9.27	(0.0131)	.	(0.9384)		.	(1.63)	.	19.51T	(0.017)	0.79	(0.086)	10.84	0.53
1	NCS DC28062	34.67	51.64	.	9.97	.	.	.	.	.	0.48	8.05	.	1.14	0.87	0.063	10.70	.
1	VS 5404-90	34.12	48.66	.	5.28	.	.	.	.	.	4.68	6.68	.	0.83	0.45	0.38	15.69	0.27
1	NCS DC28211	32.70	32.32	.	3.30	.	.	.	.	.	4.21	10.47	.	.	3.04	.	14.40	0.16
1	AMIS 0406	32.27	MnO: 41.81		0.24	.	.	.		Ca: 12.62	18.13	4.62	6.77	(0.11)	3.51	(0.14)	4.36	(0.02)
1	NCS DC28043	30.99T	45.61	.	6.40	0.089	.	.	1.11	.	1.15	10.68T	.	0.65	0.70	0.058	17.30	0.215
1	NCS DC11022	29.48T	41.76	.	6.49	0.062	.	.	1.04	.	1.82	10.22T	.	0.89	0.65	0.062	19.84	0.224
1	NCS DC28209	27.76	21.00	.	1.77	.	.	.	.	.	5.44	12.00	.	.	4.08	.	17.54	0.085
1	NCS DC28063	27.45	39.38	.	10.05	.	.	.	.	.	0.99	8.10	.	1.57	1.16	0.064	20.96	.
1	NCS DC11021	26.53T	36.60	.	6.99	0.052	.	.	0.80	.	2.31	11.01T	.	1.01	0.774	0.064	22.10	0.247
1	NCS DC28061	22.93	33.45	.	9.88	.	.	.	.	.	1.11	6.71	.	1.95	0.94	0.053	31.42	.
1	NCS DC28042	22.18T	18.35	.	2.80	0.032	.	.	0.164	.	6.20	10.62T	.	0.83	3.14	0.049	24.73	0.123
1	NCS DC11020	22.31T	30.34	.	7.69	0.034	.	.	0.54	.	2.36	9.66T	.	1.11	1.72	0.056	28.11	0.270
1	KZ 185-89	21.61T	.	.	1.42	.	.	.	.	.	25.72	1.11T	.	0.11	0.95	.	16.07	0.066
1	NCS DC11019	18.36T	25.59	.	5.66	0.031	.	.	0.43	.	12.83	8.89T	.	1.04	0.611	0.045	21.94	0.206
1	NCS DC28060	18.22	27.06	.	10.39	.	.	.	.	.	1.22	5.86	.	2.34	0.84	0.054	38.94	.
~~1~~	~~VS 5406-90~~	~~15.98~~	~~14.40~~	~~.~~	~~9.78~~	~~.~~	~~.~~	~~2.65~~	~~.~~	~~1.29~~	~~1.96~~	~~2.43~~	~~.~~	~~4.99~~	~~0.74~~	~~0.70~~	~~47.66~~	~~0.31~~
1	NCS DC28041	14.45T	20.66	.	8.25	0.013	.	.	0.064	.	2.07	0.85T	.	3.74	0.60	0.48	56.03	0.177

#	Number	Mn	MnO_2	$Mn(CO_3)$	Al_2O_3	As	As_2O_3	Ba	BaO	CO_2	CaO	Fe	Fe_2O_3	K_2O	MgO	Na_2O	SiO_2	TiO_2

Number	Cr	Cu	Ge	Ni	P	P_2O_5	Pb	S	V	Zn	LOI	Units	Other
IGS 29	.	.	.	.	.	.	.	.	.	.	.	40 g	
VS R13/3	.	0.0219	.	0.101	0.196	.	0.0013	0.07	.	.	.	100 g	
NCS DC26701	.	0.024	.	(0.002)	0.033	.	0.013	0.18	.	0.013	.	50 g	Co: 0.008
VS P13/1	.	.	.	.	0.197	.	0.0014	0.070	.	.	.	100 g	MnO: 90.4, last of stock
SRM 25d	.	.	.	.	.	0.251	.	.	.	.	.	60 g	available Oxygen: 14.28, H_2O: (0.96)
SARM 16	.	.	.	.	0.033	.	.	0.17	.	0.0364	.	100 g	
NCS DC35015	.	0.006	.	0.014	.	.	0.015	.	.	0.036	.	80 g	Co: 0.025
JSS 861-2	.	0.0064	.	.	0.086	.	.	0.0084	.	.	(3.3)	100 g	Activated O: 13.55
NCS DC26702	.	0.005	.	0.012	0.080	.	0.012	0.017	.	0.016	.	50 g	Co: 0.014
BAM 633-1	.	.	.	.	0.170	.	.	0.227	.	.	.	100 g	
AMIS 0403	Cr2O3: (0.03)		.	.	.	0.08	.	specific gravity: 4.63			4.27	100 g	multiple Mn
RH01	.	.	.	.	0.28	.	.	(0.025)	.	.	12.8	100 g	
AMIS 0404	Cr2O3: (0.024)		.	.	.	(0.08)	.	specific gravity: 4.65			4.88	100 g	multiple Fe, Mn
NCS DC25008	.	.	.	.	0.094	.	.	.	.	.	.	50 g	B: 0.0018
NCS DC26703	.	0.033	.	0.0024	0.009	.	0.018	0.003	.	0.219	.	50 g	Co: 0.0014
NCS DC28045	0.038	0.022	.	0.079	0.230	.	0.011	0.0086	0.018	0.070	.	50 g	
NCS DC26704	.	0.009	.	0.039	0.127	.	(0.007)	0.028	.	0.052	.	50 g	Co: 0.096
NCS DC28210	.	0.062	.	0.057	0.099	.	0.014	.	.	0.088	.	50 g	
VS R12/2	.	.	.	.	0.209	.	.	0.029	.	.	.	100 g	
AMIS 0402	Cr2O3: (0.05)		.	.	.	0.10	.	specific gravity: 4.62			4.97	100 g	multiple Ca, Fe, Mn
SARM 17	.	.	.	.	0.018	.	.	(0.01)	.	0.0043	.	100 g	
SARM 149	.	.	.	.	0.021	.	.	.	.	.	.	100 g	
OREAS 170b	.	.	.	.	.	0.195	.	.	.	.	11.95	10 g	
OREAS 170a	.	.	.	.	.	0.152	.	.	.	.	12.14	10 g	
NCS DC28044	0.0018	0.0086	.	0.010	0.105	.	0.0083	0.021	0.0075	0.027	.	50 g	
AMIS 0407	Cr2O3: 0.22		.	.	.	(0.04)	.	specific gravity: 3.74			17.83	100 g	multiple Mn
NCS DC11023	0.0053	0.011	.	0.023	0.105	.	0.058	0.052	0.016	0.066	.	60 g	
CGL 127	(0.0086)	(0.0127)	**17025**	0.0377	.	0.76	(0.0038)	.	(0.0241)	0.0182	(6.41)	100 g	mg/kg: Co:316 Y:104 Sr:1354 Zr:208
NCS DC28062	.	.	.	.	0.050	.	0.011	.	.	.	.	50 g	
VS 5404-90	.	.	0.00034	0.013	0.027	.	0.15	0.023	.	0.16	.	50 g	Co: 0.0086
NCS DC28211	.	0.020	.	0.016	0.087	.	0.0090	.	.	0.027	.	50 g	
AMIS 0406	Cr2O3: 0.08		.	.	.	(0.04)	.	specific gravity: 3.63			20.67	100 g	multiple Mn
NCS DC28043	0.013	0.015	.	0.083	0.171	.	0.110	0.100	0.019	0.235	.	50 g	
NCS DC11022	0.018	0.018	.	0.072	0.150	.	0.107	0.082	0.020	0.143	.	60 g	
NCS DC28209	.	0.0066	.	0.0025	0.069	.	0.0067	.	.	0.0071	.	100 g	
NCS DC28063	.	.	.	.	0.059	.	0.60	.	.	.	.	50 g	
NCS DC11021	0.019	0.021	.	0.073	0.163	.	0.124	0.084	0.020	0.164	.	60 g	
NCS DC28061	.	.	.	.	0.073	.	0.23	.	.	.	.	50 g	
NCS DC28042	0.0023	0.0071	.	0.0044	0.074	.	0.0066	0.044	0.0044	0.012	.	50 g	
NCS DC11020	0.026	0.021	.	0.089	0.171	.	0.120	0.109	0.020	0.170	.	60 g	
KZ 185-89	.	.	.	.	0.014	.	0.122	0.087T	.	0.047	.	100 g	
NCS DC11019	0.012	0.014	.	0.049	0.202	.	0.080	0.114	0.014	0.118	.	60 g	
NCS DC28060	.	.	.	.	0.082	.	0.025	.	.	.	.	50 g	
~~VS 5406-90~~	~~.~~	~~.~~	~~0.00049~~	~~.~~	~~0.043~~	~~.~~	~~0.23~~	~~0.22~~	~~.~~	~~0.010~~	~~.~~	~~50 g~~	
NCS DC28041	.	.	.	.	0.011	.	0.0025	0.012	.	0.015	.	50 g	

| Number | Cr | Cu | Ge | Ni | P | P_2O_5 | Pb | S | V | Zn | LOI | Units | Other |

CRM MANGANESE NODULE

analysis listed in mass % except * which is mg/kg T = Total * AMIS lists Mn by XRF and M/ICP

Number	MnO	MnO_2	Al_2O_3	COrg	CO_2	CaO	Fe_2O_3	K_2O	MgO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI	Density	Units
~~US NOD P 1~~	~~37.6~~	~~.~~	~~4.8~~	~~.~~	~~.~~	~~3.1~~	~~8.3T~~	~~1.2~~	~~3.3~~	~~2.2~~	~~0.46~~	~~13.9~~	~~0.5~~	~~.~~	~~.~~	~~25 g~~
AMIS 0104*	35.31*	35.49*	2.20	.	.	1.34	20.78	0.26	(0.35)	(0.10)	(P: 192*)	18.30	0.27	(3.28)	4.32	100 g or 1kg
VS 5374-90	35.09T	41.7	5.68	0.18	0.43	2.82	9.28T	1.27	3.40	2.94	0.68	16.60	0.74	15.3	.	50 g
JMn-1	33.09	.	4.30	.	.	2.91	14.40T	0.94	3.12	2.80	0.54	14.11	1.06	.	.	100 g
VS 5375-90	25.16T	31.1	5.46	0.22	0.60	3.01	24.87T	0.83	2.24	2.40	0.80	14.50	1.91	13.8	.	50 g
~~US NOD-A-1~~	~~23.9~~	~~.~~	~~3.87~~	~~.~~	~~.~~	~~15.4~~	~~15.6T~~	~~0.6~~	~~4.76~~	~~1.0~~	~~1.40~~	~~3.81~~	~~0.53~~	~~.~~	~~.~~	~~25 g~~
VS 5376-90	19.85T	24.2	6.71	.	0.50	5.13	22.13T	1.18	2.29	2.24	1.61	22.30	1.56	11.4	.	100 g

Number	As	Au*	B*	Ba	Be*	Bi*	C*	Cd*	Ce	Cl	Co	Cr	Cr_2O_3	Cs*	Cu	Dy*
~~US NOD P 1~~	~~.~~	~~.~~	~~.~~	~~0.3350~~	~~.~~	~~.~~	~~.~~	~~.~~	~~(0.0290)~~	~~.~~	~~0.2240~~	~~.~~	~~.~~	~~.~~	~~1.1500~~	~~(27)~~
AMIS 0104	(0.0116)	.	.	2.86	(2.1)	(0.61)	.	(0.78)	(0.02994)	.	0.0240	(0.01802)	(0.03)	(0.19)	(0.0192)	(10.6)
VS 5374-90	0.006	0.005	.	0.18	.	.	.	17	0.020	0.7	0.220	0.0018	.	.	1.01	.
JMn-1	0.00754	(0.00095)	(138)	0.1714	(7.8)	(4.3)	(905)	(15.5)	0.0277	.	0.1732	0.00266	.	0.60	1.1132	(28.3)
VS 5375-90	0.017	0.010	.	0.17	.	.	.	5	0.09	0.9	0.47	0.0019	.	.	0.22	.
~~US NOD A 1~~	~~.~~	~~.~~	~~.~~	~~0.1670~~	~~.~~	~~.~~	~~.~~	~~.~~	~~(0.0730)~~	~~.~~	~~0.3110~~	~~.~~	~~.~~	~~.~~	~~0.1100~~	~~(23)~~
VS 5376-90	0.014	.	.	0.16	19	.	.	.	0.10	.	0.27	0.0067	.	.	0.13	.

Number	Er*	Eu*	Ga*	Gd*	Ge*	H_2O+	Hf*	Ho*	In*	La	Li	Lu*	Mo	Nb	Nd	Ni
~~US NOD-P-1~~	~~(12)~~	~~(7.5)~~	~~.~~	~~(28)~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~(0.0104)~~	~~.~~	~~(1.8)~~	~~0.0760~~	~~.~~	~~(0.0120)~~	~~1.3400~~
AMIS 0104	(5.7)	(4.3)	(35.8)	(12.1)	(1.7)	.	(3.0)	(2.0)	(0.05)	(0.00444)	(0.00183)	(0.66)	(0.00047)	(0.00055)	(0.00557)	(0.00421)
VS 5374-90	.	.	.	.	.	.	.	.	.	0.009	0.014	.	0.052	0.0020	0.008	1.37
JMn-1	14.6	7.6	(37.1)	(29.8)	.	(7.90)	(6.2)	(5.8)	.	0.0122	(0.00717)	2.1	0.0318	(0.00276)	0.0137	1.2632
VS 5375-90	.	.	.	.	.	.	.	.	.	0.014	0.004	.	0.033	0.009	0.014	0.422
~~US NOD A 1~~	~~(12)~~	~~(5)~~	~~.~~	~~(26)~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~(0.0120)~~	~~.~~	~~(2.2)~~	~~0.0448~~	~~.~~	~~(0.0094)~~	~~0.6360~~
VS 5376-90	.	.	.	.	.	.	.	.	.	0.012	0.0019	.	0.035	0.006	0.010	0.34

Number	Li	Lu*	Mo	Nb	Nd	Ni	Pb	Pd*	Pr*	Pt*	Rb*	S	Sb*	Sc
~~US NOD P 1~~	~~.~~	~~(1.8)~~	~~0.0760~~	~~.~~	~~(0.0120)~~	~~1.3400~~	~~0.0560~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~
AMIS 0104	(0.00183)	(0.66)	(0.00047)	(0.00055)	(0.00557)	(0.00421)	(0.00507)	.	(12.6)	.	(5.3)	(0.32)	(9.7)	(4.6)
VS 5374-90	0.014	.	0.052	0.0020	0.008	1.37	0.040	.	.	0.10	21	0.10	.	11
JMn-1	(0.00717)	2.1	0.0318	(0.00276)	0.0137	1.2632	0.0430	.	(31.4)	(0.110)	10.9	(0.0940)	37.5	(13.0)
VS 5375-90	0.004	.	0.033	0.009	0.014	0.422	0.098	0.003	.	0.21	10	0.16	.	13
~~US NOD A 1~~	~~.~~	~~(2.2)~~	~~0.0448~~	~~.~~	~~(0.0094)~~	~~0.6360~~	~~0.0846~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~
VS 5376-90	0.0019	.	0.035	0.006	0.010	0.34	0.105	.	.	.	19	0.16	.	19

Number	Sm	Sn*	Sr	Ta*	Tb*	Th*	Tl	Tm*	U*	V	W*	Y	Yb*	Zn	Zr
~~US NOD P 1~~	~~(0.0030)~~	~~.~~	~~0.0680~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~0.0570~~	~~.~~	~~.~~	~~(1.3)~~	~~0.1600~~	~~.~~
AMIS 0104	(0.00128)	(2.0)	(0.0309)	(0.21)	(1.8)	(9.5)	(0.42*)	(0.78)	(8.1)	(0.0108)	(3.5)	(0.00412)	(4.9)	0.0142	(0.01341)
VS 5374-90	0.0022	.	0.064	.	.	17	.	.	4	0.043	.	0.011	13	0.12	0.032
JMn-1	0.00302	(4.4)	0.0792	(0.64)	4.8	11.7	.	2.1	5.0	0.0424	(45.3)	0.0111	13.8	0.1068	0.0344
VS 5375-90	0.003	.	0.11	.	.	38	.	.	8	0.048	.	0.014	14	0.058	0.060
~~US NOD A 1~~	~~(0.0021)~~	~~.~~	~~0.1750~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~0.0770~~	~~.~~	~~.~~	~~(14)~~	~~0.0590~~	~~.~~
VS 5376-90	0.0027	.	0.11	.	.	28	0.010%	.	6	0.054	.	0.016	6	0.060	0.055

CRM MANGANESE NODULE

analysis in mass %

Number	SiO_2	Co	Cu	T.Fe	T.Mn	Ni	Units
~~NM 2388~~	~~16.07~~	~~0.14~~	~~0.49~~	~~14.94~~	~~21.28~~	~~0.71~~	~~100 g~~

CRM MARIPOLITE

analysis listed in mass % 40 g units

Number	Al_2O_3	CO_2	CaO	FeO	Fe_2O_3	K_2O	MnO	Na_2O	Nb	Rb	SiO_2	TiO_2
VS 2122-81	21.96	0.72	1.20	0.88	2.05	4.30	0.085	10.79	0.034	0.030	56.29	0.045

continued analysis listed in mg/kg

Number	Ba	Be	Cr	Cu	Ga	Ge	La	Li	Mo	Ni	Pb	Sn	Sr	V	Y	Yb	Zn	Zr
VS 2122-81	170	86	9.8	21	80	1.4	130	4.3	5.2	6.5	25	15	120	13	64	5	69	70

CRM MERCURY ORE

analysis listed in mass % 100 g units

Number	Hg	Al_2O_3	CaO	FeO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	SiO_2	TiO_2	Co	Cr	Cu	Ni	Sr	V	LOI
USZ 43-2006	0.0689	0.53	17.39	0.49	4.66	0.03	9.93	0.29	0.07	41.01	0.018	0.0047	0.21	0.0007	0.10	0.0382	0.0038	25.28

RM MOLOCHITE

analysis listed in mass % 25 g unit, last

Number	Al_2O_3	BaO	CaO	Fe_2O_3	K_2O	MgO	Mn_3O_4	Na_2O	P_2O_5	SiO_2	SrO	TiO_2	ZrO_2
~~CERAM AN40~~	~~37.9~~	~~0.03~~	~~0.14~~	~~0.85~~	~~1.52~~	~~0.24~~	~~0.01~~	~~0.12~~	~~0.11~~	~~50.8~~	~~0.02~~	~~0.06~~	~~0.016~~

CRM MOLYBDENUM ORE AND CONCENTRATE WITH EXTENSIVE ANALYSIS

analysis listed in mass % 50 g units

Number	Mo	Al_2O_3	Ba	CaO	F	Fe_2O_3	K_2O	MgO	MnO	Na_2O	S	SiO_2	TiO_2	W	WO_2	Zn	Zr
NCS DC93010a*	55.4	0.23	.	0.95	C:0.34	1.44	.	0.47	.	Cu:0.06	.	2.56	.	0.12	.	0.014	.
NCS DC73522	50.08	(1.16)	.	1.95	.	1.23	(0.06)	1.96	.	(0.21)	33.72	7.58	.	0.0732	.	0.0068	.
GBW 07238	1.51	3.46	.	31.44	4.08	21.34	0.046	0.86	1.40	0.075	1.64	34.10	0.13	0.36	.	0.000655	.
NCS DC73521	0.54	5.12	.	18.09	.	9.88	0.66	4.35	.	0.90	0.68	56.87	.	0.0557	.	0.0360	.
NCS DC73520	0.15	5.20	.	18.13	.	9.89	0.66	4.37	.	0.91	0.44	57.47	.	0.0518	.	0.0365	.
KZ 7025-93	0.067	.	0.27	.	.	.	.	.	.	.	.	.	.	.	0.04	.	0.013
NCS DC73519 *	0.066	5.20	.	18.37	.	10.05	0.66	4.29	.	0.90	0.38	57.23	.	0.0489	.	0.0357	.

continued analysis listed in mg/kg except % which is mass %

Number	Ag	As	Be	Bi	Cd	Co	Ce	Cr	Cu	Dy	Eu	Er	Ga	Gd	Ge	Ho	In	La	Li	Lu	Mn
NCS DC93010a*	.	.	.	52	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.033
NCS DC73522	(2.1)	(2.2)	.	86	0.20	10.2	.	30	266	.	.	.	.	.	(0.67)	.	.	.	.	.	0.15
GBW 07238	0.09	1.6	.	2.2	0.12	.	20.8	(24)	93.6	1.8	0.59	1.0	25.1	1.9	19.0	0.36	2.9	7.1	(3.2)	0.16	.
NCS DC73521	0.13	4.7	.	8.2	0.52	13.2	.	23	48	.	.	.	.	.	6.2	.	.	.	.	.	0.91
NCS DC73520	0.10	4.8	.	7.4	0.52	12.9	.	23	46	.	.	.	.	.	6.0	.	.	.	.	.	0.91
KZ 7025-93	0.8	.	19	51	.	.	.	.	0.077%	.	.	.	.	.	.	.	.	.	.	.	.
NCS DC73519 *	(0.11)	5.2	.	6.9	0.50	13.3	.	23	46	.	.	.	.	.	6.2	.	.	.	.	.	0.92

Number	Nb	Nd	Ni	P	Pb	Pr	Re	Sb	Sc	Se	Sm	Sn	Tb	Te	Th	Tl	Tm	Y	Yb
NCS DC93010a*	.	.	.	55	440	.	26	.	.	.	.	.	* also contains Total Oil and Water:(0.34%)						
NCS DC73522	.	.	(20)	(130)	316	.	23	13.2	.	.	.	(11.9)	.	.	.	.	.	.	.
GBW 07238	.	11.3	17.8	.	18.7	3.0	(0.35)	1.2	3.4	2.1	2.1	86.7	0.34	0.40	2.3	0.06	0.14	11.4	1.0
NCS DC73521	.	.	52	(1210)	13.7	.	0.31	0.73	.	.	.	4.7	.	.	.	.	.	.	.
NCS DC73520	.	.	52	(1231)	10.5	.	0.12	0.60	.	.	.	4.5	.	.	.	.	.	.	.
KZ 7025-93	13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
NCS DC73519 *	.	.	54	(1160)	9.1	.	(0.07)	0.58	.	.	.	4.7	* also contains Total Oil and Water: 0.85%						

CRM MOLYBDENUM ORE AND CONCENTRATE

% = mass % * = mg/kg Insol = Insoluble Residue

Number	Mo%	Ag*	As*	Bi*	Cu%	Fe%	Insol%	Na%	P%	Pb%	Re%	S%	Sb*	SiO_2%	W*	Zn%	Units/g
SRM 423	58.61	(29)	.	(60)	0.0640	1.708	7.69	(0.2)	.	0.0433	(0.004)	(0.063)	(24)	.	.	(0.017)	50
CGL 202	51.5	.	(278)	.	(1.34)	(1.44)	.	.	(0.014)	(0.0160)	(0.05)	(35.66)	.	(4.50)	.	.	100
GMO-04	0.7949	1.93	4.52	95	0.0240	.	.	.	.	0.0046	.	.	8.9	.	.	0.0128	10 or 250
GMO-03	0.5329	1.47	3.50	72	0.0191	.	.	.	.	0.0037	.	.	6.8	.	.	0.0122	10 or 250
GMO-12	0.4797	1.04	3.5	50.0	0.01425	.	.	.	.	0.00346	.	0.39	4.41	.	1.2	0.0104	10 or 250
GMO-11	0.2937	0.89	3.3	40.2	0.01155	.	.	.	.	0.00319	.	0.26	3.40	.	0.8	0.0101	10 or 250
GMO-10	0.0953	0.55	2.6	15.3	0.00698	.	.	.	.	0.00262	.	0.13	1.36	.	0.6	0.0096	10 or 250
GMO-07	0.00447	6.10	74.00	0.3	0.0014	.	.	.	.	0.0011	.	.	0.1	.	last	0.0011	10 or 250
GMO-05	0.00277	0.88	12.71	11	0.0639	.	.	.	.	0.0013	.	.	0.5	.	.	0.0087	10 or 250

RM MOLYBDENUM CONCENTRATE

analysis listed in mass % 100 g units

Number	Mo	Al_2O_3	Tot.C	CaO	Cr_2O_3	CuO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	S	SiO_2	SrO	TiO_2	V_2O_5	ZnO
DH 4707	61.08	0.702	0.040	1.61	0.004	0.504	1.80	0.182	0.117	0.008	0.045	0.069	4.38	.	0.040	.	0.064
DH 4706	57.55	1.178	0.016	0.644	.	0.106	3.83	0.407	0.207	0.036	1.009	0.050	7.52	.	0.092	.	.

CRM MULTI-METAL ORE

analysis listed in mass % 50 g units

Number	Fe	Cu	Pb	S	Zn	Al_2O_3	As	C	CaO	K_2O	MgO	Mn	Na_2O	SiO_2	W
NCS DC73511a	28.14	21.67	0.64	30.7	1.35	0.52	0.0253	(0.3)	2.03	0.10	0.74	0.019	(0.06)	3.91	0.00052
NCS DC73507a	27.85	0.72	0.72	7.07	0.94	3.38	0.0243	1.54	13.37	0.34	4.70	0.12	0.80	23.79	0.00050
NCS DC73510a	20.71	0.081	4.85	30.8	13.73	2.09	0.1244	1.90	7.91	0.64	0.71	0.056	0.033	9.61	0.00381
NCS DC73513a	7.33	1.79	0.80	31.6	50.59	0.45	0.0363	0.33	0.89	0.13	0.15	0.022	(0.02)	2.80	0.00068
NCS DC73508a	6.18	1.94	5.97	5.67	3.30	7.03	0.228	(0.1)	1.27	2.83	0.23	0.42	0.63	57.8	0.398
NCS DC73509a	5.75	2.81	0.34	3.32	0.36	8.10	0.0136	(0.06)	0.77	3.32	0.09	0.46	0.73	68.4	0.1288

continued analysis listed in mg/kg

Number	Ag	Bi	Cd	Ce	Ga	Ge	Hg	In	Mo	Re	Sb	Se	Sn	Te	Tl
NCS DC73511a	45.5	8.0	39.4	19.5	8.8	2.8	11.1	5.8	18.3	(0.004)	32.8	(15.5)	2.8	(2)	0.32
NCS DC73507a	14.7	0.89	24.6	112	24.7	4.3	9.6	0.47	2.1	(0.0016)	18.4	(1.8)	2.0	(0.2)	0.11
NCS DC73510a	104	9.4	357	12.7	69.2	31.5	120	0.80	3.3	(0.007)	111	(0.7)	(10)	(0.2)	0.34
NCS DC73513a	126	1.1	1207	5.0	103	65.5	472	1.5	2.7	(0.007)	93.5	(1.4)	(4)	(0.3)	(0.2)
NCS DC73508a	392	1640	317	25.2	11.9	2.8	1.3	13.1	189	(0.015)	787	(17)	944	(5)	6.5
NCS DC73509a	150	570	59.1	24.4	13.6	3.3	0.95	14.3	138	(0.068)	63.3	(7)	991	(0.5)	4.4

CRM MULTI-METAL ORE

analysis in mass % except g/T for grams per ton and * for mg/kg

Number	Ag	Al_2O_3	As	Bi	Cd	Cu	Fe	Hg*	Pb	S	Sb	SiO_2	Sn	Zn	LOI	Units
NCS DC29114	0.03679	(1.42)	0.138	.	0.066	0.071	(11.48T)	(270)	**22.96**	(15.92)	0.044	(20.20)	.	16.22	(12.14)	50 g
NCS DC29112	0.0362	(7.83)	0.082	.	.	0.10	(11.61T)	(0.233)	**2.93**	(8.17)	0.011	(59.40)	.	0.51	(10.49)	50 g
NCS DC29113	0.0103	(3.97)	0.040	.	.	0.075	(8.65T)	(0.074)	**2.19**	(6.02)	0.00383	(31.99)	.	1.54	(13.40)	50 g
NCS DC35008	19.8 g/T	.	0.084	.	.	0.037	22.62	.	**2.07**	.	0.013	.	0.125	0.51	.	60 g
NCS DC29115	0.000530	(3.25)	0.0095	.	0.119	0.021	(3.93T)	(84.8)	**1.25**	(16.30)	0.00205	(41.23)	.	30.19	(9.52)	50 g
NCS DC29111	0.00129	(9.96)	0.0090	.	0.019	0.020	(2.62T)	(12.6)	**0.48**	(3.13)	0.00090	(69.88)	.	4.94	(3.70)	50 g
NCS DC35009	.	6.70	2.17	0.120	.	1.09	.	.	**0.095**	.	.	4.99	0.930	1.49	.	60 g

T = Total Fe as Fe_2O_3

CRM MULTI-METAL ORE WITH EXTENSIVE ANALYSIS

analysis listed in mass % CAN PTC-1b shows classical and instrumental values for Cu and Ni # SiO_2* RTS-5: 100 g others: 200 g

Number	Al	As	Ca	Cu	Fe	Mg	Mo	Ni	Pb	S	Si	Sn	W	Zn	LOI
CAN RTS-5	6.25	0.1286	3.86	0.0647	11.9	3.31	(0.0001338)	0.1104	0.00663	1.924	19.20	.	.	0.0105	(9.90)
CAN MP-2a	5.99	(0.558)	3.22	0.0459	5.00	0.0923	0.1586	(0.00098)	0.277	0.716	31.2	0.0537	0.338	0.566	(4)
CAN SU-1b	4.30	0.000249	2.21	1.185	25.54	1.790	(0.0004)	1.953	0.0058	14.14	15.23	.	.	0.0235	(8)
CAN PTC-1b	(0.7518)	0.0222	(0.571)	7.919,7.97#	36.78	0.441	(0.0011)	11.256,11.29#	0.0795	29.95	2.468	(0.0120)	.	0.2083	(13.44)
CAN MP-1b	.	2.30	2.47	3.069	8.19	0.024	0.0285	.	2.091	13.79	16.79*	1.61	(0.1100)	16.67	.
CAN RTS-5	6.25	0.1286	3.86	0.0647	11.9	3.31	(0.0001338)	0.1104	0.00663	1.924	19.20	.	.	0.0105	(9.90)

continued analysis listed in mg/kg except % for mass %

Number	Ag	Au	Ba	Be	Bi	C%	Cd	Ce	Co	Cr	Cs	Dy	Er	Eu	Ga	Gd	Ge
CAN RTS-5	1.50	0.408	252	(0.7)	(2.05)	(1.617)	.	(17.0)	76.9	261	(1.0)	(2)	(2)	(0.6)	(14)	.	.
CAN MP-2a	4.82	(0.06)	12.3	1.25	989	(0.04)	14.5	357	5.50	150	5.78	32.5	(22.8)	(0.1)	(26.2)	24.8	(8)
CAN SU-1b	6.39	(0.2)	(350)	(0.4)	(2.73)	(0.04)	(3)	(35)	672	(320)	(0.3)	(1.4)	(0.7)	(0.7)	(10)	(2)	.
CAN PTC-1b	53.1	1.99	(61.5)	.	.	.	(38)	.	3253	(40)	.	.	.	.	.	.	.
CAN MP-1b	470	.	.	.	954	(0.028)	527	.	(4)	.	.	.	.	(1)	.	.	.

Number	H_2O%	Hf	Ho	In	Ir	K%	La	Li	Lu	Mn%	Na%	Nb	Nd	P%	Pd	Pr	Pt
CAN RTS-5	(1.4)	.	.	.	.	0.850	(9.7)	(16.9)	(0.3)	0.1092	1.285	(4)	(8)	0.0369	(0.14)	.	(0.2)
CAN MP-2a	.	9.40	(7.04)	(12.09)	.	(1.226)	157	81	4.36	0.1018	(0.03)	97	117.9	(0.0090)	.	38.5	.
CAN SU-1b	.	.	(0.3)	.	.	(0.6)	(17)	.	(0.09)	0.0703	(1.6)	(3)	(15)	(0.06)	0.791	.	0.491
CAN PTC-1b	0.81	.	.	.	(0.2)	(0.15)	.	.	.	(0.0193)	(0.17)	.	.	.	9.46	.	6.47
CAN MP-1b	.	(6)	.	(565)	.	(0.2)	.	.	(4)	(0.0480)	.	.	.	(0.02)	.	.	.

Number	Rb	Rh	Sb	Sc	Se	Sm	Sr	Ta	Tb	Te	Th	Ti	Tl	Tm	U	V	Y	Yb	Zr
CAN RTS-5	(30.5)	.	SO4:(1.23%)	.	(8.03)	.	130.6	.	.	.	(2.25)	3132	.	.	.	(61.2)	(10.1)	.	.
CAN MP-2a	229	.	(7.84)	4.87	.	26.7	12.3	11.6	4.82	(5.75)	61.3	268	(3.16)	4.10	37	.	(229)	28.8	134
CAN SU-1b	(13)	.	(0.2)	(9)	(20.7)	(3)	(280)	.	.	.	.	.	(0.3)	.	(0.2)	(82.5)	(7)	(0.6)	.
CAN PTC-1b	.	(0.5)	(6)	.	(120)	.	(30)	.	.	(30)	.	(696)	.	.	.	(20)	(3)	.	.
CAN MP-1b	.	.	(54.0)	(3)	.	.	.	.	(5)	.	(50)	.	.	.	(20)	.	.	.	(150)

CRM MULTI-METAL ORE

10 or 250 g units

Number	Pb%	Cu%	Ni%	S%	Zn%	Ag*	As*	Co*
OREAS 317	12.13	.	.	.	17.45	232	.	.
GBM921-13	3.0902	2.9990	0.0077	6.89	4.0571	133.7	.	.
GBM920-7	3.0808	2.9848	0.0079	.	4.1046	133.9	586	89
GBM995-8	2.5919	0.0264	0.0060	.	12.4308	52.0	53	.
GBM309-3	2.1335	0.0331	0.0058	.	10.8553	30.7	68	67
GBM323-5	1.0556	1.4364	0.0075	.	3.0969	19	1257	68
GBM922-15	0.4723	3.4460	0.0066	4.91	1.5326	51.2	.	.
GBM914-10	0.4671	0.1864	0.0011	.	0.9697	9.4	11	20
GBM315-9	0.4600	3.4274	0.0071	.	1.5131	50.2	278	135
GBM323-13	0.4036	0.4607	0.0447	0.64	0.3852	7.3	.	.
GBM319-5	0.4022	0.4574	0.0443	.	0.3833	7.4	805	539
GBM311-12	0.3600	1.0188	0.0668	4.4	1.4425	20.6	.	.
GBM311-3	0.3522	1.0089	0.0642	.	1.4291	20.4	359	122
GBM322-14	0.3117	0.5782	0.0038	1.19	0.9864	19.3	.	.
GBM921-7	0.3048	0.5834	0.0042	.	0.9688	19.2	346	42
GBM321-10	0.2592	0.3329	0.0121	.	0.3417	6.7	111	33
GBM915-7	0.2487	0.5934	0.0073	.	0.5037	12.8	329	47
GBM321-8	0.2039	0.3605	0.2236	.	0.1053	3	57	27
GBM322-8	0.1970	0.2951	0.2136	.	0.7016	8.4	735	165
GBM396-1	0.1916	0.2873	0.2140	.	0.6990	8.1	743	.
GBM921-10	0.1902	0.2292	0.0397	.	0.1959	10.2	745	59
GBM319-6	0.1887	0.2186	0.0225	.	0.1842	3.5	375	271
GBM319-6	0.1887	0.2186	0.0225	.	0.1842	3.5	375	271
GBM399-6	0.1446	2.1373	0.0020	.	0.2488	15.5	175	4
GBM322-15	0.1343	0.1698	0.0223	2.21	0.8817	29	.	.
GBM916-2	0.1335	0.1675	0.0223	.	0.8792	29.0	72	10
GBM316-1	0.1248	0.2966	0.0052	.	0.2572	6.3	163	40
GBM319-3	0.1116	0.4055	0.0025	.	0.4067	7.4	887	211
GBM999-8	0.1061	0.1852	0.3014	.	0.0537	1.8	185	25
GBM913-8	0.0923	0.4379	0.0006	.	0.0127	6.7	1409	12
GBM322-10	0.0904	0.0707	0.0261	.	0.0809	3	759	53
GBM396-6	0.0774	1.3903	0.0083	.	0.0260	5.4	541	.
GBM301-4	0.0762	0.1656	0.1430	.	0.0448	1.9	308	123
GBM313-1	0.0738	0.3079	0.0015	.	0.1170	4.9	26	10
GBM913-7	0.0633	0.7990	0.0010	.	0.0431	7.0	2052	17
GBM316-2	0.0626	0.1523	0.0041	.	0.1331	3.2	82	35
GBM910-7	0.0592	0.5335	0.0117	.	0.1249	7.1	80	86
GBM323-12	0.0580	0.7868	0.0010	6.44	0.0421	6.9	.	.
GBM314-2	0.0532	0.0419	0.0029	.	0.0975	3.3	4912	7
GBM320-14	0.0529	17.2671	0.0486	29.11	2.2911	10.6	.	.
GBM320-1	0.0527	0.0872	0.0023	.	0.0486	1.9	657	7
GBM919-9	0.0520	0.1526	0.0069	.	0.5198	6.0	98	44
GBM319-4	0.0505	0.1756	0.0017	.	0.1791	3.3	390	95
GBM904-3	0.0489	0.0515	0.0323	.	0.0464	1.8	270	82
GBM913-1	0.0477	0.3964	0.0005	.	0.0787	10.0	705	9
GBM320-10	0.0476	0.1531	0.0563	.	0.1139	6.2	142	45
GBM900-2	0.0464	0.0859	0.0886	.	0.0334	1.3	786	61
GBM908-6	0.0461	0.0441	0.4736	.	0.1354	1.2	14	832
GBM918-4	0.0439	0.3948	0.0128	.	0.0387	1.1	204	19
GBM922-9	0.0436	0.7535	0.0027	.	0.0037	4.9	257	49
GBM305-4	0.0416	0.1138	0.0475	.	0.1199	2.6	263	70
GBM913-9	0.0404	0.4542	0.0006	.	0.0158	3.8	611	13
GBM301-9	0.0389	0.2881	0.0102	.	0.7208	11.2	317	48
GBM907-8	0.0388	0.0339	0.4295	.	0.1234	1.0	11	219
GBM318-2	0.0373	0.2149	0.0026	.	0.2103	3.5	573	535
GBM317-2	0.0338	0.7414	0.0011	.	0.2356	7.4	166	388
GBM996-4	0.0336	0.0492	0.0036	.	0.0968	3.6	442	.
GBM300-5	0.0322	1.0779	0.0076	.	0.0035	3.6	571	332
GBM323-14	0.0317	6.1400	4.7118	7.33	0.0098	66.5	.	.
GBM917-4	0.0305	6.1310	4.7052	.	0.0090	65.7	2.04%	1.16%
GBM311-6	0.0302	0.1037	0.0336	.	0.0571	4.2	1540	40
GBM913-10	0.0300	0.3019	0.0007	.	0.0380	3.0	823	10
GBM913-4	0.0291	0.1556	0.0104	.	0.0282	2.0	255	193
GBM906-6	0.0288	0.0171	0.0013	.	0.0210	392.8	10	8
GBM916-10	0.0282	0.2393	0.0011	.	0.1235	4.5	135	319
GBM323-10	0.0272	0.1360	0.2587	.	0.0317	1.1	57	158
GBM312-6	0.0270	0.3705	0.0229	.	0.0795	7.4	32	34
GBM915-10	0.0261	0.0907	0.0317	.	0.0938	14.4	497	149
GBM322-9	0.0258	0.1457	0.1765	.	0.0696	3.2	936	50
GBM919-7	0.0246	0.1250	0.1954	.	0.0226	3.6	288	85
GBM322-7	0.0245	0.0089	0.0060	.	0.0924	1.6	176	24
GBM913-5	0.0243	0.2880	0.0024	.	0.3722	0.3	2492	55
GBM302-5	0.0239	0.1059	0.0498	.	0.0359	1.8	1873	50
GBM313-3	0.0239	0.0875	0.0256	.	0.1012	4.0	1039	37
GBM316-10	0.0223	0.4554	0.0006	.	0.0178	1.3	179	8
GBM318-1	0.0215	0.1187	0.0031	.	0.1061	3.2	329	243
GBM917-1	0.0209	0.0079	0.0017	.	0.1646	1.0	384	15
GBM913-6	0.0207	0.3321	0.0004	.	0.0029	0.5	1104	6
GBM907-11	0.0191	0.3873	4.5163	7.56	0.1033	4.7	.	.
GBM397-8	0.0189	0.1419	0.1320	.	0.0363	1.5	553	.
GBM922-12	0.0184	1.3975	2.0429	6.90	0.3402	4.4	.	.
GBM914-2	0.0175	0.1824	0.0099	.	0.0626	5.9	9	26
GBM917-15	0.0168	2.5774	2.1808	3.19	0.0065	29.3	.	.
GBM910-5	0.0161	0.7952	0.0036	.	0.0491	2.7	52	90
GBM321-6	0.0157	0.0051	0.0052	.	0.2169	2.9	340	20
GBM916-5	0.0149	0.7006	0.0005	.	0.0268	2.3	22	10
GBM921-9	0.0149	0.1248	0.0214	.	0.0632	5.9	394	36
GBM917-5	0.0148	2.5667	2.1664	.	0.0042	29.3	9335	0.51%
GBM310-5	0.0140	0.0335	0.3691	.	0.0483	0.5	12	247
GBM312-7	0.0137	0.6182	0.0346	.	0.1157	6.8	14	34
GBM323-3	0.0137	0.0055	0.0060	.	0.0570	3.5	113	31
GBM915-1	0.0135	0.0485	0.0176	.	0.0513	7.2	246	89
GBM305-3	0.0135	0.0451	0.0272	.	0.0372	1.7	656	46
GBM311-7	0.0134	0.0947	0.0126	.	0.0452	2.0	830	28
GBM321-3	0.0132	0.0050	0.0044	.	0.0775	5.9	635	19
GBM914-1	0.0118	0.1152	0.0069	.	0.0427	4.8	6	24
GBM922-5	0.0118	0.0580	0.2552	.	0.0110	0.6	228	49
GBM305-9	0.0114	0.0565	0.2551	.	0.0104	0.8	219	47
GBM323-6	0.0112	0.5353	0.0036	.	0.0388	1.8	39	72
GBM313-4	0.0110	0.0342	0.0250	.	0.0337	2.7	385	33
GBM908-1	0.0110	0.0074	0.0053	.	0.0102	1.7	10	34
GBM323-8	0.0107	0.1491	0.0063	.	0.0696	0.9	6	26
GBM323-7	0.0104	0.2993	0.0299	.	0.0371	2.4	1137	36
GBM319-2	0.0101	0.0155	0.0109	.	0.0101	0.3	65	88
GBM919-5	0.0100	0.1670	0.2419	.	0.0172	0.6	10	83
GBM914-5	0.0094	1.2970	0.0210	.	0.0592	4.1	43	40
GBM309-1	0.0092	0.1554	0.0023	.	0.5239	6.0	95	22
GBM305-2	0.0091	0.0054	0.0045	.	0.0080	1.2	2	27
GBM323-4	0.0089	0.1540	0.0027	.	0.5232	6	94	27
GBM915-5	0.0087	0.0307	0.0106	.	0.0333	3.9	128	61
GBM314-12	0.0077	2.9880	0.0127	7.79	0.5516	3.1	.	.
GBM903-10	0.0074	0.0198	0.0559	.	0.0140	1.2	2779	57
GBM319-10	0.0075	0.0122	0.0006	.	0.0831	1.1	2196	3
GBM918-1	0.0075	0.0094	0.0066	.	0.0166	0.3	18	54
Number	Pb%	Cu%	Ni%	S%	Zn%	Ag*	As*	Co*

CRM MULTI-METAL ORE

10 or 250 g units

Number	Pb%	Cu%	Ni%	S%	Zn%	Ag*	As*	Co*
GBM305-6	0.0069	0.0242	0.0062	.	0.0120	1.5	315	31
GBM315-5	0.0067	0.0045	0.0005	.	0.0154	14.8	72	9
GBM918-2	0.0065	0.0081	0.0072	.	0.0101	0.2	22	29
GBM921-3	0.0063	0.0038	0.0045	.	0.0476	1.6	100	19
GBM321-5	0.0059	0.0157	0.0027	.	0.1495	1	89	18
GBM321-15	0.0058	1.5473	2.3789	24.07	0.0105	3.5	.	.
GBM320-2	0.0056	0.0117	0.0005	.	0.0012	27.1	42	4
GBM919-6	0.0055	0.2756	0.5208	.	0.0218	1.9	591	358
GBM921-6	0.0054	0.0131	0.0025	.	0.0648	1.3	95	17
GBM321-14	0.0053	0.2756	0.5120	1.78	0.0206	1.8	.	.
GBM922-6	0.0052	0.0308	0.0024	.	0.0679	2.9	33	13
GBM320-12	0.0050	2.5716	0.0137	9.29	0.0131	8.3	.	.
GBM915-6	0.0050	0.0186	0.0068	.	0.0225	2.1	63	47
GBM914-7	0.0050	0.0034	0.0005	.	0.0084	8.8	49	9
GBM903-7	0.0049	0.0313	0.0021	.	0.0669	3.0	33	12
GBM321-13	0.0047	0.5959	0.4318	0.74	0.0032	6.4	.	.
GBM997-9	0.0047	0.0485	0.0016	.	0.0016	0.9	5	.
GBM914-3	0.0046	0.1441	0.0010	.	0.0193	1.2	34	34
GBM320-11	0.0045	1.6875	0.0253	20.4	0.0113	5.9	.	.
GBM914-15	0.0044	0.0060	1.5093	0.06	0.0354	0.6	.	.
GBM316-3	0.0043	0.0019	0.0011	.	0.0048	0.2	5	8
GBM915-8	0.0042	0.5897	0.4259	.	0.0025	6.6	1873	1083
GBM914-4	0.0042	0.0864	0.0006	.	0.0202	0.8	13	15
GBM998-10	0.0041	1.5414	2.3610	.	0.0090	3.5	25	1202
GBM399-7	0.0040	0.0041	0.0033	.	0.0051	0.6	14	24
GBM922-7	0.0039	0.0123	0.1199	.	0.0271	0.3	755	163
GBM919-10	0.0039	0.0114	0.0609	.	0.0066	0.6	583	23
GBM321-7	0.0037	0.1518	0.0012	.	0.0300	2.7	101	21
GBM910-10	0.0037	0.0033	0.0013	.	0.0051	0.5	2	9
GBM904-10	0.0035	0.0162	0.2709	.	0.0039	0.5	35	59
GBM906-9	0.0035	0.0094	0.0071	.	0.0079	4.0	50	20
GBM922-8	0.0035	0.0040	0.0033	.	0.0058	0.3	14	27
GBM917-2	0.0035	0.0031	0.0009	.	0.0121	10.3	57	5
GBM903-3	0.0034	0.0167	0.2758	.	0.0042	0.7	33	60
GBM307-5	0.0034	0.0031	0.0029	.	0.0018	1.0	23	4
GBM308-3	0.0033	0.0928	0.0036	.	0.0109	14.5	41	63
GBM323-9	0.0032	0.0490	0.0023	.	0.0102	4.2	4	22
GBM912-16	0.0031	0.3442	3.7560	11.51	0.0107	1.9	.	.
GBM904-5	0.0031	0.1111	0.0039	.	0.0026	0.8	108	155
GBM915-3	0.0031	0.0132	0.0051	.	0.0171	1.1	33	40
GBM916-1	0.0031	0.0017	0.0012	.	0.0045	0.4	6	9
GBM310-8	0.0029	0.0396	0.0028	.	0.0027	0.5	85	50
GBM313-10	0.0029	0.0268	0.0025	.	0.0086	3.2	3	22
GBM321-4	0.0029	0.0254	0.0039	.	0.0753	1.4	100	21
GBM322-3	0.0029	0.0214	0.0177	.	0.0142	1.5	139	49
GBM911-5	0.0029	0.0042	0.0020	.	0.0060	0.8	6	15
GBM314-7	0.0029	0.0026	0.0014	.	0.0047	0.4	4	9
GBM399-2	0.0028	0.0205	0.0014	.	0.0309	0.7	4	3
GBM311-9	0.0028	0.0124	0.0306	.	0.0072	0.7	3	34
GBM917-3	0.0028	0.0054	0.0005	.	0.0175	4.8	42	18
GBM912-3	0.0028	0.0026	0.0013	.	0.0041	0.4	2	8
GBM315-3	0.0027	0.1205	0.0021	.	0.0077	2.6	4	19
GBM912-6	0.0027	0.0273	0.0021	.	0.0076	3.2	3	18
GBM914-11	0.0027	0.0093	0.7245	0.07	0.0135	0.6	.	.
GBM315-2	0.0026	0.0055	1.6741	.	0.0232	0.3	4	2221
GBM314-5	0.0024	0.0039	0.0024	.	0.0078	3.1	5	22
GBM322-5	0.0022	0.0152	0.0019	.	0.0096	1.6	3456	15
GBM320-16	0.0022	0.0049	3.8993	0.05	0.0076	4.6	.	.
GBM919-4	0.0022	0.0039	0.0025	.	0.0076	12.4	2	22
GBM918-7	0.0022	0.0018	0.0030	.	0.0019	0.4	4	2
GBM319-9	0.0021	0.0109	0.0045	.	0.0714	0.7	273	18
GBM906-4	0.0021	0.0372	0.0089	.	0.0145	0.8	62	29
GBM314-3	0.0021	0.0287	0.0008	.	0.0249	6.9	400	7
GBM914-6	0.0020	0.4720	0.0041	.	0.0093	6.5	4	25
GBM321-1	0.0020	0.1034	0.0044	.	0.0085	0.8	27	15
GBM922-10	0.0020	0.0065	0.0683	.	0.0031	0.3	477	59
GBM920-15	0.0020	0.0051	0.9839	0.08	0.0329	0.9	.	.
GBM913-3	0.0020	0.0034	0.0013	.	0.0051	0.6	5	12
GBM910-1	0.0020	0.0032	0.0016	.	0.0061	7.9	5	15
GBM321-2	0.0019	0.1176	0.0050	.	0.0217	2.1	70	34
GBM312-10	0.0019	0.0040	0.0022	.	0.0067	10.1	2	19
GBM313-5	0.0019	0.0036	0.0022	.	0.0067	1.6	5	19
GBM918-5	0.0018	0.1523	0.4960	.	0.1021	6.9	36	282
GBM908-2	0.0018	0.0056	0.0026	.	0.0070	7.2	3	21
GBM315-6	0.0018	0.0045	0.0027	.	0.0091	1.3	2	25
GBM313-6	0.0018	0.0037	0.0022	.	0.0066	3.0	6	19
GBM312-1	0.0017	0.0011	0.0008	.	0.0008	0.8	17	2
GBM907-5	0.0017	0.0078	0.0026	.	0.0092	12.8	5	23
GBM913-2	0.0017	0.0011	0.0004	.	0.0009	0.9	22	2
GBM316-4	0.0017	0.0010	0.0008	.	0.0007	0.5	23	2
GBM322-4	0.0016	0.1025	0.0032	.	0.0107	2.3	171	26
GBM922-3	0.0016	0.0602	0.0032	.	0.0122	1.5	89	23
GBM918-9	0.0016	0.0021	0.0922	.	0.0040	0.5	20	100
GBM322-11	0.0015	1.4752	0.0029	0.70	1.3941	1	.	.
GBM315-4	0.0015	0.1179	0.0068	.	0.0089	0.8	10	17
GBM316-8	0.0015	0.3175	0.0832	.	0.0330	18.7	426	57
GBM997-5	0.0015	0.0328	0.6258	.	0.0085	1.3	125	.
GBM921-4	0.0015	0.0030	0.0021	.	0.0108	0.4	34	11
GBM314-13	0.0014	0.5356	9.5073	0.65	0.0095	4.4	.	.
GBM916-6	0.0014	0.3599	0.1005	.	0.0330	21.1	497	62
GBM318-9	0.0014	0.1076	0.0069	.	0.0087	0.9	22	15
GBM323-2	0.0014	0.0473	0.0027	.	0.0126	1	58	23
GBM320-3	0.0013	0.2718	0.0829	.	0.0254	11.5	309	55
GBM916-4	0.0013	0.1842	0.0913	.	0.0248	10.9	287	53
GBM918-8	0.0013	0.1662	0.0853	.	0.0241	9.2	277	55
GBM921-2	0.0013	0.0888	0.0055	.	0.0074	0.7	24	16
GBM318-10	0.0013	0.0872	0.0058	.	0.0077	0.7	33	15
GBM999-6	0.0013	0.0639	0.0219	.	0.0087	0.9	13	23
GBM302-4	0.0013	0.0160	0.0118	.	0.0085	0.8	738	21
GBM314-8	0.0013	0.0065	0.0033	.	0.0106	3.1	4	32
GBM310-9	0.0013	0.0063	0.0028	.	0.0083	3.1	8	26
GBM315-8	0.0013	0.0062	0.0034	.	0.0106	4.8	3	32
GBM320-8	0.0012	0.6686	0.0020	.	0.0121	2.7	3	31
GBM919-1	0.0012	0.3723	0.0019	.	0.0132	2.3	2	29
GBM313-11	0.0012	0.1168	0.0054	0.23	0.0075	1.7	.	.
GBM921-1	0.0012	0.0913	0.0055	.	0.0083	0.8	17	16
GBM317-1	0.0012	0.0626	0.0062	.	0.0077	0.6	100	21
GBM922-4	0.0012	0.0067	0.0018	.	0.0052	0.5	738	7
GBM908-3	0.0012	0.0054	0.0025	.	0.0098	4.8	6	26
GBM322-2	0.0011	1.4869	0.0028	.	1.3776	0.5	45	2061
Number	Pb%	Cu%	Ni%	S%	Zn%	Ag*	As*	Co*

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10 or 250 g units

Number	Pb%	Cu%	Ni%	S%	Zn%	Ag*	As*	Co*
GBM316-6	0.0011	0.701	0.0003	.	0.0045	0.5	3	8
GBM919-3	0.0011	0.6054	0.0019	.	0.0117	3.6	2	31
GBM916-8	0.0011	0.2692	0.0772	.	0.0095	0.4	30	52
GBM318-6	0.0011	0.2446	0.0819	.	0.0204	6.9	200	53
GBM301-3	0.0011	0.0776	0.7910	.	0.0094	0.9	304	187
GBM920-5	0.0011	0.0773	0.0047	.	0.0065	0.5	22	14
GBM922-1	0.0011	0.0184	0.0059	.	0.0207	0.8	76	26
GBM320-7	0.0010	0.4445	0.0021	.	0.0097	2.7	3	73
GBM318-5	0.0010	0.2993	0.0827	.	0.0127	4.7	179	56
GBM320-6	0.0010	0.2702	0.0021	.	0.0043	1.4	3	37
GBM919-2	0.0010	0.1592	0.0015	.	0.0039	0.8	3	41
GBM916-3	0.0010	0.1293	0.0048	.	0.0079	1.0	12	14
GBM918-10	0.0010	0.0992	0.0038	.	0.0077	0.8	14	13
GBM914-9	0.0010	0.0952	0.0058	.	0.0070	0.8	10	15
GBM920-6	0.0010	0.0760	0.0056	.	0.0075	0.7	30	16
GBM317-3	0.0010	0.0736	0.0066	.	0.0071	0.7	17	17
GBM316-9	0.0010	0.0710	0.0003	.	0.0040	0.5	3	7
GBM300-9	0.0010	0.0317	0.3765	.	0.0084	0.8	11	182
GBM300-4	0.0010	0.0266	0.8118	.	0.0098	0.7	18	258
GBM921-5	0.0010	0.0558	0.0032	.	0.0098	2.6	156	24
GBM920-4	0.0009	0.2746	0.0719	.	0.0085	0.4	35	47
GBM320-5	0.0009	0.1259	0.0021	.	0.0037	0.6	2	57
GBM921-16	0.0009	0.0756	0.7465	2.20	0.0100	0.6	.	.
GBM323-1	0.0009	0.0702	0.0033	.	0.0099	1.2	178	22
GBM322-1	0.0008	0.0868	0.0048	.	0.0066	0.6	4	14
GBM922-2	0.0008	0.0256	0.0034	.	0.0091	0.8	67	24
GBM322-6	0.0007	0.0794	0.0030	.	0.0075	1.3	241	26
GBM920-9	0.0006	0.0020	0.0014	.	0.0039	50.9	2	10
GBM900-8	0.0010	0.0046	3.8468	.	0.0053	4.7	8	50
GBM320-4	0.0009	0.3238	0.0743	.	0.0090	0.5	32	49
GBM320-5	0.0009	0.1259	0.0021	.	0.0037	0.6	2	57
GBM901-4	0.0009	0.0946	0.0018	.	0.0069	0.7	6	21
GBM910-15	0.0009	0.0381	0.5621	0.1	0.0062	1.1	.	.
GBM397-9	0.0009	0.0059	0.0042	.	0.0073	0.9	11	.
GBM998-9	0.0009	0.0023	0.0013	.	0.0027	101.9	7	8
GBM307-2	0.0009	0.0089	0.0034	.	0.0094	0.5	8	31
GBM314-6	0.0008	0.4290	0.0072	.	0.0117	0.6	14	205
GBM916-7	0.0008	0.3170	0.0769	.	0.0090	0.3	31	49
GBM316-7	0.0008	0.2742	0.0849	.	0.0077	0.5	44	52
GBM907-9	0.0008	0.0365	0.5442	.	0.0053	0.8	12	305
GBM906-7	0.0008	0.0362	0.5562	.	0.0051	0.9	25	210
GBM305-5	0.0008	0.0194	0.1785	.	0.0056	0.5	67	51
GBM998-5	0.0008	0.0056	0.0025	.	0.0084	0.6	10	28
GBM910-8	0.0008	0.0055	0.0024	.	0.0087	0.7	5	28
GBM915-2	0.0007	0.0065	0.0036	.	0.0119	9.9	8	37
GBM307-4	0.0007	0.0059	0.0025	.	0.0077	3.9	6	25
GBM314-10	0.0006	0.0061	0.0036	.	0.0121	0.7	4	39
GBM313-8	0.0006	0.0058	0.0035	.	0.0114	0.4	2	36
GBM910-9	0.0006	0.0055	0.0023	.	0.0081	0.5	2	27
GBM911-8	0.0006	0.0055	0.0023	.	0.0088	0.7	4	27
GBM918-6	0.0005	0.0478	0.1437	.	0.0370	1.4	12	71
GBM912-4	0.0005	0.0054	0.0025	.	0.0084	0.4	3	26
GBM318-3	0.0005	0.0054	0.9874	.	0.0327	0.5	3	807
GBM318-7	0.0002	0.0003	0.0002	.	0.0002	0.1	2	1
GBM316-5	0.0004	0.0057	0.0036	.	0.0114	0.4	1	37
Number	Pb%	Cu%	Ni%	S%	Zn%	Ag*	As*	Co*

NICKEL ORE

listed in mass % except * which is mg/kg GBM: CRM, 10 or 250g IGS, NCS: CRM, 50g JSM: RM, 50g

Number	Ni	Cd	Co	Cr	Cu	Fe	Mn	Pb	S	Zn	Ag*	Al_2O_3	CaO	MgO	P	SiO_2	Ti
GBM909-15	11.5901	.	.	.	1.3120	.	.	0.2120	26.7	2.6608	13.5	.	.	.	.	.	.
NCS DC28072	5.71	0.047	0.042	0.015	0.270	23.73	0.037	0.040	2.51	4.65	.	3.91	6.47	1.14	1.61	21.10	0.15
NCS DC28079	3.98	0.028	0.041	0.364	0.169	20.74	0.147	0.030	1.41	2.85	.	3.55	4.54	8.67	1.08	27.48	0.098
GBM911-14	3.2361	.	.	.	0.2856	.	.	0.0091	10.5	0.0180	1.7	.	.	.	.	.	.
GBM312-16	2.7983	.	.	.	0.3082	.	.	0.0059	9.8	0.0142	1.8	.	.	.	.	.	.
GBM910-13	2.6969	.	.	.	0.2306	.	.	0.0034	8.2	0.0152	1.9	.	.	.	.	.	.
GBM911-15	2.2856	.	.	.	0.5003	.	.	0.0253	8.1	0.0288	2.9	.	.	.	.	.	.
JSM 0800-1	2.27	.	0.053	0.70	.	14.2	.	.	.	.	.	0.98	0.030	26.2	.	35.7	.
NCS DC28078	2.18	(<0.0015)	0.055	0.76	0.0058	14.89	0.254	0.0020	0.034	0.079	.	1.59	0.46	21.28	0.029	39.20	0.027
JSM 0800-2	2.07	.	0.036	0.57	.	11.5	.	.	.	.	.	1.27	0.37	23.3	.	45.4	.
GBM915-12	2.0155	.	.	.	0.9137	.	.	0.0051	6.35	0.0573	2.5	.	.	.	.	.	.
GBM307-13	1.9995	.	.	.	0.1251	.	.	0.0045	6.78	0.0117	.	.	.	.	.	.	.
NCS DC28077	1.97	(<0.0015)	0.060	0.823	0.0016	14.84	0.263	0.0015	0.016	0.021	.	1.03	0.14	25.49	0.0043	36.00	0.017
IGS 21	1.97	.	0.069	.	0.798	23.40	.	.	.	.	.	.	.	.	.	.	.
GBM322-16	1.9123	.	.	.	0.4657	.	.	0.0053	6.87	0.1268	52.9	.	.	.	.	.	.
JSM 0800-3	1.90	.	0.072	0.84	.	15.0	.	.	.	.	.	0.84	0.034	26.1	.	34.9	.
NCS DC28076	1.86	(<0.0015)	0.065	0.92	0.0017	15.20	0.282	0.0016	0.016	0.021	.	1.04	0.10	25.70	(<0.007)	34.70	0.015
NCS DC28075	1.70	(<0.0015)	0.043	0.80	0.0025	14.92	0.294	0.0013	0.014	0.019	.	2.00	0.385	21.05	0.0043	38.77	0.039
GBM921-15	1.6906	.	.	.	0.0057	.	.	0.0033	0.45	0.0249	0.6	.	.	.	.	.	.
GBM919-14	1.6566	.	.	.	0.0288	.	.	0.0361	2.90	0.1391	1.1	.	.	.	.	.	.
GBM309-6	1.6113	.	0.0909	.	0.0277	.	.	0.0341	.	0.1344	1.2	.	As:0.0018	.	.	.	.
GBM915-14	1.3070	.	.	.	1.7404	.	.	0.0095	2.08	0.0067	18.5	.	.	.	.	.	.
NCS DC28080	1.30	(<0.0025)	0.033	1.38	0.0071	34.55	0.192	0.0019	0.180	0.022	.	6.53	0.070	10.54	0.020	15.48	0.092
GBM318-8	1.2863	.	0.3258	.	1.7336	.	.	0.0097	.	0.0035	18.5	.	As:0.5606	.	.	.	.
GBM323-15	1.2702	.	.	.	0.0055	.	.	0.0012	0.10	0.0237	1.1	.	.	.	.	.	.
GBM316-15	1.2308	.	.	.	0.0056	.	.	0.0022	0.10	0.0257	1.0	.	.	.	.	.	.
NCS DC28073	1.17	(<0.0015)	0.042	0.95	0.0049	18.57	0.327	0.0024	0.024	0.019	.	2.90	0.82	20.75	(<0.007)	37.41	0.024
GBM922-11	1.1664	.	.	.	0.0016	.	.	0.0014	0.03	0.0145	0.6	.	.	.	.	.	.
GBM918-12	1.1398	.	.	.	0.2138	.	.	0.0023	11.44	0.0838	9.6	.	.	.	.	.	.
GBM918-3	1.1270	.	0.0498	.	0.2153	.	.	0.0021	.	0.0816	9.4	.	As:0.0020	.	.	.	.
GBM919-15	1.1621	.	.	.	0.0158	.	.	0.0111	0.81	0.0670	1.6	.	.	.	.	.	.
NCS DC28074	0.892	(<0.0020)	0.014	1.84	0.012	46.99	0.149	0.0023	0.288	0.023	.	10.29	0.033	0.51	0.030	2.52	0.145
GBM305-16	0.6503	.	.	.	0.0381	.	.	0.0026	.	0.0092	.	.	.	.	.	.	.
Number	Ni	Cd	Co	Cr	Cu	Fe	Mn	Pb	S	Zn	Ag*	Al_2O_3	CaO	MgO	P	SiO_2	Ti

CRM NICKEL ORE

analysis in mg/kg except % which is mass %

Number	Ag	Au	Cu%	Ir	Ni%	Os	Pd	Pt	Rh	Ru	Units
VS 1702-86	23.4	0.84	(3)	0.11	5.4	0.06	30.0	8.6	0.98	0.34	100 g

CRM NICKEL SULHPIDE ORE

analysis listed as mass % except ** for ppb, * indicates certified as element instead of oxide, much more detail on certificates, 10 or 60g units

Number	Ni	Co	Fe	S	Al_2O_3	As	Ca	Cr	Cu	K	MgO	Mn	Na	P	SiO_2	Ti	Au**	Pd**	Pt**
OREAS 78	25.79	23.74	.	28.61	.	.	.	.	.	.	.	.	.	.	.	.	LOI: (2.36)		
OREAS 77b	11.24	0.1604	29.21	22.29	1.86*	.	3.11	0.0341	0.3163	0.344	2.67*	0.068	0.406	.	9.24*	0.065	.	.	.
OREAS 77a	10.71	0.1675	34.0	26.83	1.48	0.0162	.	0.0840	0.4400	.	7.27	.	.	.	13.3	.	61	566	1088
OREAS 76b	7.78	0.1103	21.76	15.18	2.58*	.	3.115	0.0663	.	0.474	5.80*	0.079	0.510	0.0139	13.74*	0.103	.	.	.
OREAS 76a	7.40	0.1215	24.6	18.0	1.78	0.0117	.	0.1283	0.2974	.	16.5	.	.	.	21.7	.	41	403	701
OREAS 75b	5.38	0.0788	17.17	10.79	2.79*	.	3.03	0.0942	0.1483	0.410	8.75*	0.097	.	0.0187	15.67*	0.139	.	.	.
OREAS 75a	5.25	0.0894	19.1	12.5	1.99	0.0080	.	0.1552	0.2005	.	22.3	.	.	.	27.3	.	34	280	353
OREAS 74b	3.39	0.0502	12.40	6.57	3.55*	.	3.09	0.0981	0.0947	0.691	9.23*	.	0.692	0.0195	19.36*	0.1555	.	.	.
OREAS 74a	3.24	0.0581	13.7	7.48	2.21	0.00496	.	0.1780	0.1240	.	27.9	.	.	.	32.4	.	21	172	223
OREAS 14p	2.09	.	.	.	.	.	.	.	0.997	.	.	.	.	.	.	.	51	150	99
OREAS 73b	1.50	0.0246	8.63	2.90	3.77*	.	3.15	0.1172	0.0430	0.586	11.80*	0.115	0.736	0.024	20.89*	0.191	.	.	.
OREAS 72b	0.709	0.0126	6.80	1.44	4.75*	.	2.83	0.0971	0.0193	1.09	9.61*	0.1004	0.958	0.0267	23.92*	0.213	.	.	.
OREAS 70b	0.223	.	5.51	0.286	3.81*	.	3.07	0.1243	.	0.585	13.54*	0.115	.	0.024	22.42*	0.178	.	.	.

RM NIOBIUM ORE

analysis listed in mass % 100g units

Number	Nb_2O_5	Al_2O_3	BaO	CO_2	CaO	CeO_2	F	Fe	K_2O	La_2O_3	MgO	MnO	Na_2O	Nd_2O_3	P_2O_5
FQZ 1807	61.95	0.382	0.192	0.056	13.18	0.567	4.12	2.29	0.320	0.150	0.150	0.310	5.42	0.209	0.112
DH X1803	60.62	0.291	0.201	0.097	13.02	0.556	3.65	3.50	0.233	0.153	0.136	0.325	5.28	0.207	0.102
FQZ 1808	56.71	0.614	0.277	0.139	11.67	0.588	4.02	5.41	0.463	0.185	0.177	0.383	4.73	0.214	0.134
DH X1806	0.095	0.945	0.046	36.82	27.77	0.086	.	5.44	0.525	0.040	16.16	1.12	0.061	0.038	1.75

continued

Number	S	SiO_2	SrO	Ta_2O_5	ThO_2	TiO_2	U_3O_8	V_2O_5	Y_2O_3	ZnO	ZrO_2	$-H_2O$ 900'C
FQZ 1807	0.052	2.28	1.18	0.276	0.734	3.86	0.190	0.056	0.098	0.005	0.868	0.611
DH X1803	0.051	1.91	1.20	0.273	0.770	4.26	0.202	0.073	0.085	0.001	0.847	.
FQZ 1808	0.056	3.52	1.31	0.265	0.802	3.92	0.153	0.075	0.074	0.003	0.837	0.668
DH X1806	0.798	3.38	0.274	(0.001)	0.010	0.089	(0.002)	(0.009)	(0.009)	0.013	0.027	.

CRM NIOBIUM ORE

certified analysis — analysis listed in mass % — informational values — 200 g units

Number	Nb	Al	Ca	Fe	K	Mg	Mn	Na	P	Pb	S	Si	Sr	Zn	LOI
CAN OKA-1	0.37	0.9	31.3	2.8	0.3	1.3	1.1	0.2	1.1	1.1	0.6	2.4	1.0	0.05	31.9

CRM NOBLE METAL ORE

analysis listed in mg/kg except % which is mass %

Number	Ag	Au	Cu%	Fe%	Ir	Ni	Pd	Pt	Rh	Ru	S	Al_2O_3	CaO	Co	Cr_2O_3	MgO	SiO_2	Units	
~~CAN PTM-1a~~	~~(135)~~	~~3.30~~	~~.~~	~~.~~	~~(0.35)~~	~~.~~	~~10.01~~	~~7.31~~	~~(0.92)~~	~~(0.7)~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~400 g~~	
SARM 186	.	2.58	1.25	10.9	3.01	2.29	28.1	67.1	7.63	11.4	(4.59)	.	.	0.18	.	.	Si:21.0	1 kg	
SARM 171	.	1.67	0.88	(10.96)	(0.14)	1.57	11.23	9.26	0.65	(1.03)	4.04	.	.	(0.045)	.	.	Si(21.82)	1 kg	
SARM 142	.	0.23	(0.08)	.	(0.06)	(0.16)	1.35	2.83	0.18	0.33	.	.	.	.	(0.70)	.	.	3 kg	
SARM 143	.	0.21	(0.08)	.	(0.06)	(0.15)	1.25	2.57	0.17	0.31	.	.	.	.	(0.57)	.	.	3 kg	
SARM 189	.	0.04	.	.	(0.19)	.	0.90	1.77	0.30	(0.50)	(0.02)	13.4	(4.15)	.	17.0	13.7	31.4	1 kg	
SARM 72	.	0.13	(0.039)	17.8	(0.28)	0.17	4.24	3.97	0.83	1.18	0.11	(15.3)	(1.79)	(0.024)	31	11.6	14.1	2.5 kg	last
SARM 75	.	(0.053)	.	.	.	0.23	0.61	0.32	.	.	(0.39)	.	.	.	.	.	.	3 kg	last
CAN WPR-1a	1.02	(0.05)	0.299	11.34	(0.02)	0.439	0.614	0.452	.	.	1.768	.	.	more data under Peridotite				400 g	
SARM 107	.	0.046	.	.	(0.14)	.	0.926	1.99	0.320	0.626	.	.	.	.	.	.	.	3 kg	
SARM 81	.	(0.034)	.	.	(0.18)	.	1.46	2.50	0.490	(0.76)	.	.	.	.	.	.	.	3 kg	last
CAN PTA-1	.	.	.	.	.	.	.	3.05	.	.	.	.	.	.	.	.	.	400 g	

CRM NOBLE METAL ORE - CERTIFIED BY ANALYTICAL METHOD

analysis listed in mg/kg Ni = Nickel Sulfide, Pb = Lead Extraction analysis listed in mass % AR = Aqua Regia, M = M/ICP, X = XRF

Number	Pd(Ni)	Pd(Pb)	Pt(Ni)	Pt(Pb)	Rh(Ni)	Ru(Ni)	Au(Ni)	Au(Pb)	Ir(Ni)	Co(M)	Co(AR)	Cu(M)	Cu(AR)	Cu(X)	Ni(M)	Ni(AR)	Ni(X)
AMIS 0314	11.74	11.35	34.17	32.20	(1.89)	5.13	2.50	2.53	(0.91)	0.0242	0.0212	0.7326	0.7115	0.7183	0.8790	0.8429	0.9073
AMIS 0354	(1.33)	1.34	(2.19)	2.25	(0.25)	(0.39)	(0.68)	0.71	(0.08)	(0.0145)	(0.00911)	0.0582	0.0586	0.0587	(0.1839)	0.1493	(0.1886)
AMIS 0209	0.64	0.63	1.20	1.21	(0.09)	(0.17)	(0.09)	(0.09)	(0.031)	0.0049	0.0030	0.0447	0.0449	(0.0445)	0.0909	0.0747	.
AMIS 0443	.	0.97	.	0.78	(0.07)	.	.	(0.14)	.	0.00988	(0.00700)	0.0951	0.0935	0.0879	0.1918	0.1678	(0.1833)
AMIS 0451	.	(0.254)	(0.534)	(0.518)	.	.	.	(0.044)	.	(0.0142)	(0.001312)	0.00755	0.00757	.	0.0903	0.0214	.

analysis listed in mass % S by combustion, rest by XRF SP.G = Specific Gravity 4E = sum Pd + Pt + Rh + Au 100 g units

Number	Al_2O_3	CaO	Co	Cr	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO	Na_2O	S	SiO_2	TiO_2	Sp.G	LOI	4E g/t	
AMIS 0314	7.75	5.46	(0.0271)	.	0.96	15.68	0.14	17.04	0.15	0.58	3.49	44.23	0.22	3.11	(4.92)	50.30	
AMIS 0354	5.50	4.01	.	.	1.94	18.32	0.09	23.65	0.24	0.37	0.36	44.63	0.59	3.330	.	4.45	
AMIS 0209	5.80	3.10	.	.	0.48	4.74	0.14	6.38	(0.07)	0.46	0.20	77.84	0.11	2.84	(0.29)	2.02	
AMIS 0443	8.10	7.08	.	.	1.72	11.61	0.26	20.06	0.32	0.62	.	44.67	0.25	3.03	(4.77)	1.96	
AMIS 0451	11.61	4.05	.	.	13.42	16.89	0.13	16.69	(0.19)	0.62	.	36.19	0.46	3.46	.	0.83	last

CRM NOBLE METAL ORE

analysis listed in ppb (ng/g) mass % except * which is mg/kg GPP: 10g or 1kg NCS: 500g or 1kg CAN WMS-1A: 200g other CAN: 400g

Number	Au	Ir	Os	Pd	Pt	Rh	Ru	Hg	Al_2O_3	As*	Cr*	Cu	Fe_2O_3	K_2O	MnO	Ni	S
NCS DC29116	(2310)	1.6	1.9	1680	2430	1.9	1.5	(0.70)	(1.47)	(12.24)	(0.17)	3.58	(13.10)	(0.12)	(0.11)	1.78	(7.44)
NCS DC29119	(2120)	1.9	1.6	1330	4440	1.4	0.71	(7.01)	(0.87)	(537.6)	(0.06)	0.62	(1.59)	(0.12)	(0.047)	1.76	(0.19)
GPP-10	1576	.	.	2008	2349	.	.	.	.	.	.	.	.	.	.	.	.
NCS DC29118	(1450)	3.2	3.0	700	900	3.2	3.5	(1.01)	(4.90)	(21.58)	(0.093)	3.25	(24.09)	(0.35)	(0.13)	1.76	(13.41)
NCS DC29118	(1450)	3.2	3.0	700	900	3.2	3.5	(1.01)	(4.90)	(21.58)	(0.093)	3.25	(24.09)	(0.35)	(0.13)	1.76	(13.41)
NCS DC29117	(1430)	4.4	3.7	600	10610	3.6	4.2	(1.39)	(4.50)	(22.6)	(0.16)	3.01	(26.66)	(0.39)	(0.12)	0.053	(13.57)
GPP-06	980	.	.	709	938	.	.	.	.	.	.	.	.	.	.	.	.
GPP-02	929	.	.	523	505	.	.	.	.	.	.	.	.	.	.	.	.
GPP-14	909	.	.	481	503	.	.	.	.	.	.	.	.	.	.	.	.
GPP-05	859	.	.	699	912	.	.	.	.	.	.	.	.	.	.	.	.
GPP-11	722	.	.	567	592	.	.	.	.	.	.	.	.	.	.	.	last
GPP-13	612	.	.	390	307	.	.	.	.	.	.	.	.	.	.	.	.
GPP-09	603	.	.	408	343	.	.	.	.	.	.	.	.	.	.	.	.
CAN WMS-1A	300	(322)	(150)	1450	1910	222	(145)	.	Al:1.350	30.9	(68)	1.396	45.4 Fe	.	.	.	28.17
NCS DC29120	(170)	23.6	8.2	400	380	18.0	7.8	(58.1)	(2.83)	(66.0)	(0.30)	0.11	(9.30)	(0.12)	(0.14)	0.22	(0.17)
GPP-04	80	.	.	98	88	.	.	.	.	.	.	.	.	.	.	.	.
GPP-12	50	.	.	47	48	.	.	.	.	.	.	.	.	.	.	.	.
GPP-08	49	.	.	45	54	.	.	.	.	.	.	.	.	.	.	.	last
CAN UMT-1	48	8.8	.	106	128	9.5	10.9	.	.	.	.	.	.	.	.	.	.
NCS DC73357	(45)	28	15.6	568	440	22	13	.	.	.	.	.	.	.	.	.	.
GPP-07	25	.	.	23	28	.	.	.	.	.	.	.	.	.	.	.	last
NCS DC73353	10	0.05	0.06	2.3	1.6	0.95	(0.10)	.	.	.	.	.	.	.	.	.	.
CAN TDB-1	6.3	.	.	22.4	5.8	.	.	.	.	.	.	.	.	.	.	.	.
GPP-03	4	.	.	7	8	.	.	.	.	.	.	.	.	.	.	.	.
CAN WGB-1	2.9	(0.33)	.	13.9	6.1	(0.32)	(0.3)	.	.	.	291	.	6.71	0.94	.	MgO: 9.40	.
NCS DC73358	(1.8)	1.2	0.64	15.2	14.7	1.1	0.66	.	.	.	.	.	.	.	.	.	.
NCS DC73354	1.1	4.3	9.6	4.6	6.4	1.3	14.8	.	.	.	.	.	.	.	.	.	.
NCS DC73352	0.9	0.032	0.05	0.26	0.26	0.017	(0.05)	.	.	.	.	.	.	.	.	.	.
NCS DC73356	.	136	353	11.3	20	10	527	.	.	.	.	.	.	.	.	.	.
NCS DC73398	.	28	43	570	1900	7.3	74	.	.	.	.	.	.	.	.	.	.
NCS DC73399	.	2.1	(2)	1670	5700	1.5	(2)	.	.	.	.	.	.	.	.	.	.
Number	Au	Ir	Os	Pd	Pt	Rh	Ru	Hg	Al_2O_3	As*	Cr*	Cu	Fe_2O_3	K_2O	MnO	Ni	S

CRM OBSIDIAN

analysis listed in mass % — 35 g units

Number	Al_2O_3	CaO	FeO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2
SRM 278	14.15	0.983	1.36	2.04	4.16	(0.23)	0.052	4.84	0.036	73.05	0.245

analysis listed in mg/kg

Number	Cu	Ni	Pb	Rb	Sr	Th	Ti	U
SRM 278	5.9	3.6	16.4	127.5	63.5	12.4	0.54	4.58

RM OLIVINE WITH EXTENSIVE ANALYSIS

analysis listed in mass % — 100 g units

Number	Al_2O_3	CaO	Co	Cr	TFe_2O_3	K_2O	MgO	MnO	Na_2O	Ni	P_2O_2	SiO_2	TiO_2	LOI
IAG MUH-1	1.33	1.21	0.0106	(0.2710)	8.59	0.012	38.2	0.117	0.10	0.210	0.007	40.3	0.034	9.38

continued analysis listed in mg/kg

Number	As	Ba	Ce	Cs	Cu	Dy	Er	Eu	Ga	Gd	Hf	Ho	La	Li	Lu	Nb
IAG MUH-1	(3.6)	4.9	(0.20)	0.099	19	0.153	0.108	0.026	1.38	(0.110)	0.04	0.035	(0.134)	(1.8)	0.019	(0.062)

Number	Nd	Pb	Pr	Rb	Sb	Sc	Sm	Sr	Tb	Th	Tm	U	V	Y	Yb	Zn
IAG MUH-1	0.177	(0.42)	0.035	0.27	(0.134)	9.0	0.067	(8.5)	0.0212	0.018	0.0170	(0.014)	(41)	(0.97)	0.118	44

RM OLIVINE

typical analysis listed in mass % — 100 g units

Number	MgO	SiO_2	Fe	Al_2O_3	C tot	CO_2	CaO	Co_3O_4	Cr_2O_3	K_2O	Mn_3O_4	NiO	P_2O_5	TiO_2	$-H_2O$ at 900'C
DH 4912	49.18	41.6	5.07	0.432	0.054	0.046	0.081	0.016	0.383	0.014	0.103	0.354	.	0.002	1.25

CRM OOZE

Number	Type	SiO_2	Al_2O_3	Ba	CO_2	CaO	Ce	Cr	FeO	$T.Fe_2O_3$	K_2O	MgO	MnO	Na_2O	P_2O_5	TiO_2	LOI
VS 5370-90	**Calcerous**	11.90	3.60	0.010	32.20	39.23	.	0.0034	0.17	2.44	0.51	3.44	0.218	1.86	0.23	0.30	36.6
VS 5371-90	**Siliceous**	59.60	8.96	0.15	2.70	6.40	0.033	0.0080	1.2	5.05	1.39	3.16	0.37	4.52	0.12	0.59	9.6

continued analysis listed in mass %

Number	As	B	Org.C	Cu	Ni	S	Sn	Sr	V	Zn	Zr
VS 5370-90	.	.	.	0.0030	0.0038	0.19	0.021	0.12	0.0057	0.010	0.008
VS 5371-90	0.0020	0.007	0.34	0.014	0.010	0.17	0.00032	0.034	0.0085	0.0090	0.010

continued analysis listed in mg/kg

Number	Au	Be	Co	Cs	Ga	La	Li	Mo	Nb	Nd	Pb	Rb	Sc	Sm	Th	U	Y	Yb
VS 5370-90	.	1.0	12	.	5	7	13	4	.	.	11	11	6	.	3	.	9	.
VS 5371-90	0.004	1.6	30	3.0	11	15	18	2.8	10	13	24	46	17	2.5	5	1.5	16	2.2

PEGMATITE WITH EXTENSIVE ANALYSIS

analysis listed in mass % IAG: RM, ~35 g units NCS: CRM, 70 g units VS: CRM, 50 g units

Number	Al_2O_3	CO_2	CaO	F	FeO	Fe_2O_3	H_2O+	K_2O	MgO	Mn	MnO	Na_2O	P_2O_5	SO_3	SiO_2	TiO_2	LOI
VS 6318-92	18.81	.	0.43	0.107	0.49	0.80T	.	1.33	0.27	.	0.054	8.44	0.29	.	68.06	0.100	0.91
NCS DC71313	13.19	(0.05)	(0.1)	(0.03)	(0.04)	(0.24T)	(1.02)	6.22	0.13	(0.01)	.	1.60	0.18	0.07	76.40	0.61	1.27
IAG OU-9	12.35	.	0.29	.	.	0.74	.	1.36	.	.	0.11	4.17	0.03	.	79.5	0.057	0.78

continued analysis listed in mg/kg except % which is mass %

Number	Ag	As	B	Ba	Be	Bi	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd
VS 6318-92	.	.	.	.	56	.	.	.	.	13	95	.	.	.	.	35	.
NCS DC71313	(0.09)	3.1	(1.9)	(728)	1.3	(0.07)	0.15	(5)	(1.5)	4.8	1.8	4.2	0.20	0.12	(0.16)	13.5	0.22
IAG OU-9	.	.	.	8.75	.	.	.	7.24	.	.	403.3	.	1.70	0.30	0.05	56.6	2.53

Number	Ge	Hf	Hg	Ho	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Rb	Sb	Sc	Se
VS 6318-92	8.6	.	.	.	.	220	.	.	72	.	.	.	.	450	.	.	.
NCS DC71313	1.5	(0.8)	(0.008)	(0.04)	(3.3)	14.4	0.03	(0.29)	14.6	1.5	(1.6)	34.6	0.48	155	0.64	(2.85)	(0.015)
IAG OU-9	4.95	.	.	0.15	2.03	694.6	0.04	.	155.3	5.07	.	.	1.24	2501	7.67	2.77	.

Number	Sm	Sn	Sr	Ta	Tb	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
VS 6318-92	.	600	68	69	.	.	.	.	.	14	.	.	.	49	56
NCS DC71313	(0.24)	3.5	45.5	1.3	(0.04)	0.66	.	(0.02)	(0.75)	44.5	3.2	1.6	0.21	20.3	22.6
IAG OU-9	3.15	.	.	124.7	0.46	5.08	13.8	0.05	4.37	.	6.1	8.14	.	28.15	.

CRM PERIDOTITE WITH EXTENSIVE ANALYSIS

anlaysis listed in mass %

Number	Al	Al_2O_3	C	Ca	CaO	Co	CO_2	Cr	Cu	Fe	Fe_2O_3	$T.Fe_2O_3$	FeO	H_2O-	H_2O+	K	K_2O
~~VS 2111-81~~	~~.~~	~~1.84~~	~~.~~	~~.~~	~~1.26~~	~~0.0159~~	~~0.69~~	~~0.320~~	~~0.0140~~	~~.~~	~~.~~	~~11.58~~	~~8.83~~	~~.~~	~~.~~	~~.~~	~~0.044~~
CAN WPR-1a	2.621	.	(0.15)	2.528	.	0.0213	.	(0.322)	0.299	11.34	.	.	.	.	.	0.156	.

Number	Mg	MgO	Mn	MnO	Na	Na_2O	Ni	P	P_2O_5	S	Si	SiO_2	Ti	TiO_2	V	Zn	LOI
~~VS 2111-81~~	~~.~~	~~37.12~~	~~.~~	~~0.183~~	~~.~~	~~0.105~~	~~0.160~~	~~.~~	~~.~~	~~0.030~~	~~.~~	~~45.54~~	~~.~~	~~0.107~~	~~0.0039~~	~~0.0137~~	~~.~~
CAN WPR-1a	(15.22)	.	0.138	.	(0.050)	.	0.439	0.0303	.	1.768	17.62	.	0.3527	.	0.0135	0.0160	(8.42)

analysis listed in mg/kg

Number	Ag	As	Au	B	Ba	Be	Bi	Cd	Ce	Cl	Cs	Dy	Er	Eu	F	Ga	Gd
~~VS 2111-81~~	~~.~~	~~.~~	~~.~~	~~.~~	~~66~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~5.9~~	~~.~~
CAN WPR-1a	1.02	9.3	(0.05)	.	70.6	(0.2)	0.122	0.598	9.69	.	2.38	1.624	0.886	0.497	.	7.04	1.76

Number	Ge	Hf	Hg	Ho	In	Ir	La	Li	Lu	Mo	Nb	Nd	Os	Pb	Pd	Pr
~~VS 2111-81~~	~~1.6~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~1.3~~	~~.~~	~~.~~	~~.~~	~~6.7~~	~~.~~	~~.~~
CAN WPR-1a	(0.3)	1.142	(0.05)	0.322	(0.0899)	(0.2)	4.04	25.6	0.121	(0.9)	(3.88)	6.26	.	7.92	0.614	1.362

Number	Pt	Rb	Re	Ru	Sb	Sc	Se	Sm	Sn	Sr	Ta	Tb	Te	Th	Tl	Tm
~~VS 2111-81~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~11.3~~	~~.~~	~~.~~	~~3.2~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~
CAN WPR-1a	0.452	7.06	.	.	3.13	17.3	(7.7)	1.617	(1.16)	19.5	(0.242)	0.269	(0.958)	(0.64)	(0.0752)	0.126

Number	U	W	Y	Yb	Zr	Units
~~VS 2111-81~~	~~.~~	~~.~~	~~.~~	~~1.5~~	~~21~~	~~40 g~~
CAN WPR-1a	.	.	8.39	0.79	(41.8)	400 g

CRM PHOSPHATE ROCK

* CaO+SrO ** AFPC Method (s) = soluble analysis listed in mass % GPO: 10 g units SRM: 90 g units others: 100 g units

Number	P_2O_5	CaO	Al_2O_3	CO_2	F	Fe_2O_3	TFe_2O_3	K_2O	MgO	MnO	Na_2O	S	SO_3	SiO_2	SrO	TiO_2	LOI
SARM 32	39.96	54.44	(0.05)	1.61	2.49	0.14	.	.	0.50	(0.026)	.	.	.	(0.4)	0.52	.	.
GBW 07210	36.89	51.32*	0.58	2.15	3.54	.	1.04	0.17	0.43	0.024	0.33	.	.	3.26	0.077	0.037	.
IPT 18B	35.7	52.6	0.35	.	1.33	0.21	.	0.23	1.65(s)	.	0.14(s)	.	.	1.15	0.48(s)	.	.
~~SRM 120c~~	~~33.34**~~	~~48.02**~~	~~1.30~~	~~3.27**~~	~~3.82**~~	~~1.08~~	~~.~~	~~0.147~~	~~0.32**~~	~~0.027~~	~~0.52~~	~~(0.37)~~	~~.~~	~~5.5**~~	~~(0.1)~~	~~0.103~~	~~.~~
BCR 032	32.98	51.76	0.55	5.10	4.04	0.231	.	.	0.403	.	.	.	1.84	2.09	.	.	.
SRM 694	30.2	43.6	1.8	.	3.2	0.79	.	0.51	0.33	0.0116	0.86	.	.	11.2	.	(0.11)	.
GPO-01	28.66	40.08	6.92	.	.	3.412	.	0.10	0.83	0.093	0.307	.	1.318	4.381	.	0.37	12.45
USZ 14-94	26.38	38.85	0.85	5.84	.	.	0.63	0.092	2.26	.	.	.	.	20.57	.	.	6.43
~~GPO-15~~	~~25.22~~	~~45.12~~	~~0.74~~	~~.~~	~~.~~	~~0.803~~	~~.~~	~~0.25~~	~~2.90~~	~~0.010~~	~~1.039~~	~~.~~	~~2.426~~	~~7.77~~	~~.~~	~~0.05~~	~~12.32~~
GPO-14	24.52	44.77	0.78	.	.	0.819	.	0.26	3.07	0.047	0.979	.	2.284	8.13	.	0.05	12.96
GBW 07211	20.86	40.71*	2.58	18.46	2.05	.	1.08	0.28	8.19	0.015	0.059	0.79	.	3.61	0.16	0.14	.
USZ HF	13.81	33.80	.	.	.	.	0.37	0.077	8.30	.	0.12	.	.	28.04	.	.	.
GBW 07212	6.06	19.42*	4.06	16.41	0.51	.	3.08	2.63	7.12	0.026	0.14	.	.	38.80	0.055	0.48	.
GPO-13	4.94	6.84	10.02	.	.	5.391	.	3.75	0.68	0.030	1.454	.	0.239	62.622	.	0.16	3.43

continued analysis listed in mass % analysis listed in mg/kg

Number	BaO	CdO	U	U_3O_8	V_2O_3	V_2O_5	As	B	Cd	Cl	Co	Cr	Cu	Hg	I	Mn	Ni	Ti	V	Zn
SARM 32	.	.	.	.	.	.	.	.	.	(640)	.	.	.	.	.	.	.	.	.	.
GBW 07210	.	.	.	.	.	.	.	.	.	.	.	.	.	.	52	.	.	.	.	.
IPT 18B	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
~~SRM 120c~~	~~.~~	~~.~~	~~.~~	~~0.0135~~	~~0.016~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~
BCR 032	.	.	.	.	.	.	9.5	22.6	20.8	.	0.59	257	33.7	0.0551	.	18.8	34.6	171	153	253
SRM 694	.	0.015	0.01414	.	.	0.31	.	.	.	.	.	.	.	.	.	.	.	.	.	.
GPO-01	0.05	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	last of stock		
USZ 14-94	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
~~GPO-15~~	~~0.015~~	~~.~~	~~(0.00568)~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~52~~	~~.~~	~~.~~	~~last of stock~~		
GPO-14	0.015	.	(0.00566)	.	.	.	.	.	.	.	.	.	.	.	52	.	.	last of stock		
GBW 07211	.	.	.	.	.	.	.	.	.	.	.	.	.	.	59	.	.	.	.	.
USZ HF	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
GBW 07212	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
GPO-13	0.01	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	last of stock		

CRM PLAGIOGNEISS WITH EXTENSIVE ANALYSIS

analysis listed in mass % 100 g units

Number	Al_2O_3	Ba	CO_2	CaO	Cr	F	FeO	$T.Fe_2O_3$	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	Zr	LOI
VS 8871-2007	15.90	0.091	(0.13)	2.85	0.0182	0.0573	4.14	6.06	(1.1)	3.56	2.59	0.069	2.25	0.080	64.92	0.70	0.0234	0.76

analsis listed in mg/kg

Number	Ag	As	B	Be	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Ge	Hf	Ho	La	Li	Lu	Mo
VS 8871-2007	(0.09)	(2.0)	(100)	0.97	(0.10)	104	19.7	182	0.32	31	3.3	2.1	1.8	18.5	4.7	(1.1)	6.2	0.69	53	21	0.31	1.7

Number	Nb	Nd	Ni	Pb	Pr	Rb	S	Sb	Sc	Sm	Sn	Sr	Ta	Tb	Th	Tl	Tm	U	V	W	Y	Yb	Zn
VS 8871-2007	10.0	43.8	60	14.2	11.5	55	(74)	(0.05)	14.3	6.9	(0.6)	364	0.40	0.6	11.3	0.31	0.33	0.8	98	(0.3)	17.8	2.02	81

CRM PROPHILITE

analysis listed in mass % 50 g units

Number	Al_2O_3	CaO	Fe_2O_3	$T.Fe_2O_3$	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	SO_3	SiO_2	TiO_2	LOI
JCRM R802	32.3	0.04	0.23	.	.	0.07	<0.01	.	0.09	0.05	.	60.7	0.19	6.0
NCS DC60127	23.58	0.17	.	1.94	4.15	0.38	0.087	0.0037	0.34	0.20	0.61	66.84	0.70	5.48
NCS DC60128	22.20	0.066	.	0.22	5.57	0.028	0.041	0.0040	0.043	0.11	0.17	70.34	0.18	6.34

CRM QUARTZ

analysis listed in mass % T = Total SRM: 5 g US: 25 g

Number	SiO_2	Al_2O_3	CaO	FeO	Fe_2O_3	Fe_2O_3T	K_2O	MgO	Mn	Na_2O	P_2O_5	TiO_2	Respirable Crystalline Phase
~~US QLO-1A~~	~~65.6~~	~~16.2~~	~~3.17~~	~~2.97~~	~~1.02~~	~~4.35~~	~~3.60~~	~~1.00~~	~~.~~	~~4.20~~	~~0.25~~	~~0.62~~	~~.~~
~~CRM 1878b~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~96.56 +/- 0.40%~~

continued analysis, for SUS only, listed in mg/kg

Number	Ag	As	B	Ba	Br	Ce	Cl	Co	Cr	Cs	Cu	Dy	Er	Eu	F	Ge	La	Li	Lu
~~US QLO-1A~~	~~0.064~~	~~(3.5)~~	~~36~~	~~1370~~	~~(2.1)~~	~~54~~	~~220~~	~~7.2~~	~~3.2~~	~~1.8~~	~~29~~	~~3.8~~	~~2.3~~	~~1.43~~	~~280~~	~~(1.3)~~	~~27~~	~~25~~	~~0.37~~

Number	Mo	Nb	Nd	Pb	Rb	S	Sm	Sn	Sr	Ta	Tb	Th	Tm	U	V	W	Y	Yb	Zn	Zr
~~US QLO-1A~~	~~2.6~~	~~10~~	~~(26)~~	~~20~~	~~74~~	~~(30)~~	~~4.9~~	~~2.3~~	~~340~~	~~0.82~~	~~0.71~~	~~4.5~~	~~0.37~~	~~1.9~~	~~54~~	~~0.58~~	~~24~~	~~2.3~~	~~61~~	~~185~~

CRM QUARTZITE

analysis listed in mass % 80 g units

Number	SiO_2	Al_2O_3	CaO	Cr_2O_3	$T.Fe_2O_3$	K_2O	MgO	MnO	Na_2O	P_2O_5	TiO_2	LOI
NCS DC71325	99.18	0.29	0.036	0.0053	0.16	0.050	0.022	0.0049	0.010	0.0036	0.014	0.14
NCS DC71324	95.97	1.33	0.59	0.0083	0.61	0.28	0.15	0.0080	0.13	0.018	0.059	0.69
NCS DC71323	92.93	2.43	1.20	0.0077	0.62	0.60	0.29	0.015	0.28	0.025	0.10	1.35

continued analysis listed in mg/kg

Number	As	Ba	Be	Bi	Cd	Ce	Cl	Co	Cu	Hg	La	Li
NCS DC71325	0.48	17.4	0.09	0.034	0.015	1.1	(15)	1.6	8.9	(0.002)	0.54	2.5
NCS DC71324	1.3	56.8	0.21	0.050	0.025	19.3	(38)	1.4	13.4	(0.002)	9.3	2.7
NCS DC71323	0.89	84.2	0.41	0.036	0.037	16.7	(34)	1.8	14.6	(0.003)	8.8	3.4

Number	Mo	Ni	Pb	Rb	Sb	Sr	Th	U	V	W	Zn	Zr
NCS DC71325	3.8	15.8	31.7	3.0	0.20	3.0	0.14	0.10	1.8	0.19	3.7	(1.7)
NCS DC71324	2.1	23.9	69.4	10.3	0.22	20.0	1.8	0.48	7.4	0.27	7.8	53
NCS DC71323	1.6	21.5	39.7	16.7	0.20	33.9	2.9	0.58	11.9	0.47	11.2	93

CRM RARE EARTH ORE WITH EXTENSIVE ANALYSIS

% = mass percent, * = mg/kg AMIS: 100 g or 1 kg GRE: 10 g USZ: 100 g units

Number	As*	Ba	Be*	Ce%	Co*	Cr*	Cs*	Cu*	Dy*	Er*	Eu*	Ga*	Gd*	Hf*	Ho*
GRE-06	.	3442*	.	**15.41**	.	.	.	.	615	111	1773	.	3197	.	70.67
AMIS 0185	(31.01)	(6%)	.	**4.075**	(6.06)	(48)	(0.2)	(15.35)	(27.1)	(4.24)	(0.009)	(183)	(244)	(1.35)	(3.2)
USZ 25-2006	156	917*	.	**2.90**	32.46	.	.	128	206	79.50	211	.	553	.	36.60
USZ 42-2006	224	307*	.	**2.76**	7.89	(34)	(55)	27.37	57.63	(23.88)	87.22	.	(295)	.	7.86
GRE-02	.	.	.	**1.6797**	.	.	.	.	28.56	7.96	139.9	.	262.2	.	2.87
GRE-01	.	.	.	**1.2960**	.	.	.	.	20.86	5.16	85.1	.	163.5	.	2.13
GRE-08	.	4047*	.	**0.5099**	.	.	.	.	143	33.8	108.8	.	283	.	19.1
GRE-10	.	8943*	.	**0.4064**	.	.	.	.	58	9.4	57.7	.	150	.	6.2
GRE-12	.	726*	.	**0.3216**	.	.	.	.	16	2.5	32.8	.	71	.	1.7
GRE-13	.	272*	.	**0.2938**	.	.	.	.	175	95.2	6.4	.	193	.	33.5
GRE-09	.	4509*	.	**0.2577**	.	.	.	.	51	9.7	49.4	.	130	.	5.7
GRE-11	.	2088*	.	**0.2331**	.	.	.	.	67	17.1	82.7	.	183	.	8.5
USZ 44-2007	43.7	95*	.	**0.10**	(13.31)	200	1.05	13	165	(112)	8.3	64	117	400	37
GRE-07	.	2868*	.	**0.0806**	.	.	.	.	10	2.1	12.7	.	30	.	1.1
GRE-05	.	.	100.89	**0.012105**	.	.	.	.	195.6	149.16	3.29	99.91	74	310.7	44.7

continued AMIS 0185 lists La by XRF and M/ICP, some informational values rounded, contains 22 other informational values

Number	La%	Li*	Lu*	Mo*	Nb*	Nd%	Ni*	P%	Pb%	Pr%	Rb*	Sc*	Sm%	Sn%	Sr%
GRE-06	9.14	.	6.81	.	.	7.12	.	(8.14)	.	1.92	.	114	(0.83)	.	.
AMIS 0185	3.003, 2.976	(18.50)	(0.56)	(22.33)	(73)	0.9238	(12.57)	.	(0.0145)	0.3471	(4.70)	(15.4)	0.0556	(1.13)	(5.3344)
USZ 25-2006	1.93	.	7.64	(23.86)	.	0.88	70.80	.	0.11	0.28	43	.	0.09	.	2.24
USZ 42-2006	2.11	21.78	.	34.40	31	0.65	13.18	.	0.16	0.23	67.12	(15.17)	0.0539	.	0.49
GRE-02	0.9786	.	0.42	.	383.6	0.7048	.	0.19955	.	0.1883	.	76.7	0.07692	.	.
GRE-01	0.8246	.	0.36	.	1669.8	0.4278	.	0.03059	.	0.12732	.	49.84	0.04222	.	.
GRE-08	0.1467	.	1.8	.	1040	0.4433	.	0.8979	.	0.0953	.	91	0.0515	.	0.0206
GRE-10	0.0834	.	0.4	.	93	0.2914	.	0.8703	.	0.0721	.	33	0.0283	.	0.0723
GRE-12	0.0928	.	0.2	.	290	0.2030	.	0.2052	.	0.0507	.	39	0.0180	.	0.0452
GRE-13	0.1850	.	11.1	.	3061	0.1144	.	0.0344	.	0.0334	.	(11)	0.0209	.	0.0054
GRE-09	0.0620	.	0.6	.	674	0.2065	.	0.6450	.	0.0461	.	59	0.0234	.	0.0540
GRE-11	0.0523	.	1.2	.	6121	0.3574	.	0.5086	.	0.0601	.	72	0.0452	.	0.0440
USZ 44-2007	0.0434	37	.	(12.6)	(1700)	0.0434	(10.4)	.	0.0149	0.0122	641	.	0.0120	0.0126	0.0158
GRE-07	0.0239	.	0.2	.	415	0.0571	.	0.1700	.	0.0137	.	55	0.0062	.	0.0142
GRE-05	0.002738	(241)	19.32	.	2832	0.006839	.	.	.	0.001779	.	.	0.004614	0.0308	.

Number	Ta*	Tb*	Th*	Ti%	Tm*	U*	V*	W*	Y*	Yb*	Zn%	Zr%	
GRE-06	.	229	1540	Tl*:(0.53)	10.27	30.22	.	.	1424	46.32	0.1450	(0.0168)	
AMIS 0185	(0.16)	(15.3)	(237)	.	.	(46)	(54)	(1)	(62)	(2.75)	(0.0622)	(0.0057)	
USZ 25-2006	.	54.60	217	.	.	.	138.6	.	959	54.52	0.06	.	
USZ 42-2006	.	(45)	946	.	.	(52)	115	(19)	167	17.85	0.0469	(0.01)	
GRE-02	5.58	14.62	.	0.2628	0.527	.	.	.	55.97	2.96	.	0.01363	last
GRE-01	14.1	9.98	.	1.921	0.397	.	.	.	49.81	2.42	.	0.06594	
GRE-08	12	33.4	731	.	3.0	41.1	.	.	448	14.6	.	0.0111	
GRE-10	(1)	16.0	340	.	0.8	24.9	.	.	137	3.8	.	0.0082	
GRE-12	5	5.5	235	.	0.2	11.8	.	.	36	1.3	.	0.0117	
GRE-13	192	30.4	351	.	13.4	96.5	.	.	975	82.4	.	1.4326	
GRE-09	11	14.0	386	.	1.0	26.5	.	.	126	5.1	.	0.0135	
GRE-11	20	17.5	828	.	1.9	16.5	.	.	179	9.9	.	0.0573	
USZ 44-2007	123	25	202	.	.	57	.	88	1102	123	0.0534	1.58	
GRE-07	14	2.9	81	.	0.2	11.8	.	.	27	1.3	.	0.0061	
GRE-05	181.9	24.55	314.51	.	23.39	42.8	.	9.04	1076.3	145.28	.	0.7133	

continued analysis for AMIS, GRE-06 and USZ listed in mass % RE_xO_y = Total Rare Earths

Number	RE_xO_y	Al_2O_3	CO_2	CaF_2	CaO	F%	FeO	Fe_2O_3	H_2O-	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	SO_3	SiO_2	TiO_2	LOI	Density
AMIS 0185	.	2.22	.	.	11.48	.	(Fe:3.59)	5.29	.	.	(0.10)	4.69	(1.09)	(0.17)	1.74	S:1.93	21.53	(0.081)	20.69	3.28
USZ 25-2006	7.56	2.47	1.04	(32.90)	25.51	(1.89)	0.14	13.45	(0.67)	.	0.91	0.50	0.14	0.92	19.26	4.58	14.86	0.15	6.78	.
USZ 42-2006	8.27	2.72	29.00	.	32.68	(1.61)	(0.08)	5.71	(0.19)	(2.03)	1.55	2.78	1.67	0.25	0.22	(0.14)	11.86	0.20	30.56	.
USZ 44-2007	.	10.93	.	(2.20)	2.03	(0.98)	(0.36)	3.38	(0.18)	(0.68)	3.70	(0.05)	0.06	3.46	(0.03)	.	71.38	0.31	(1.64)	.

Number	Al	Ca	Fe	K	Mg	Mn	S	Si	TiO_2
GRE-06	1.22	1.88	14.42	(0.08)	0.34	0.7396	0.35	0.8388	0.59
GRE-08	3.23	0.6	33.37	.	0.50	0.1329	0.07	14.1	.
GRE-10	7.52	1.5	17.25	.	0.51	0.4951	(0.04)	20.3	.
GRE-12	1.72	6.2	23.86	.	2.36	2.0561	(0.03)	12.4	.
GRE-13	6.72	0.3	5.17	.	0.17	0.3638	(0.02)	30.1	.
GRE-09	5.67	1.2	30.88	.	0.57	0.6617	(0.03)	12.0	.
GRE-11	5.24	0.3	16.71	.	1.02	0.0870	(0.03)	25.1	.
GRE-07	4.73	0.3	19.85	.	1.11	0.5917	(0.03)	22.9	.

CRM RARE EARTH ORE

analysis listed in mass %

Number	RE_xO_y	Al_2O_3	CaO	F-	FeO	Fe_2O_3	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI
NCS DC86318	4.30	(14.26)	0.29	0.017	0.20	2.24	3.60	5.52	(0.11)	0.052	0.66	(0.020)	66.90	0.17	5.43
NCS DC86317	1.83	16.59	(0.11)	0.15	0.18	0.71	4.63	4.03	0.13	0.10	0.13	(0.0073)	70.92	(0.018)	5.42
NCS DC86312	0.784	19.00	0.029	0.014	(0.072)	3.46	6.64	2.11	0.231	0.069	0.064	(0.029)	66.72	0.530	6.80
NCS DC86311	0.486	14.65	(0.031)	0.034	(0.039)	1.13	3.61	4.92	0.080	0.016	0.155	(0.0025)	74.34	(0.023)	3.70
NCS DC86310	0.085	14.70	(0.026)	0.034	0.054	1.15	3.61	4.98	0.077	0.017	0.158	(0.0027)	74.55	0.022	3.77
NCS DC86309	0.092	19.04	(0.033)	0.016	(0.071)	3.49	6.64	2.13	0.229	0.070	0.062	0.029	67.28	0.537	6.73

Number	CeO_2	Cs_2O	Dy_2O_3	Er_2O_3	Eu_2O_3	Gd_2O_3	Ho_2O_3	La_2O_3	Li_2O	Lu_2O_3
NCS DC86318	0.053	0.00126	0.37	0.20	0.00219	0.25	(0.064)	0.23	0.0121	0.030
NCS DC86317	0.021	0.0148	0.12	0.068	0.000956	0.091	(0.023)	0.25	0.0396	0.00645
NCS DC86312	0.023	0.00055	0.021	0.011	0.00750	0.026	0.00409	0.277	0.00398	0.00136
NCS DC86311	0.00348	0.00178	0.036	0.022	0.00018	(0.027)	0.00750	0.011	0.015	0.00304
NCS DC86310	0.00217	0.00177	0.00563	0.00364	0.000036	0.00324	0.00120	0.00200	0.015	0.00055
NCS DC86309	0.00915	0.00056	0.00273	(0.0016)	0.00081	0.00317	0.00057	0.031	0.00403	0.00020

Number	Nd_2O_3	Pr_6O_{11}	Rb_2O	Sc_2O_3	Sm_2O_3	Tb_4O_7	Th	Tm_2O_3	Y_2O_3	Yb_2O_3	Units
NCS DC86318	0.40	0.089	0.0404	0.00072	0.20	0.055	0.00670	0.031	2.16	0.21	70 g
NCS DC86317	0.24	0.066	0.12	0.00101	0.066	0.019	0.00210	0.00829	0.80	0.051	70 g
NCS DC86312	0.186	0.054	0.011	0.00118	0.033	0.00407	0.00236	0.00151	0.124	0.0100	70 g
NCS DC86311	0.022	(0.0045)	0.067	0.00089	0.015	0.00577	0.00390	0.00316	0.303	0.022	70 g
NCS DC86310	0.00276	0.00063	0.069	0.00095	0.00157	0.00082	0.00405	0.00057	0.057	0.00366	70 g
NCS DC86309	0.017	0.00492	0.012	0.00113	0.00338	0.00054	0.00245	0.00024	(0.018)	0.00141	70 g

CRM RARE EARTH ORE

analysis listed in mass % and mg/kg * RExOy = total rare earth oxides

Number	RE_xO_y%	CeO_2%	Dy*	Er*	Eu_2O_3%	Gd_2O_3%	Ho*	La_2O_3%	Lu*	Nd_2O_3%	Pr_2O_3%	Sc*	Sm_2O_3%	Tb*	ThO_2%	Tm*	Y_2O_3%	Yb*
UNS TRV	13.82	6.64	(207.1)	(41.2)	0.042	(0.089)	(41.5)	(4.23)	(6.7)	(1.94)	(0.71)	(22.5)	0.22	(82.3)	(0.29)	(14.8)	(0.048)	(21.6)

continued analysis listed in mass % T = total

Number	Al_2O_3	BaO	CO_2	CaO	F	FeO	$T.Fe_2O_3$	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	T.S	SO_3	SiO_2	SrO	TiO_2	LOI
UNS TRV	(0.52)	17.02	(16.5)	13.54	1.57	3.61	8.34	(1.24)	0.15	2.27	1.15	(0.07)	(0.12)	6.05	(13.58)	(2.47)	5.92	0.079	17.16

continued analysis listed in mg/kg

Number	Ag	As	Be	Bi	Cd	Co	Cr	Cu	Li	Mo	Ni	Pb	V	Zn	Units
UNS TRV	(6.7)	(335)	(4.2)	(72.9)	(7.5)	(26.5)	(40.6)	(41.5)	(28.8)	71.4	(44.0)	(332.9)	(74.2)	767.9	100 g

CRM RARE EARTH ORE

analysis listed in mass % 100 g units

Number	Al	Ba	C	Ca	Fe	H_2O	K	Mg	Mn	Na	P	S	Si	Zr	LOI
CAN REE-1	3.59	0.01001	(0.0786)	2.30	(4.16)	(0.6)	3.09	(0.895)	(0.155)	1.445	0.0261	(0.03)	31.36	1.91	(2)
CAN REE-2	0.761	5.02	(9.06)	13.68	12.14	(0.4)	(0.0172)	6.26	1.316	(0.120)	0.461	1.745	1.377	(0.00322)	31.38
CAN REE-3	4.372	0.00691	(0.08)	1.644	8.28	(0.1)	3.76	0.0594	(0.313)	(2.328)	0.0201	(0.04)	29.66	1.8660	0.346

continued analysis listed in mg/kg

Number	Ag	As	Be	Bi	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd
CAN REE-1	.	124	(590)	(0.652)	.	3960	1.58	277	1.07	79.7	847	701	23.5	(64)	433
CAN REE-2	(1)	.	(3.31)	(2.00)	(1.11)	9610	7.71	(32.7)	(0.09)	(5.55)	69.2	14.0	96.6	(60)	(219)
CAN REE-3	(2)	.	82.3	(1.171)	(4.2)	4540	(0.92)	82	1.118	16.3	330.3	187.2	20.85	(80)	346

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Number	Ge	Hf	Ho	In	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Rb	Sb
CAN REE-1	(3)	479	208	(0.2)	1661	(205)	(92.4)	(36.6)	4050	1456	24.7	1137	435	1047	(3.16)
CAN REE-2	(7)	(0.95)	7.87	(1.403)	5130	9.61	(0.92)	(154)	(1060)	3660	(13.1)	(40.8)	1075	1.22	(0.89)
CAN REE-3	.	448	65.0	(0.4)	2121	(60)	21.53	59.7	1073	2083	10.83	534	550	887	(0.2)

Number	Sc	Sm	Sn	Sr	Ta	Tb	Th	Ti	Tl	Tm	U	V	W	Y	Yb	Zn
CAN REE-1	(8)	381	498	129	(231)	106.2	719	(3840)	(1.85)	106	137	(9.9)	(10)	5480	678	(1870)
CAN REE-2	57.5	410	24.1	2300	1.17	20.3	737	1969	(0.240)	1.383	3.73	(79)	9.9	176	(7.2)	(420)
CAN REE-3	(3)	398	121.1	133.7	60.7	55.2	135.5	3202	(2.341)	25.8	(29.9)	(4)	(1)	1.725	159.4	1499

CRM RHYOLITE WITH EXTENSIVE ANALYSIS

analysis listed in mass %

Number	SiO_2	Al	Al_2O_3	CO_2	CaO	Fe_2O_3	FeO	T.Fe_2O_3	H_2O	K	K_2O	MgO	MnO	Na_2O	P_2O_5	Si	TiO_2
CGL 018	76.39	.	11.86	.	0.048	LOI:(0.35)		1.81	(0.18)	.	5.17	0.094	0.0713	3.73	0.010	.	0.199
JR-2	75.69	6.73	12.72	.	0.50	0.27	0.44	0.77	+1.19 -0.22	3.69	4.45	0.04	0.112	3.99	0.012	35.38	0.07
JR-1	75.45	6.79	12.83	.	0.67	0.35	0.49	0.89	+1.16 -0.20	3.66	4.41	0.12	0.099	4.02	0.021	35.27	0.11
~~US RGM-2 *~~	~~73.4~~	~~7.31~~	~~14.0~~	~~.~~		~~1.23~~	~~.~~	~~.~~	~~1.86~~	~~.~~	~~3.61~~	~~4.35~~	~~0.20~~	~~.~~	~~4.14~~	~~(0.05)~~	~~34.3~~
0.25																	
GBW 07113	72.78	.	12.96	0.52	0.59	1.14	1.86	.	1.18	.	5.43	0.16	0.14	2.57	0.045	.	0.30
JR-3	72.76	.	11.90	.	0.093	2.61	1.86	4.72	.	.	4.29	0.050	0.083	4.69	0.017	.	0.21

continued analysis listed in mg/kg except % which is mass % and * which is ppb

Number	Ag	As	Au*	B	Ba	Be	Bi	C	Ca%	Cd	Ce	Cl	Co	Cr	Cs	Cu	Dy	Er
CGL 018	.	3.9	.	.	3.6	7.1	(0.077)	.	.	(0.09)	127	.	(0.23)	41	4.3	(1.3)	9.1	4.4
JR-2	.	19.2	0.13	145	39.5	3.75	0.62	.	0.36	0.023	38.8	.	0.46	3.10	25.0	1.36	6.63	4.36
JR-1	.	16.3	0.25	117	50.3	3.34	0.56	70.8	0.48	0.026	47.2	920	0.83	2.83	20.8	2.68	5.69	3.61
~~US RGM-2 *~~	~~.~~	~~3.3~~	~~.~~	~~.~~	~~842~~	~~(2.5)~~	~~.~~	~~.~~	~~0.08~~	~~.~~	~~40~~	~~(536)~~	~~2~~	~~(4)~~	~~.~~	~~9.0~~	~~(3.3)~~	~~(2.2)~~
GBW 07113	0.08	0.66	.	3.5	506	4.09	0.60	(0.15%)	.	0.14	163	.	2.40	7.3	3.34	10.9	8.19	4.31
JR-3	.	.	.	.	65.8	7.6	.	.	.	.	327	.	0.98	3.5	1.0	2.9	.	.

Number	Eu	F%	Fe%	Ga	Gd	Ge	Hf	Hg*	Ho	In	La	Li	Lu	Mg%	Mn%	Mo	Na%	Nb	Nd
CGL 018	0.471	.	.	24.6	11.4	.	14.6	.	1.62	(0.093)	68	47	0.58	.	.	(1.04)	.	75	67.5
JR-2	0.14	0.1109	0.54	17.9	5.83	.	5.14	.	1.39	.	16.3	79.2	0.88	0.02	0.087	3.35	2.96	18.7	20.4
JR-1	0.30	0.0991	0.62	16.1	5.06	1.88	4.51	.	1.11	.	19.7	61.4	0.71	0.07	0.077	3.25	2.98	15.2	23.3
~~US RGM-2 *~~	~~(0.7)~~	~~.~~	~~1.30~~	~~16~~	~~3.6~~	~~.~~	~~(6.0)~~	~~.~~	~~0.0~~	~~.~~	~~25~~	~~(50)~~	~~0.4~~	~~0.17~~	~~(0.0273)~~	~~(2.5)~~	~~3.07~~	~~(9)~~	~~20~~
GBW 07113	1.18	0.13	.	20.5	9.47	1.17	10.8	5	1.64	0.09	82.7	12.7	0.67	.	.	2.46	.	34.3	64.5
JR-3	0.53	.	.	36.6	.	.	40.3	.	.	.	179	.	2.8	.	.	0.49	.	510	107

Number	Ni	P%	Pb	Pr	Rb	S	Sb	Sc	Se	Sm	Sn	Sr	Ta	Tb	Th	Ti%	Tl
CGL 018	(1.1)	.	47	18.5	274	.	(0.16)	2.3	.	14.8	6.2	4.5	4.2	1.7	28.9	.	(1.14)
JR-2	.	0.005	21.5	4.75	303	.	1.51	5.59	.	5.63	3.51	8.11	2.29	1.10	31.4	0.04	1.85
JR-1	.	0.009	19.3	5.58	257	13.3	1.19	5.07	.	6.03	2.86	29.1	1.86	1.01	26.7	0.066	1.56
~~US RGM-2 *~~	~~(4)~~	~~(0.02)~~	~~20~~	~~(5)~~	~~147~~	~~.~~	~~(0.8)~~	~~5~~	~~.~~	~~4~~	~~(4)~~	~~108~~	~~(1)~~	~~(0.6)~~	~~15~~	~~0.15~~	~~(0.9)~~
GBW 07113	64.5	.	33.3	18.4	213	0.009%	0.38	5.15	0.04	11.7	3.35	43.0	2.41	1.51	27.1	.	0.83
JR-3	.	.	32.8	33.1	453	.	.	0.50	.	21.3	17.4	10.4	36.8	4.29	112	.	.

Number	Tm	U	V	W	Y	Yb	Zn	Zr	Units
CGL 018	0.629	3.2	3.4	(1.8)	44.7	4	161	471	100 g
JR-2	0.74	10.9	3.00	.	51.1	5.33	27.8	96.3	20 g
JR-1	0.67	8.88	7.0	1.59	45.1	4.55	30.6	99.9	20 g
~~US RGM-2 *~~	~~.~~	~~5.9~~	~~.~~	~~(2)~~	~~24~~	~~.~~	~~33~~	~~222~~	~~50 g~~
GBW 07113	0.73	4.83	3.8	1.10	42.5	4.51	86.3	403	50 g
JR-3	.	21.1	4.2	.	166	20.3	209	1494	100 g

~~* Provisional Analysis~~

RUTILE

= class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg

#	Number	TiO_2	Ti	Al_2O_3	CaO	Cr_2O_3	Fe	Fe_2O_3	MgO	Nb	Nb_2O_5	P_2O_5	SiO_2	V_2O_5	ZrO_2
1	SRM 670	96.16	.	.	.	0.23	.	0.86	.	.	.	.	0.51	0.66	0.84
1	SARM 166	93.9	.	0.45	0.11	0.122	0.60	.	0.022	.	0.31	0.024	1.90	0.46	1.08
1	IGS 32	.	57.19	.	.	.	.	.	.	(0.27)	.	.	.	.	.

Number	Tot.C	K_2O	MnO	Mn_3O_4	S	Th*	U*	LOI	Units
SRM 670	.	.	.	.	.	.	.	.	90 g
SARM 166	.	(0.061)	0.016	.	.	43.2	(44.2)	(0.35)	100 g
IGS 32	.	.	.	.	.	.	.	.	45 g

CRM SANDSTONE

analysis listed in mass % and * mg/kg

Number	S%	Cu%	Ag*	Re*	Units
KZ 8077-94	0.33	0.11	10.2	0.14	100 g
KZ 8076-94	.	0.036	0.64	0.023	100 g

SANDSTONE WITH EXTENSIVE ANALYSIS

analysis listed in mass %

Number	SiO_2	Al_2O_3	C(org)	C(tot)	CO_2	CaO	F	FeO	T.Fe_2O_3	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	TiO_2	LOI
GBW 07106	90.36	3.52	(0.05)	(0.10)	(0.19)	0.30	0.0183	0.61	3.22	1.01	0.65	0.082	.	0.061	.	.	1.10
UL PRI-1	68.60	10.84	.	.	(2.62)	2.49	(0.0383)	(2.07)	3.32	.	3.79	3.24	0.04	1.71	0.18	0.71	4.99
IAG OU-8	54.120	6.548	.	.	.	16.711	.	.	1.304	.	2.967	1.879	0.138	0.677	.	0.244	15.301

continued analysis listed in mg/kg except * which is ng/g continued analysis listed in mg/kg except * which is ng/g

Number	Ag	As	Au*	B	Ba	Be	Bi	Cd	Ce	Cl	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Ge	Hf
GBW 07106	0.062	9.1	(1.8)	34	143	0.97	0.18	0.060	48	(44)	6.4	20	1.8	19	4.1	2.0	1.02	5.3	4.5	1.16	6.6
UL PRI-1	.	(4.7)	.	(52)	531	1.4	(0.1)	.	82	.	7.4	78	(2.2)	(3.5)	4.3	(2.7)	1.29	(13)	5.3	(<5)	10.7
IAG OU-8	.	.	.	.	528	1.42	(0.043)	.	41.8	.	.	(21.5)	3.23	8.36	2.25	1.59	0.67	6.28	2.32	(1.10)	4.72

Number	Hg	Ho	I	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	P	Pb	Pr	Rb	S	Sb
GBW 07106	0.008	0.75	(0.2)	(0.026)	21	11.1	0.30	155	0.76	5.9	21	16.6	970	7.6	5.4	29	860	0.60
UL PRI-1	.	(1)	.	(<1)	38	.	0.41	.	(0.7)	13	36	21	.	(13)	(9.5)	90	(357)	(0.3)
IAG OU-8	.	0.51	.	.	13.8	10.3	0.26	.	.	(4.46)	12.4	.	.	9.64	3.12	64.6	.	0.22

Number	Sc	Se	Sm	Sn	Sr	Ta	Tb	Te	Th	Ti	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Class	Units
GBW 07106	4.2	0.08	4.7	1.1	58	0.38	0.79	0.038	7.0	1580	0.36	0.32	2.1	33	1.2	21.5	1.9	20	214	CRM	70 g
UL PRI-1	9.7	.	6.6	(2)	88	1	0.85	.	11.3	.	(0.2)	(0.39)	2.5	65	(2.2)	25	2.8	47	386	CRM	50 g
IAG OU-8	(3.63)	.	2.42	.	264.4	0.32	0.36	.	9.5	.	1.01	0.24	0.74	29.8	.	16.0	1.66	.	182.7	RM	~35 g

CRM SCHIST

analysis listed in mass % UL: 50 g units UNS, VS: 100 g units US: 25 g units

Number	SiO_2	Al_2O_3	Ba0	CO_2	CaO	FeO	Fe_2O_3	Fe_2O_3T	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	Sr0	TiO_2	LOI
~~US SDC 1~~	~~65.8~~	~~15.8~~	~~.~~	~~.~~	~~1.40~~	~~3.93~~	~~2.62~~	~~6.32~~	~~.~~	~~3.20~~	~~1.69~~	~~.~~	~~2.05~~	~~0.16~~	~~.~~	~~1.01~~	~~.~~
VS 3191-85	63.40	16.71	.	.	0.09	4.65	.	7.6	.	3.56	2.52	0.13	0.08	0.030	.	1.01	4.54
UNS MI	62.19	14.54	0.10	2.13	1.96	(6)	.	6.41	(12)	2.15	3.28	0.25	3.33	(10)	0.016	0.71	(16)
UL SBO1	55.16	18.24	.	.	1.76	(5.61)	.	7.15	.	3.55	(1.97)	0.18	0.66	0.17	.	0.94	9.67

continued analysis listed in mg/kg

Number	Ag	As	B	Ba	Be	Cd	Ce	Cl	Co	Cr	Cs	Cu	Dy	Er	Eu	F
~~US SDC 1~~	~~.~~	~~0.22~~	~~(13)~~	~~630~~	~~3~~	~~.~~	~~93~~	~~(32)~~	~~18~~	~~64~~	~~4~~	~~30~~	~~(6.7)~~	~~(4.1)~~	~~(1.7)~~	~~600~~
VS 3191-85	.	.	100	950	3.5	.	90	.	27	70	(7)	46	.	.	.	.
UNS MI	(0.006)	(0.007)	(0.005)	.	(0.006)	0.0100	.	.	0.0120	0.1073	.	0.0438	.	.	.	.
UL SBO1	.	(32)	.	549	(3.2)	.	101	.	22	116	(6.8)	33	(5.1)	(3.4)	1.64	.

Number	Ga	Gd	Ge	Hf	Hg	Ho	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	Pb	Pr	Rb	S
~~US SDC 1~~	~~21~~	~~7~~	~~.~~	~~8.3~~	~~(0.2)~~	~~(1.5)~~	~~42~~	~~34~~	~~.~~	~~880~~	~~.~~	~~(21)~~	~~40~~	~~(30)~~	~~25~~	~~.~~	~~127~~	~~.~~
VS 3191-85	(15)	.	(2)	.	.	.	.	(60)	(0.6)	.	(1.6)	16	.	45	15	.	150	.
UNS MI	(0.010)	.	.	.	.	.	.	.	.	.	.	(0.003)	.	0.0372	0.0945	.	0.0539	3300
UL SBO1	(23)	6.2	.	5	.	(1.3)	48	.	0.49	.	.	17	42	60	27	11.1	163	.

Number	Sb	Sc	Sm	Sn	Sr	Ta	Tb	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
~~US SDC 1~~	~~0.54~~	~~17~~	~~0.2~~	~~3.8~~	~~180~~	~~(1.2)~~	~~(1.2)~~	~~12~~	~~(0.7)~~	~~(0.65)~~	~~3.1~~	~~102~~	~~(0.80)~~	~~.~~	~~(4)~~	~~103~~	~~290~~
VS 3191-85	.	22	.	(4)	39	.	.	(12)	.	.	(2)	100	.	48	5	100	230
UNS MI	.	.	.	.	.	.	.	.	.	.	.	0.1052	(0.003)	0.0198	(0.003)	3000	0.1518
UL SBO1	.	17	7.8	.	150	1.4	1	15.2	.	(0.43)	3.1	153	.	32	3.2	82	183

RM SEDIMENT

analysis listed in mass %

Number	Al_2O_3	CO_2	CaO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI	Type
IAG OU-10	10.97	.	2.34	4.92	1.28	1.77	0.120	2.43	0.090	73.12	0.534	(2.20)	Longmyndian Greywacke
IAG UoK	6.2	14.94	16.31	2.1	1.3	2.9	0.0644	1.058	0.13	53.24	0.423	16.03	Loess

analysis listed in mg/kg

Number	As	Ba	Be	Bi	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd
IAG OU-10	.	311	(1.1)	.	(2.8)	(38.0)	12.0	34.0	1.68	22.3	3.65	2.2	1.00	12.0	3.7
IAG UoK	6.7	200.97	1.102	0.1	.	53	5.95	105.7	2.72	11.31	4.02	2.382	0.888	7.087	4.465

Number	Hf	Ho	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Rb	Sb	Sc	Sm	Sr
IAG OU-10	3.3	0.75	18.8	(26.0)	0.34	(0.98)	7.6	18.7	(17.7)	26.9	4.7	35.9	.	11.3	(3.9)	174
IAG UoK	(9.10)	0.80	25.54	21.90	0.37	(1.40)	8.61	24.32	42.71	11.34	6.24	51.2	0.580	(5.93)	5.01	278.5

Number	Ta	Tb	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Units
IAG OU-10	0.56	0.61	5.0	(0.23)	0.34	1.09	77	.	20.5	2.2	54	123	~35 g
IAG UoK	(0.73)	0.687	8.111	0.338	0.339	2.697	(37.56)	(1.45)	23.18	2.420	34.4	.	~60 g

LAKE SEDIMENT - SEQUENTIAL EXTRACTION METHOD

BCR 701, CRM 20g	Cd	Cr	Cu	Ni	Pb	Zn
Step 1	7.34	2.26	49.3	15.4	3.18	205
Step 2	3.77	45.7	124	26.6	126	114
Step 3	0.27	143	55.2	15.3	9.3	45.7
Concentration	(0.13)	(62.5)	(38.5)	(41.4)	(11.0)	(95)

LAKE SEDIMENT WITH ACID EXTRACTION

analysis in mass % except * for mg/kg CRM, powder 20 g

Number	Analysis	Al	As	Ba	Ca	Cd*	Co	Cr	Cu	Fe	K	La
NIES 31	whole material	9.17	(0.00139)	(0.0338)	1.25	(0.342)	(0.00181)	0.00433	0.00531	5.38	(0.991)	(0.00204)
NIES 31	acid extract	.	.	.	.	(0.285)	.	(0.00337)	0.00506	.	.	.

Number	Analysis	Mg	Mn	Na	Ni	P	Pb	Sc	Sr	Ti	V	Zn
NIES 31	whole material	(0.836)	0.0978	0.882	0.00253	0.0925	0.00251	(0.00191)	(0.0125)	0.442	0.0154	0.0121
NIES 31	acid extract	.	0.0881	.	0.00222	.	0.00220	.	.	.	0.0133	0.0110

CRM LAKE SEDIMENT

analysis listed in mass %

Number	Al_2O_3	C	CaO	Fe	FeO	Fe_2O_3	H_2O-	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	S	SiO_2	TiO_2	LOI	Other
JLk-1	16.73	.	0.686	.	2.191	4.251	3.701	6.372	2.805	1.736	0.266	1.051	0.208	0.1052	57.16	0.668	.	T.Fe_2O_3: 6.929
VS 7176-95	14.22	.	7.09	.	3.50	5.39T	(0.22)	.	1.51	3.12	0.12	3.11	0.139	.	62.46	0.76	1.78	CO_2: (0.74)
VS 7126-94	13.57	(2.24)	1.85	.	1.60	7.02T	(2.15)	(4.5)	2.21	2.00	0.40	1.96	0.345	0.165	61.07	0.69	8.34	SO_3: (0.35)
BCR 280R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

continued analysis listed in mg/kg except % which is mass %

Number	Ag	Al%	As	Au	B	Ba	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	F	Ga
JLk-1	.	.	26.8	.	.	574	.	.	.	.	87.9	18.0	69.0	10.9	62.9	6.57	3.59	1.27	589	.
VS 7176-95	(0.04)	.	.	.	(12)	530	(1.3)	.	.	.	(41)	17	158	.	18	.	.	(1.4)	(380)	.
VS 7126-94	(0.17)	.	18	(0.004)	34	710	2.7	.	.	.	80	18	66	6	52	(4.6)	(2.6)	1.4	600	16
BCR 280R	33.4	.	.	.	.	.	.	.	.	0.85	.	16.8	126	.	53	1.46	69	224	.	.

Number	Gd	Ge	Hf	Hg	Ho	K%	La	Li	Lu	Mg%	Mn	Mo	Na	Nb	Nd	Ni	P	Pb	Pr	Rb
JLk-1	6.02	.	3.78	.	1.06	.	40.6	.	0.571	.	.	.	.	15.8	35.7	35.0	.	43.7	8.53	147
VS 7176-95	.	.	.	.	.	.	19	8.5	.	.	.	.	.	10	.	31	.	14	.	39
VS 7126-94	(5.8)	1.4	3.9	(0.03)	(1)	.	45	37	0.40	.	.	2.9	.	12	39	54	.	21	(8)	93
BCR 280R	.	.	.	1.46	.	.	.	.	.	.	.	.	.	.	.	69	.	.	.	.

Number	Sb	Sc	Se	Sm	Sn	Sr	Ta	Tb	Th	Ti	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Units (g)
JLk-1	.	15.9	.	7.87	.	67.5	1.57	1.23	19.5	.	1.17	.	3.83	117	.	40.0	3.99	152	137	20
VS 7176-95	.	19	.	.	3.7	580	.	.	.	.	.	.	.	105	.	24	2.7	64	204	100
VS 7126-94	(0.95)	13	(0.97)	7	3.2	266	0.84	0.9	12.7	.	.	(0.42)	12.0	110	(4.3)	30	2.9	96	156	100
BCR 280R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	224	.	30

CRM ESTUARY AND MARINE SEDIMENT

analysis listed in mg/kg except % which is mass %

Number	Hg	CH_3Hg	Ag	Al%	As	Ba	Be	Ca%	Cd	Ce	Co	Cr	Cu	Fe%	Ga
ERM-CC580	132 tot	0.075	.	.	.	.	.	.	.	.	.	.	.	.	.
~~NMIJ 7302a~~	~~0.52~~	~~.~~	~~0.49~~	~~.~~	~~22.1~~	~~.~~	~~.~~	~~.~~	~~1.32~~	~~.~~	~~12.4~~	~~145~~	~~57.8~~	~~.~~	~~.~~
BCR 277R	0.128	.	.	.	18.3	.	.	.	0.61	.	22.5	188	63	.	.
~~NMIJ 7303a~~	~~0.067~~	~~.~~	~~0.098~~	~~.~~	~~8.6~~	~~.~~	~~.~~	~~.~~	~~0.342~~	~~.~~	~~11.1~~	~~39.1~~	~~23.1~~	~~.~~	~~.~~
SRM 1646a	(0.04)	.	(<0.3)	2.297	6.23	(210)	(<1)	0.519	0.148	(34)	(5)	40.9	10.01	2.008	(5)

Number	K%	La	Li	Mg%	Mn	Mo	Na%	Nd	Ni	P%	Pb	Rb	S%	Sb	Sc	Se
ERM-CC580	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
~~NMIJ 7302a~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~1.98~~	~~.~~	~~.~~	~~25.8~~	~~.~~	~~82.7~~	~~.~~	~~.~~	~~1.22~~	~~.~~	~~0.61~~
BCR 277R	.	.	.	.	.	.	.	.	130	.	.	.	.	.	.	.
~~NMIJ 7303a~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~0.96~~	~~.~~	~~.~~	~~21.8~~	~~.~~	~~31.3~~	~~.~~	~~.~~	~~0.69~~	~~.~~	~~0.24~~
SRM 1646a	0.864	(17)	(18)	0.388	2345	.	0.741	(15)	22.5	0.027	11.7	(38)	0.352	(0.3)	(5)	0.193

Number	Si%	Sn	Sr	Th	Ti%	Tl	U	V	Zn	Units
ERM-CC580	.	.	.	.	.	.	.	.	.	40 g
~~NMIJ 7302a~~	~~.~~	~~18.5~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~401~~	~~60 g~~
BCR 277R	.	.	.	.	.	.	.	.	178	40 g
~~NMIJ 7303a~~	~~.~~	~~4.21~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~107~~	~~60 g~~
SRM 1646a	40.0	(1)	(68)	(5.8)	0.456	(<0.5)	(2)	44.84	48.9	70 g

CRM MARINE SEDIMENT

analysis listed in mass % T = Total

Number	Al_2O_3	C(org)	T.C	CO_3^{2-}	CaO	FeO	Fe_2O_3	T.Fe_2O_3	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	S	SiO_2	TiO_2	LOI
JMs-1	15.82	.	1.69	.	2.13	2.12	4.54	6.90	6.79	2.24	2.87	0.102	4.07	0.18	1.32T	53.74	0.70	15.44
JMs-2	14.18	.	0.39	.	4.68	<0.04	10.96	10.96	7.13	2.70	3.24	2.26	5.79	1.26	0.29T	41.78	1.40	19.15
	Al				Ca			Fe		K	Mg	Mn	Na	P		Si	Ti	
~~SRM 2702~~	~~8.41~~	~~(3.27)~~	~~(3.36)~~	~~.~~	~~(0.343)~~	~~.~~	~~.~~	~~7.91~~	~~.~~	~~2.054~~	~~(0.990)~~	~~0.1757~~	~~0.601~~	~~0.1552~~	~~(1.5T)~~	~~.~~	~~0.884~~	~~.~~
SRM 2703	8.33	.	.	.	(0.31)	.	.	7.38	.	2.08	(1.0)	0.1734	0.693	(0.16)	.	.	0.880	.
NRC MESS-4	7.91	.	(1.79)	.	1.31	.	.	3.79	.	2.38	1.58	0.0298	1.26	0.104	0.158	27.8	0.384	.
NRC PACS-3	6.58	.	.	.	1.89	.	.	4.106	.	1.253	1.402	0.0432	3.52	0.0937	1.17	26.1	0.442	.
NRC HISS-1	0.73	.	.	.	1.14	.	.	0.246	.	0.332	0.075	0.00661	0.373	.	.	(44)	0.076	.
BCR 320R	.	.	.	.	.	.	.	2.5700	.	.	.	0.0910	.	.	.	.	.	.

continued analysis listed in mg/kg except % which is mass % SRM 2703 is intended for small sample techniques <10mg

Number	Ag	As	B	Ba%	Be	Bi	Br	Cd	Ce	Cl%	Co	Cr	Cs	Cu	Dy	Er	Eu
JMs-1	.	18	81	0.0307	1.3	.	.	.	.	2.69	18.1	133	5.9	88	.	.	.
JMs-2	.	35	106	0.1856	1.8	.	.	.	.	4.05	226	78	3.0	447	.	.	.
~~SRM 2702~~	~~(0.622)~~	~~45.3~~	~~.~~	~~0.03974~~	~~(3.0)~~	~~.~~	~~.~~	~~0.817~~	~~123.4~~	~~.~~	~~27.76~~	~~352~~	~~(7.1)~~	~~(117.7)~~	~~.~~	~~.~~	~~.~~
SRM 2703	(0.59)	45.5	.	0.0416	.	.	.	0.811	125.5	.	27.70	.	(7.7)	(120)	.	.	.
NRC MESS-4	0.161	21.7		(0.0920)	2.09	(2.7)	(60)	0.28	(72)	1.31%	13.0	94.3	(10)	32.9	.	.	(1.3)
NRC PACS-3	(1.10)	30.3		.	1.06	.	.	2.23	.	.	(12.1)	90.6	.	326	.	.	.
NRC HISS-1	0.016	0.801	.	.	0.129	.	.	0.024	.	(0.35)	(0.65)	30.0	.	2.29	.	.	.
BCR 320R	.	21.7	.	.	.	.	.	2.64	.	.	9.7	59	.	46.3	.	.	.

Number	Ga	Gd	Hf	Hg	Ho	In	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Rb	Sb	Sc
JMs-1	.	.	.	.	.	0.101	.	62	.	.	.	.	53	49	.	88	1.4	.
JMs-2	.	.	.	.	.	0.178	.	43	.	.	.	.	311	88	.	65	4.5	.
~~SRM 2702~~	~~(24.3)~~	~~.~~	~~(12.6)~~	~~0.4474~~	~~.~~	~~.~~	~~73.5~~	~~(78.2)~~	~~.~~	~~(10.8)~~	~~(63)~~	~~(56)~~	~~75.4~~	~~132.8~~	~~.~~	~~127.7~~	~~5.60~~	~~25.9~~
SRM 2703	.	.	(11.8)	0.474	.	.	75.9	.	.	(11)	(63)	(72)	(75)	130	.	130	5.62	25.95
NRC MESS-4	(18)	Ge:(0.16)	(3.0)	(0.08)	.	(0.10)	(35)	65.3	(0.11)	(2.53)	(12)	(42)	42.8	21.5	.	(180)	1.07	(13.4)
NRC PACS-3	.	.	.	2.98	.	.	.	31.9	.	(5.9)	.	.	39.5	188.0	.	.	14.7	.
NRC HISS-1	.	.	.	(0.01)	.	.	.	2.83	.	(0.13)	.	.	2.16	3.13	.	.	(0.13)	.
BCR 320R	.	.	.	0.85	.	.	.	.	.	.	.	.	27.1	85	.	.	.	5.2

* BUTILYN CONTENT DETAILED ON CERTIFICATES

Number	Se	Sm	Sn	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Units	
JMs-1	.	.	.	154	.	.	0.132	.	.	.	.	127	.	24.3	.	264	132	100 g	
JMs-2	.	.	.	454	.	.	1.38	.	.	.	.	183	.	254	.	166	220	100 g	
~~SRM 2702~~	~~(4.95)~~	~~(10.8)~~	~~31.6~~	~~119.7~~	~~.~~	~~.~~	~~.~~	~~20.51~~	~~0.0267~~	~~.~~	~~(10.4)~~	~~357.6~~	~~(6.2)~~	~~.~~	~~.~~	~~485.3~~	~~.~~	~~50 g~~	
SRM 2703	(4.9)	(10.8)	(32)	(118)	.	.	.	20.22	(0.83)	.	8.99	360	(6.4)	.	.	480	.	5 g	last
NRC MESS-4 *	(1.5)	(5.5)	2.35	132	(1)	.	(0.1)	(12)	0.85	.	3.4	216	(1.3)	(20)	(2)	147	(96)	50 g	Re:(0.004)
NRC PACS-3 *	.	.	22.0	267	.	.	.	.	.	.	(2.6)	129	.	.	.	376	.	50 g	
NRC HISS-1	0.050	.	(0.11)	96.9	.	.	.	(0.06)	.	.	(0.26)	6.80	.	.	.	4.94	.	100 g	
BCR 320R	.	.	.	.	.	.	.	5.3	0.65	.	1.56	46.5	.	.	.	319	.	40 g	

RIVER SEDIMENT

analysis listed in mg/kg except % which is mass % SRM 1944: CRM, 50 g SRM 8704: RM, 50 g

Number	Ag	Al%	As	Au	Ba	Be	Br	C%	Ca%	Cd	Ce	Cl%	Co	Cr	Cs	Cu	Eu	Hf	Hg	Fe
SRM 1944	6.4	5.33	18.9	(0.1)	.	1.6	86	.	1.0	8.8	(65)	1.4	14	266	3	380	(1.3)	.	3.4	3.53%
SRM 8704	.	6.10	(17)	.	413	.	.	3.351	2.641	2.94	66.5	.	13.57	121.9	5.83	.	1.31	8.4	.	3.97%

continued

Number	K%	Mg%	Mn	Na%	Ni	Pb	Rb	Sb	Sc	Se	Si%	Sn	Th	Ti%	Tl	U	V	Zn
SRM 1944	1.6	(1.0)	505	1.9	76.1	330	75	(5)	10.2	1.4	31	42	(13)	0.4300	0.59	(3.1)	100	656
SRM 8704	2.001	1.200	544	0.553	12.9	150	.	3.07	11.26	.	.	.	9.07	0.457	.	3.09	94.6	408

CRM STREAM SEDIMENT

analysis listed in mass % BCR: 40 g JSd 1-3: 20 g Jsd-4: 100 g SARM: 100 g units

Number	SiO_2	Al_2O_3	Org.C	CO_2	CaO	FeO	Fe_2O_3	$T.Fe_2O_3$	H_2O+	H_2O-	K_2O	MgO	MnO	Na_2O	P_2O_5	TiO_2	LOI
JSd-3	76.00	9.908	.	.	0.560	1.161	3.057	4.368	2.838	0.964	1.971	1.17	0.149	0.411	0.0817	0.403	.
JSd-1	66.55	14.65	.	(0.0867)	3.034	1.363	3.526	5.059	(2.301)	0.836	2.183	1.813	0.0924	2.727	0.122	0.643	.
JSd-2	60.78	12.31	.	(0.501)	3.658	5.955	4.552	11.65	2.554	0.451	1.145	2.731	0.120	2.438	0.105	0.614	.
JSd-4	51.12	13.22	.	.	5.57	(2.08)	.	8.06	.	.	1.40	4.04	0.107	2.28	0.45	0.64	.
SARM 46	35.90	6.71	.	.	1.32	(18.0)	28.16	.	.	.	0.35	3.16	1.14	0.28	0.11	0.60	.
BCR 667	**estuary sediment**		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

continued analysis listed in mg/kg except * which is ng/g and % which is mass %

Number	Ag	As	Au*	B	Ba	Be	Bi	Br	Cd	Ce	Cl	Co	Cr	Cs	Cu	Dy	Er	Eu	F	Fe
JSd-3	(3.38)	252	(5.66)	.	462	.	.	.	.	42.0	.	12.7	35.3	30.6	426	2.22	1.07	0.686	3200	.
JSd-1	(0.036)	2.42	(0.64)	.	520	1.40	.	.	.	34.4	.	11.2	21.5	1.89	22.0	2.23	0.906	0.925	306	.
JSd-2	(1.04)	38.6	(54.6)	.	1199	.	.	.	.	23.4	.	48.4	108	1.07	1117	2.86	1.48	0.81	259	.
JSd-4	.	.	.	.	(888)	.	.	.	.	.	.	(21)	(1215)	.	(486)	.	.	.	.	.
SARM 46	.	.	.	.	(180)	.	.	.	.	(110)	.	56	559	566	.	.	.	.	.	.
BCR 667	.	.	.	.	.	.	.	(99.7)	(0.67)	56.7	.	(23.0)	(178)	(7.8)	(60)	4.01	2.35	1.00	.	(44.48)

continued

Number	Gd	Ge	Hf	Hg*	Ho	I	In	La	Li	Lu	Mn	Mo	Nb	Nd	Ni	P	Pb	Pr	Rb	S
JSd-3	.	.	3.21	(254)	.	.	.	19.8	151	0.196	.	.	7.80	15.7	19.6	.	82.1	3.09	285	(399)
JSd-1	2.71	.	3.55	(15.5)	.	.	.	18.1	22.8	0.186	.	.	11.1	17.6	7.04	.	12.9	4.05	67.4	(68)
JSd-2	.	.	2.70	(106)	.	.	.	11.3	(19.2)	0.252	.	11.5	4.56	13.2	92.8	.	146	2.40	26.9	1.31%
JSd-4	.	.	.	.	.	.	.	(16)	(32)	.	.	.	.	.	(114)	.	(240)	.	(57)	.
SARM 46	.	.	.	.	.	.	.	.	.	.	.	(10)	.	.	(125)	.	(1.3)	.	(20)	(0.17%)
BCR 667	4.41	.	.	.	0.80	.	.	27.8	.	0.325	(920)	.	.	25.0	(128)	.	(31.9)	6.1	.	.

continued

Number	Sb	Sc	Se	Sm	Sn	Sr	Ta	Tb	Te	Th	Ti%	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
JSd-3	.	10.5	.	3.26	.	58.7	0.687	0.368	.	7.79	.	.	.	1.66	70.4	.	14.9	1.40	136	124
JSd-1	.	10.9	.	3.48	.	340	0.893	0.431	.	4.44	.	.	.	1.00	76.0	.	14.8	1.18	96.5	132
JSd-2	.	17.5	.	2.68	.	202	.	0.440	.	2.33	.	.	.	1.10	125	.	17.4	1.67	2056	111
JSd-4	.	(17)	.	.	.	(220)	.	.	.	.	.	.	.	.	(152)	.	(21)	.	(1485)	(90)
SARM 46	.	.	.	.	.	25	.	.	.	.	.	.	.	.	225	.	(20)	.	0.59%	101
BCR 667	(0.96)	13.7	(1.59)	4.66	.	.	(0.876)	0.682	.	10.0	.	.	0.326	2.26	.	.	.	2.20	(175)	.

CRM STREAM SEDIMENT

analysis listed in mass % DC730xx: 70 g units

Number	SiO_2	Al_2O_3	C	C.Org	CO_2	CaO	FeO	Fe_2O_3T	H_2O+	K_2O	MgO	Mn	N	Na_2O	P	S	Ti
NCS DC73017	77.42	11.44	(0.25)	0.20	(0.11)	0.85	(0.2)	1.86	(1.0)	3.89	0.18	0.122	0.0218	2.53	0.0234	0.0066	0.151
NCS DC73015	74.33	11.65	(0.46)	(0.08)	(1.34)	2.85	(0.57)	1.79	0.98	2.96	0.71	0.0290	(0.0079)	2.85	0.0335	0.0087	0.146
NCS DC73014	69.40	11.06	(0.48)	0.28	(0.76)	2.96	(1.83)	7.00	2.31	2.35	1.70	0.142	(0.0150)	1.40	0.0568	0.0432	0.32
NCS DC73018	66.02	11.25	1.01	0.34	2.57	3.82	(2.1)	6.31	3.23	2.41	2.34	0.0798	0.0291	0.83	0.0459	0.0110	0.53

continued analysis listed in mg/kg except % which is mass %

Number	Ag	As	B	Ba	Be	Bi	Br	Cd	Ce	Cl	Co	Cr	Cs	Cu	Dy	Er	Eu	F	Ga
NCS DC73017	0.044	4.4	5.5	1054	1.6	0.33	1.0	0.095	32	(30)	12.5	8.4	1.5	3.9	1.3	0.8	0.54	131	12.0
NCS DC73015	0.050	3.6	48	600	3.6	0.48	0.61	0.093	24	33	4.4	21	7.2	7.2	1.7	0.93	0.62	279	12.4
NCS DC73014	0.14	14.3	53	455	2.2	0.51	0.8	0.34	47	53	10.2	61	5.8	132	4.1	2.5	1.20	550	14.6
NCS DC73018	0.092	3.0	14	567	1.9	0.22	1.0	0.12	90	62	19.5	79	4.6	43	6.5	3.7	1.4	664	16.5

Number	Gd	Ge	Hf	Hg	Ho	I	In	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Rb	Sb	Sc
NCS DC73017	1.4	1.21	2.7	0.016	0.26	0.46	(0.014)	11.8	8.1	0.14	0.64	9.5	8.9	4.7	22	2.5	81	0.29	2.1
NCS DC73015	1.7	1.64	2.1	(0.007)	0.33	0.27	0.018	13.9	40	0.16	0.33	5.1	9.8	7.0	31	2.9	118	0.16	4.9
NCS DC73014	4.1	1.87	3.8	0.018	0.83	0.47	0.14	24	20.7	0.42	0.94	9.4	22	18.9	210	5.9	96	1.18	11.4
NCS DC73018	7.0	1.45	7.8	(0.014)	1.27	0.4	0.068	45	43	0.60	0.84	15.3	40	70	19	11.0	121	0.15	16.9

Number	Se	Sm	Sn	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
NCS DC73017	0.072	1.6	(1.0)	167	0.81	0.22	(0.03)	5.4	0.44	0.13	1.1	28	0.58	7.0	0.83	19	100
NCS DC73015	0.053	1.9	2.3	253	0.72	0.29	(0.02)	4.1	0.83	0.16	1.9	31	0.66	9.7	1.0	27	71
NCS DC73014	0.47	4.5	2.5	171	0.65	0.68	(0.05)	8.3	0.91	0.40	2.2	77	2.0	23	2.6	209	132
NCS DC73018	0.24	7.5	1.9	117	1.04	1.14	(0.05)	15.4	0.77	0.59	3.5	120	1.7	34	3.8	74	275

CRM STREAM SEDIMENT

analysis listed in mass % T = total Fe reported

Number	Al_2O_3	Ba	CaO	Cr_2O_3	Cu	FeO	$T.Fe_2O_3$	K_2O	MgO	MnO	Na_2O	P_2O_5	Pb	S	SiO_2	TiO_2	Zn	Zr
SARM 52	9.38	(0.0410)	0.37	0.19	0.0219	(4.0)	19.71	0.25	0.60	0.27	(0.1)	0.09	0.12	(0.02)	57.81	1.30	0.0264	0.0250

continued analysis listed in mg/kg except % for mass %

Number	Ce	Co	Ga	Nb	Ni	Rb	Sr	Th	V	Y	Units
SARM 52	(210)	81	(15)	11	182	20	25	(11)	346	20	100 g

CRM SEDIMENT

analysis listed in mass % 348x series: 100 g units 536x series: 50 g units

Number	SiO_2	Al_2O_3	CO_2	CaO	FeO	Fe_2O_3	T.Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	S	TiO_2	LOI
VS 3486-86	70.54	11.29	.	0.52	.	(3.5)	5.24	2.21	0.48	0.11	1.67	0.28	0.43	0.62	.
VS 5361-90	70.5	11.31	.	0.48	1.3	.	5.24	2.23	0.49	0.105	1.65	0.27	0.44	0.61	5.5
VS 5365-90	60.4	16.49	0.13	0.40	3.3	.	8.80	2.44	1.62	0.132	1.57	0.19	0.03	0.98	6.8
VS 3484-86	51.95	16.76	.	1.13	(2.2)	(3.5)	6.33	2.51	1.53	0.071	1.37	0.18	0.05	0.85	(17.17)
VS 5363-90	51.9	16.65	.	1.11	2.2	.	6.28	2.50	1.54	0.070	1.34	0.19	0.04	0.83	17.1
VS 5362-90	45.4	11.58	.	7.04	1.5	.	4.59	2.96	5.72	0.074	0.85	0.14	0.04	0.63	20.3
VS 3485-86	25.07	5.03	.	17.76	(0.24)	(0.2)	10.59	1.13	11.70	0.50	0.61	1.82	0.05	0.27	(25.14)
VS 5364-90	25.0	4.98	21.6	17.83	0.4	.	10.56	1.13	11.7	0.48	0.63	1.82	0.05	0.26	25.1

continued analysis listed in mg/kg except % which is mass %

Number	Ag	As%	Au	B%	Ba%	Be%	Bi%	Cd	Ce	Co	Cr	Cs	Cu%	F%	Ga	Ge	La%
VS 3486-86	.	.	.	0.016	0.039	0.00036	.	9	.	9	0.0076	.	0.025	.	16	.	0.0032
VS 5361-90	35	0.8	0.11	0.015	0.038	0.004	0.009	9	0.004	9.0	0.0075	17	0.025	0.21	16	15	0.0030
VS 5365-90	.	.	.	0.007	0.055	0.0003	.	.	0.006	29	0.013	4	0.0049	.	17	.	0.0032
VS 3484-86	(0.7)	(0.004)	(0.025)	(0.008)	0.058	0.00023	.	(1.9)	.	18	0.0120	.	0.0052	.	17	.	0.0034
VS 5363-90	0.10	0.004	0.016	0.008	0.050	0.00021	.	.	.	17	0.012	6	0.0050	0.09	17	12	0.0029
VS 5362-90	0.06	.	0.03	0.008	0.050	0.00020	.	.	0.005	13	0.0065	4	0.0044	0.12	12	12	0.0030
VS 3485-86	2.6	(0.009)	1.3	(0.0014)	0.035	0.00025	.	(3.5)	.	11	0.0028	.	0.026	.	9	.	0.026
VS 5364-90	2.3	0.006	1.2	0.0013	0.034	0.0003	0.0006	3	0.05	12	0.0029	4	0.024	0.19	8	16	0.022

Number	Li%	Mo	Nb	Ni	Pb%	Rb%	Sb%	Sc	Sn%	Sr%	V%	W%	Y%	Yb	Zn%	Zr%	Others
VS 3486-86	0.015	.	17	25	0.011	0.019	0.017	8	0.04	0.020	0.006	.	0.0016	2.24	0.039	0.021	
VS 5361-90	0.014	2.7	17	24	0.010	0.019	0.015	8	0.040	0.018	0.0058	0.20	0.0018	2.5	0.039	0.020	
VS 5365-90	0.007	2.1	13	72	0.0024	0.0080	.	18	0.00036	0.013	0.018	.	0.0030	4	0.012	0.021	Nd: 25, Sm: 4
VS 3484-86	0.0012	(3)	60	58	0.0016	0.010	.	15	0.00044	0.020	0.014	.	0.0030	3.2	0.009	(0.018)	
VS 5363-90	0.006	1.1	10	55	0.0015	0.0095	.	16	0.00040	0.019	0.014	.	0.0023	3	0.0086	0.018	
VS 5362-90	0.009	1.0	12	31	0.0014	0.0085	.	11	0.00040	0.025	0.0087	.	0.0020	2.6	0.0054	0.015	
VS 3485-86	0.0020	29	(7)	19	(0.020)	0.004	.	9	0.0004	0.018	0.007	.	0.004	3.3	0.014	0.007	
VS 5364-90	0.0020	27	7	18	0.015	0.0045	.	7	0.00033	0.017	0.0075	0.0025	0.0040	2.9	0.014	0.007	Th: 40

~~CRM SEDIMENT~~

analysis listed in mass % M2: 85 g others: 80 g units

Number	Al_2O_3	Ba	Tot.C	CaO	T.Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	Pb	S	SiO_2	TiO_2	Zn	LOI
~~US SDAR M2~~	~~12.47~~	~~0.0990~~	~~.~~	~~0.84~~	~~2.63~~	~~5.00~~	~~(0.49)~~	~~0.134~~	~~2.50~~	~~(0.079)~~	~~0.0000~~	~~(0.0970)~~	~~73.45~~	~~0.300~~	~~0.0760~~	~~(1.6)~~
~~US SDAR H1~~	~~11.03~~	~~0.0066~~	~~(0.9)~~	~~1.46~~	~~6.45~~	~~4.17~~	~~1.53~~	~~0.515~~	~~(1.1)~~	~~0.105~~	~~0.3090~~	~~.~~	~~65.45~~	~~0.560~~	~~0.3600~~	~~.~~
~~US SDAR L2~~	~~11.50~~	~~0.0009~~	~~(0.1500)~~	~~1.06~~	~~3.63~~	~~4.10~~	~~(0.43)~~	~~0.099~~	~~2.66~~	~~0.080~~	~~0.0183~~	~~.~~	~~74.48~~	~~0.620~~	~~0.0201~~	~~(0.94)~~

continued analysis listed in mg/kg

Number	Ag	As	Be	Bi	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Ge	Hf
~~US SDAR M2~~	~~(15)~~	~~(76)~~	~~6.6~~	~~1.05~~	~~5.1~~	~~98.8~~	~~12.4~~	~~49.6~~	~~1.82~~	~~236~~	~~5.88~~	~~3.58~~	~~1.44~~	~~17.6~~	~~6.28~~	~~(1.5)~~	~~7.29~~
~~US SDAR H1~~	~~(76)~~	~~(396)~~	~~(22)~~	~~(5.1)~~	~~(25)~~	~~89.3~~	~~55.6~~	~~.~~	~~4.78~~	~~1160~~	~~4.41~~	~~2.60~~	~~1.25~~	~~15.6~~	~~5.35~~	~~.~~	~~(6.9)~~
~~US SDAR L2~~	~~(3.2)~~	~~16.9~~	~~3.30~~	~~0.26~~	~~(1.2)~~	~~140~~	~~5.41~~	~~26.0~~	~~1.14~~	~~50.8~~	~~3.83~~	~~5.90~~	~~1.44~~	~~17.0~~	~~3.73~~	~~(1.6)~~	~~(16)~~

Number	Hg	Ho	In	La	Li	Lu	Mo	Nb	Nd	Ni	Pr	Rb	Sb	Sc	Se	Sm	Sn
~~US SDAR M2~~	~~1.44~~	~~1.21~~	~~(2.1)~~	~~46.6~~	~~17.3~~	~~0.54~~	~~13.3~~	~~26.2~~	~~39.4~~	~~48.8~~	~~11.0~~	~~149~~	~~(107)~~	~~4.1~~	~~(2.7)~~	~~7.18~~	~~(2.4)~~
~~US SDAR H1~~	~~(7.3)~~	~~0.900~~	~~(9.5)~~	~~44.3~~	~~50.5~~	~~0.390~~	~~64~~	~~21.3~~	~~36.2~~	~~230~~	~~9.97~~	~~152~~	~~(505)~~	~~(8.2)~~	~~(15)~~	~~6.39~~	~~(2.9)~~
~~US SDAR L2~~	~~(0.33)~~	~~2.08~~	~~(0.47)~~	~~67.9~~	~~11.8~~	~~0.93~~	~~3.66~~	~~63.0~~	~~60.3~~	~~14.3~~	~~16.2~~	~~120~~	~~21.8~~	~~5.6~~	~~(0.9)~~	~~11.5~~	~~(3.2)~~

Number	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb	Zr	Source
~~US SDAR M2~~	~~144~~	~~1.8~~	~~0.97~~	~~(2.1)~~	~~14.2~~	~~(2.8)~~	~~0.54~~	~~2.53~~	~~25.2~~	~~(3.5)~~	~~32.7~~	~~3.63~~	~~259~~	~~**river**~~
~~US SDAR H1~~	~~182~~	~~1.41~~	~~0.78~~	~~(9.5)~~	~~17.7~~	~~11.1~~	~~0.394~~	~~4.07~~	~~73.2~~	~~(13)~~	~~(25.4)~~	~~2.68~~	~~(258)~~	~~**metalliferous**~~
~~US SDAR L2~~	~~150~~	~~3.61~~	~~1.58~~	~~(0.44)~~	~~22.8~~	~~0.99~~	~~0.92~~	~~3.34~~	~~35.8~~	~~(1.72)~~	~~54.6~~	~~6.10~~	~~618~~	~~**blended**~~

CRM CONTAMINATED RIVER SEDIMENT

certified analysis listed in mg/kg informational analysis listed in mass %

Number	As	Cd	Co	Cr	Cu	Hg	Ni	Pb	V	Zn	Al	C.Inorg	C.Org	Ca	Fe	K	Mg	Si	LOI	Units
BAM CC020	56.6	20.8	32.8	290	560	27.4	158	255	53	2030	5.5	0.2	9.7	2.9	5.1	1.7	0.9	25.3	18.5	52 g

CRM TIBET SEDIMENT

analysis listed in mass % T = Total 50 g units

Number	SiO_2	Al_2O_3	Ba	CaO	F	Fe_2O_3T	K_2O	MgO	Mn	MnO	Na_2O	P	P_2O_5	Sr	Ti	TiO_2
NCS DC70318	73.37	12.73	0.0437	1.32	0.0456	3.19	3.56	1.07	0.0422	0.055	2.09	0.0420	0.097	0.0165	0.253	0.422
NCS DC70319	71.23	13.22	0.0470	1.40	0.0459	4.11	3.65	0.70	0.0527	0.069	2.72	0.0484	0.111	0.0256	0.344	0.589
NCS DC70320	70.36	13.95	0.0483	2.40	0.0505	3.20	3.18	0.93	0.0451	0.059	3.26	0.0564	0.129	0.0404	0.274	0.461
NCS DC70313	69.70	13.19	0.0508	0.39	0.0622	5.85	2.56	1.58	0.0876	0.113	1.23	0.0613	0.140	0.00593	0.439	0.725
NCS DC70315	66.50	10.17	0.0384	6.50	0.0539	3.70	2.26	1.14	0.0567	0.074	1.17	0.0501	0.115	0.0132	0.290	0.491
NCS DC70323	60.95	11.89	0.0475	7.77	0.0555	5.47	2.01	0.78	0.0608	0.078	1.09	0.0542	0.124	0.0327	0.339	0.558

contunued analysis listed in mg/kg except * for ng/g and % for mass percent

Number	Ag	As	Au*	B	Be	Bi	Br	Cd	Ce	Cl	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd
NCS DC70318	0.06	18.0	1.4	30.6	3.32	0.49	0.9	0.10	89.6	207	6.7	47.6	20.2	16.2	4.92	2.90	1.07	16.3	5.83
NCS DC70319	0.21	19.6	1.2	66.2	2.31	0.80	1.4	0.19	78.1	244	7.6	22.6	15.0	151	3.91	2.39	0.97	15.8	4.57
NCS DC70320	0.14	12.3	1.1	41.5	2.56	0.70	1.1	0.17	60	152	7.3	24.4	13.0	49.0	2.94	1.64	0.96	16.9	3.74
NCS DC70313	0.09	22.0	1.4	77.0	2.34	0.50	1.0	0.54	74.0	63	17.9	93.8	11.9	27.1	4.73	2.81	1.21	17.8	5.40
NCS DC70315	0.10	22.5	1.6	59.5	2.13	0.46	1.5	0.33	71.3	96.7	9.2	37.5	7.9	16.6	4.40	2.60	1.04	14.1	5.15
NCS DC70323	0.10	54.6	2.9	134	3.88	0.48	1.3	0.08	90.1	71	13.2	59.0	42.5	44.0	5.56	2.98	1.40	17.1	6.58

Number	Ge	Hf	Hg	Ho	I	In	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Pd*	Pr	Pt*	Rb
NCS DC70318	1.33	6.7	0.030	0.97	(0.3)	(0.04)	47.8	36.6	0.44	0.59	14.7	35.8	16.9	35.8	(0.4)	9.78	(0.3)	180
NCS DC70319	1.13	9.5	0.028	0.79	(0.3)	(0.04)	42.6	26.1	0.39	7.0	16.1	30.6	9.5	46.8	(0.3)	8.57	(0.3)	154
NCS DC70320	1.12	5.5	0.012	0.58	(0.3)	(0.04)	32.5	25.6	0.25	2.7	10.5	25.7	11.1	45.4	(0.3)	6.94	(0.3)	136
NCS DC70313	1.34	6.5	0.033	0.95	(0.8)	(0.06)	38.8	53.9	0.41	0.60	15.9	31.1	51.9	61.9	(0.6)	8.33	(0.4)	115
NCS DC70315	1.09	6.0	0.026	0.87	(0.5)	(0.05)	37.0	27.9	0.38	0.83	15.6	29.3	20.1	31.7	(0.4)	8.10	(0.3)	104
NCS DC70323	1.66	6.3	0.066	1.06	(0.5)	(0.07)	42.6	69.8	0.38	0.66	15.5	36.3	37.2	27.7	(0.8)	10.1	(0.6)	110

Number	S	Sb	Sc	Se	Sm	Sn	Ta	Tb	Te	Tm	Th	Tl	U	V	W	Y	Yb	Zn	Zr
NCS DC70318	(48)	0.84	7.3	0.05	6.62	3.8	1.8	0.91	(0.03)	0.46	25.1	1.0	4.8	52.5	4.1	26.5	2.83	54.1	225
NCS DC70319	(480)	2.70	6.2	0.18	5.42	2.7	1.8	0.70	0.10	0.38	25.5	1.1	4.8	74.7	9.3	21.6	2.55	62.9	299
NCS DC70320	(183)	1.27	6.0	0.11	4.49	2.0	1.2	0.54	0.07	0.25	16.7	0.91	3.6	59.4	4.2	15.3	1.63	61.1	184
NCS DC70313	(123)	1.91	12.0	0.16	5.99	14.9	1.2	0.83	0.05	0.43	12.1	0.64	2.6	101	2.6	24.4	2.73	176	222
NCS DC70315	(177)	0.82	7.9	0.12	5.61	3.3	1.3	0.78	(0.03)	0.40	12.3	0.62	2.5	57.4	2.4	23.7	2.55	91.1	206
NCS DC70323	(528)	10.4	10.5	0.39	7.19	4.6	1.2	1.01	0.15	0.44	15.6	0.66	2.1	85.0	6.5	29.5	2.67	77.1	210

CRM SERPENTINITE

analysis listed in mass % T = total GUW: 50 g units all others: 100 g units

Number	Al_2O_3	CO_2	CaO	Cr_2O_3	FeO	Fe_2O_3	H_2O	K_2O	MgO	MnO	Na_2O	Ni	P_2O_5	SiO_2	TiO_2	LOI
NCS DC21001	3.34	.	2.97	.	.	T.Fe:5.47	.	.	34.25	0.131	.	.	P:0.012	41.37	0.180	8.86
SARM 47	1.09	.	(0.1)	0.29	(0.4)	4.14	.	(0.02)	42.09	0.06	(0.05)	0.2221	(0.02)	36.30	(0.01)	.
GUW SW	0.66	0.28	0.18	.	2.00	7.40	13.6	(0.0014)	38.5	0.084	0.013	0.22	(0.0017)	39.04	0.016	.
USZ 24-99	(0.475)	(0.84)	(0.681)	.	(0.27)	8.00T	(0.58-)	(0.018)	38.22	0.082	(0.038)	0.2300	(0.023)	38.54	(0.022)	13.33

continued analysis listed in mg/kg except % which is mass %

Number	As	B	Ba	Ce	Co	Cr%	Cs	Cu	F	Ga	Li_2O	Nd	Pb	Rb	S	Sc	Sn	Sr	U	V	W	Y	Zn
NCS DC21001	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.066%	.	.	.	.	.	.	.	.
SARM 47	.	.	(75)	(20)	79	.	.	(5)	.	(5)	.	.	(60)	.	.	.	.	(3)	.	(16)	.	(5)	45
GUW SW	(5)	37	19	.	102	0.24	(5)	7	66	(4)	(3)	(4)	(6)	(5)	(3)	(5)	(5)	.	(5)	20	(5)	.	58
USZ 24-99	.	.	.	.	106	0.2780	.	.	.	.	.	.	.	.	.	.	.	7.3	0.80	33.4	.	.	39

CRM SHALE WITH EXTENSIVE ANALYSIS analysis listed in mass % * Provisional Analysis

Number	SiO_2	Al_2O_3	CO_2	CaO	FeO	Fe_2O_3	Fe_2O_3T	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	SO_3	TiO_2	ZrO_2+HfO_2	LOI	Units
~~GBW 03104~~	~~69.63~~	~~14.02~~	~~0.13~~	~~0.22~~	~~(0.40)~~	~~5.67~~	~~.~~	~~(3.71)~~	~~3.76~~	~~0.67~~	~~0.024~~	~~0.20~~	~~0.043~~	~~0.028~~	~~0.68~~	~~.~~	~~4.17~~	~~60 g~~
NCS DC60106a	69.34	15.03	0.12	0.19	0.37	5.65	.	(3.73)	3.49	0.64	0.020	0.16	0.043	0.029	0.68	.	4.54	50 g
GUW TS	62.8	15.96	(0.03)	0.12	0.70	7.40	.	4.01	4.86	1.77	0.037	0.078	0.28	.	0.69	.	.	50 g
~~US SCO-2 *~~	~~61.87~~	~~13.13~~	~~.~~	~~3.94~~	~~.~~	~~.~~	~~4.64~~	~~.~~	~~2.45~~	~~2.85~~	~~.~~	~~1.02~~	~~0.181~~	~~0.565~~	~~.~~	~~.~~	~~.~~	~~50 g~~
VS 8549-04	61.21	16.80	1.41	1.14	(3.17)	.	5.57	.	3.72	2.67	0.057	0.95	0.086	(1.53)	0.91	.	6.00	100 g
UL AWI 1	60.46	16.44	.	0.69	(5.52)	7.21	.	.	3.06	(2.09)	0.14	0.74	(0.15)	.	0.92	.	7.75	50 g
GBW 07107	59.23	18.82	(0.10)	0.60	1.39	.	7.60	+5.6	4.16	2.01	.	0.35	.	.	.	.	(5.95)	70 g
VS 8550-04	57.60	15.53	(3.8)	1.06	(5.3)	.	7.47	.	2.85	3.06	0.110	1.28	0.115	.	0.88	.	(9.5)	100 g
SARM 41	56.67	13.50	.	1.50	(0.3)	4.23	.	.	1.39	8.10	0.06	0.93	0.05	.	0.55	.	.	100 g
~~US SBC-1 *~~	~~47.64~~	~~21.0~~	~~.~~	~~2.95~~	~~.~~	~~.~~	~~9.71~~	~~.~~	~~3.45~~	~~2.60~~	~~0.15~~	~~<0.15~~	~~0.37~~	~~.~~	~~0.855~~	~~.~~	~~10.2~~	~~50 g~~
~~US ShPYR 1 *~~	~~28.7~~	~~6.14~~	~~.~~	~~14.9~~	~~Fe.1.75~~	~~.~~	~~2.50~~	~~.~~	~~1.53~~	~~5.23~~	~~.~~	~~1.05~~	~~0.20~~	~~0.22~~	~~.~~	~~.~~	~~.~~	~~200 g~~
~~US SGR 1b~~	~~20.24~~	~~6.52~~	~~.~~	~~0.38~~	~~(1.41)~~	~~(1.46)~~	~~3.03~~	~~.~~	~~1.66~~	~~4.44~~	~~.~~	~~2.99~~	~~0.328~~	~~.~~	~~0.253~~	~~.~~	~~.~~	~~30 g~~
~~US ShBOG 1 *~~	~~25.13~~	~~4.00~~	~~.~~	~~32.95~~	~~.~~	~~.~~	~~1.61~~	~~.~~	~~0.34~~	~~0.42~~	~~0.012~~	~~0.05~~	~~0.099~~	~~.~~	~~0.10~~	~~.~~	~~31.6~~	~~80 g~~
JCRM R651	21.74	71.7	.	0.19	.	1.48	.	.	0.65	0.10	.	0.03	0.19	.	3.15	0.18	0.58	100 g

continued analysis listed in mg/kg except % which is mass % and ** which is ng/g # US SBC-1 also contains 0.85% inorganic C

Number	Ag	As	Au	B	Ba%	Be	Bi	C Org%	T.C%	Cd	Ce	Cl%	Co	Cr	Cs	Cu
~~GBW 03104~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~0.014~~	~~.~~	~~.~~	~~.~~	~~.~~
NCS DC60106a	.	.	.	.	.	.	.	.	.	.	.	0.011	.	.	.	.
GUW TS	(0.8)	27.5	.	74	(0.18)	4	.	1.42	.	.	(168)	.	41	280	13	460
~~US SCO-2 *~~	~~.~~	~~11.0~~	~~.~~	~~.~~	~~0.0500~~	~~1.75~~	~~.~~	~~.~~	~~.~~	~~.~~	~~54.5~~	~~.~~	~~10.0~~	~~60.3~~	~~7.1~~	~~23.5~~
VS 8549-04	0.10	40	0.10	103	0.072	2.0	.	(1.31)	.	(0.27)	58	.	13	128	4.4	34
UL AWI 1	.	(15)	.	.	0.0378	(2.7)	.	.	.	.	80	.	20	119	(7)	34
GBW 07107	0.047	1.4	(1.0**)	154	0.0450	3.0	0.23	(0.16)	(0.19)	0.033	109	0.0041	21	99	14	42
VS 8550-04	0.47	46	2.5	(118)	0.0376	(2.4)	.	(0.93)	.	(0.4)	53	.	20	116	4.0	39
SARM 41	.	.	.	.	0.820	.	.	.	.	.	(60)	.	(15)	123	.	53
~~US SBC-1 *~~	~~.~~	~~25.7~~	~~.~~	~~.~~	~~0.0700~~	~~3.2~~	~~0.7~~	~~1.23#~~	~~2.00~~	~~0.4~~	~~100~~	~~.~~	~~22.7~~	~~109~~	~~0.2~~	~~31~~
~~US ShPYR 1 *~~	~~.~~	~~50~~	~~.~~	~~.~~	~~0.0530~~	~~.~~	~~.~~	~~(13.7)~~	~~(20.1)~~	~~.~~	~~32~~	~~.~~	~~.~~	~~.~~	~~.~~	~~42~~
~~US SGR 1b~~	~~.~~	~~67~~	~~.~~	~~54~~	~~0.0290~~	~~.~~	~~.~~	~~(3.2N)~~	~~(20)~~	~~(0.9)~~	~~36~~	~~(0.0032)~~	~~12~~	~~30~~	~~5.2~~	~~66~~
~~US ShBOG 1 *~~	~~.~~	~~(15.1)~~	~~.~~	~~.~~	~~0.00730~~	~~(1.0)~~	~~(0.24)~~	~~4.61~~	~~11.9~~	~~2.0~~	~~24.0~~	~~.~~	~~6.4~~	~~29.6~~	~~3.1~~	~~33.0~~
JCRM R651	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

~~N = inorganic C~~

Number	Dy	Er	Eu	F	Ga	Gd	Ge	Hf	Hg	Ho	I	In	La	Li	Lu	Mn	Mo
~~GBW 03104~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~
NCS DC60106a	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
GUW TS	.	.	(3.2)	1150	21	.	.	(7)	.	.	.	.	(80)	40	(3.6)	.	130
~~US SCO-2 *~~	~~3.9~~	~~2.3~~	~~1.1~~	~~.~~	~~15.7~~	~~4.4~~	~~.~~	~~.~~	~~.~~	~~0.78~~	~~.~~	~~.~~	~~28.4~~	~~38.2~~	~~0.34~~	~~.~~	~~1.2~~
VS 8549-04	5.6	(3.3)	1.2	(0.12%)	21	6.1	(2.1)	4.1	.	(1.1)	.	.	30	56	0.44	.	1.7
UL AWI 1	5.1	2.9	1.47	.	22	6	.	6.3	.	1.1	.	.	38	.	0.45	.	.
GBW 07107	5.1	2.7	1.7	1290	26	6.7	3.1	2.9	0.010	0.98	0.24	0.082	62	44	0.41	173	0.35
VS 8550-04	(4.4)	(2.4)	1.2	.	18	4.5	(2.1)	4.7	.	(0.92)	.	.	28	50	0.40	.	(0.95)
SARM 41	.	.	.	.	(20)	.	.	.	.	.	.	.	.	.	.	.	(5)
~~US SBC-1 *~~	~~7.1~~	~~3.8~~	~~1.98~~	~~.~~	~~27~~	~~8.5~~	~~.~~	~~3.7~~	~~.~~	~~1.4~~	~~.~~	~~.~~	~~52.5~~	~~163~~	~~0.54~~	~~.~~	~~2.4~~
~~US ShPYR 1 *~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~294~~	~~23~~
~~US SGR 1b~~	~~(1.9)~~	~~1.1~~	~~0.56~~	~~1960~~	~~(12)~~	~~(2)~~	~~.~~	~~1.4~~	~~(0.3)~~	~~(0.4)~~	~~.~~	~~.~~	~~20~~	~~147~~	~~.~~	~~267~~	~~35~~
~~US ShBOG 1 *~~	~~1.67~~	~~0.97~~	~~0.45~~	~~.~~	~~6.27~~	~~1.95~~	~~.~~	~~(1.18)~~	~~.~~	~~0.34~~	~~.~~	~~.~~	~~13.5~~	~~24.1~~	~~0.15~~	~~.~~	~~47.8~~
JCRM R651	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Number	N	Nb	Nd	Ni	P	Pb	Pd	Pr	Pt	Rb	Rh	S%	Sb	Sc	Se	Sm
~~GBW 03104~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~
NCS DC60106a	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
GUW TS	.	(13)	(108)	170	.	33	.	.	.	230	.	0.022	(8.2)	22	.	(22.9)
~~US SCO-2 *~~	~~.~~	~~11.2~~	~~25~~	~~27.0~~	~~.~~	~~20~~	~~.~~	~~6.6~~	~~.~~	~~101~~	~~.~~	~~.~~	~~0.9~~	~~11.4~~	~~.~~	~~4.9~~
VS 8549-04	.	11	28	39	.	8.2	(0.0013)	(6.5)	(0.0012)	0.014%	.	0.62	.	23	.	5.7
UL AWI 1	.	17	37	61	.	(24)	.	9.3	.	130	.	.	.	16	.	7
GBW 07107	540	14.3	48	37	690	8.7	.	13.6	.	205	.	(0.0066)	0.18	18.5	0.075	8.4
VS 8550-04	.	12	25	50	.	14.9	(0.0023)	6.2	(0.0022)	112	(0.001)	1.02	(1)	20	.	5.4
SARM 41	.	(8)	.	122	.	(30)	.	.	.	59	.	(0.15)	.	.	.	.
~~US SBC-1 *~~	~~.~~	~~15.3~~	~~49.2~~	~~82.0~~	~~.~~	~~35~~	~~.~~	~~12.6~~	~~.~~	~~147~~	~~.~~	~~0.715~~	~~1.01~~	~~20~~	~~.~~	~~9.6~~
~~US ShPYR 1 *~~	~~.~~	~~.~~	~~.~~	~~19~~	~~1200~~	~~24~~	~~.~~	~~.~~	~~.~~	~~64~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~
~~US SGR 1b~~	~~.~~	~~(5.2)~~	~~16~~	~~(29)~~	~~.~~	~~38~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~1.33 T~~	~~3.4~~	~~4.6~~	~~(3.5)~~	~~2.7~~
~~US ShBOG 1 *~~	~~.~~	~~(5.6)~~	~~11~~	~~74.9~~	~~.~~	~~(6.1)~~	~~.~~	~~2.94~~	~~.~~	~~16.9~~	~~.~~	~~1.64~~	~~3.20~~	~~(3.6)~~	~~.~~	~~2.1~~
JCRM R651	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Number	Sn	Sr	Ta	Tb	Te	Th	Ti	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
~~GBW 03104~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~	~~.~~
NCS DC60106a	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
GUW TS	(4.1)	88	(0.97)	(2.4)	.	(9.1)	.	.	.	(22)	960	.	150	(15)	63	290
~~US SCO-2 *~~	~~.~~	~~195~~	~~0.82~~	~~0.60~~	~~.~~	~~9~~	~~.~~	~~.~~	~~0.34~~	~~3.2~~	~~117~~	~~.~~	~~23.1~~	~~2.2~~	~~97~~	~~.~~
VS 8549-04	2.2	150	0.86	0.95	.	8.2	.	.	(0.5)	2.1	148	(3.5)	28	2.9	96	176
UL AWI 1	.	108	1.2	0.94	.	12	.	.	0.42	3	134	.	29	3	99	223
GBW 07107	2.0	90	0.9	1.02	(0.023)	12.8	3950	0.71	0.43	1.5	87	0.79	26	2.6	55	96
VS 8550-04	(3.2)	142	(0.7)	(0.74)	.	7.1	.	.	(0.33)	1.65	122	(3.3)	26	2.7	97	176
SARM 41	.	54	.	.	.	(12)	.	.	.	.	139	.	17	.	76	146
~~US SBC-1 *~~	~~3.3~~	~~170~~	~~1.1~~	~~1.2~~	~~.~~	~~15.8~~	~~.~~	~~0.89~~	~~0.56~~	~~5.76~~	~~220~~	~~1.6~~	~~36.5~~	~~3.64~~	~~186~~	~~134~~
~~US ShPYR 1 *~~	~~.~~	~~753~~	~~.~~	~~.~~	~~.~~	~~5~~	~~1300~~	~~.~~	~~.~~	~~4~~	~~92~~	~~.~~	~~.~~	~~.~~	~~62~~	~~.~~
~~US SGR 1b~~	~~(1.9)~~	~~420~~	~~.~~	~~.~~	~~.~~	~~4.8~~	~~.~~	~~.~~	~~(0.18)~~	~~5.4~~	~~130~~	~~2.6~~	~~(13)~~	~~(0.94)~~	~~74~~	~~(53)~~
~~US ShBOG 1 *~~	~~(3.8)~~	~~1070~~	~~.~~	~~0.29~~	~~.~~	~~2.74~~	~~.~~	~~(2.7)~~	~~0.15~~	~~(9)~~	~~419~~	~~.~~	~~9.6~~	~~0.98~~	~~97.8~~	~~52.6~~
JCRM R651	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

~~last~~

~~Sample US ShPYR 1 also shows much more information on the certificate, such as oil yiled, particle size, programmed prolysis and mineralogy.~~

SILLIMANITE

= class, where 1 = CRM and 2 = RM

#	Number	Al_2O_3	SiO_2	CaO	Fe_2O_3	K_2O	Li_2O	MgO	MnO	Na_2O	TiO_2	LOI	Units
2	CERAM 2CAS12	63.8	33.9	0.25	0.31	0.13	.	0.12	.	0.15	1.31	0.13	25 or 100 g
1	BCS 309	61.1	34.1	0.22	1.51	0.46	(0.01)	0.17	(0.03)	0.34	1.92	.	100 g

CRM SILLIMANITE SCHIST

analysis listed in mass % 100 g units

Number	Al_2O_3	CaO	Fe_2O_3	FeO	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2
SARM 44	58.80	0.14	2.06	(1.0)	(0.18)	(0.1)	(0.03)	(0.05)	(0.10)	34.84	1.83

continued analysis listed in mg/kg

Number	Ba	Ce	Co	Cr	Cu	Ga	Mo	Nb	Ni	Pb	Rb	Sr	Th	V	Y	Zn	Zr
SARM 44	(50)	(220)	(8)	384	(10)	(55)	(15)	96	(15)	(30)	13	5	50	395	84	271	406

CRM SILICA ROCK

analysis listed in mass % 50 g

Number	SiO_2	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	TiO_2
NCS DC28016	99.42	0.250	0.045	0.050	0.077	0.0083	0.00074	0.055	0.0015	0.0073
NCS DC28017	98.50	0.596	0.105	0.192	0.130	0.174	0.0030	0.124	0.003	0.013
NCS DC28018	98.50	0.593	0.102	0.188	0.140	0.171	0.0029	0.128	0.004	0.012
NCS DC28019	94.92	2.42	0.043	0.37	1.41	0.042	0.0050	0.32	0.0045	0.0083

CRM SILICEOUS MINERAL SETS

available in SETS/3, as grouped 50 g units

Number	Material	SiO_2	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	S	TiO_2	LOI
JCRM R702	**Albite**	67.69	19.64	0.546	0.058	0.137	0.103	0.004	11.31	0.139	.	0.030	0.23
JCRM R703	**Potassium Feldspar**	66.99	17.93	0.095	0.082	11.02	0.040	0.003	3.32	0.008	.	0.005	0.36
JCRM R803	**Prophylite**	68.52	23.95	0.033	0.047	2.32	0.017	0.0014	0.165	0.018	0.02	0.104	4.40
JCRM R604	**Gairome Clay**	47.88	35.37	0.216	1.357	0.468	0.251	0.006	0.083	0.020	(0.014)	0.865	13.37
JCRM R605	**Kaolin**	49.77	35.64	0.004	0.283	(0.008)	0.004	.	0.032	0.105	(0.023)	0.068	13.90
JCRM R751	**Pottery Stone**	79.32	14.15	0.033	0.340	(3.00)	0.049	0.003	0.121	0.009	(0.0010)	0.010	2.73

Also see our Industrial Materials catalog for more Siliceous Materials
http://www.brammerstandard.com/pdf/industrial.pdf

CRM SILT

analysis listed in mass %

Number	SiO_2	Al_2O_3	Co_2	CaO	FeO	$T.Fe_2O_3$	K_2O	MgO	MnO	Na_2O	P_2O_5	S	TiO_2	L.O.I.	Units
VS 5366-90	60.9	14.35	2.4	2.95	1.9	5.44	3.58	2.54	0.088	2.33	0.18	0.08	0.62	6.5	50 g
VS 3133-85	60.85	14.40	.	2.95	.	5.45	3.56	2.54	0.087	2.33	0.18	(0.10)	0.62	6.39	100 g
VS 3132-85	60.54	16.46	.	0.41	.	8.76	2.43	1.60	0.13	1.61	0.19	(0.027)	0.98	6.78	100 g
VS 3131-85	47.0	9.48	.	7.76	.	5.92	2.26	6.06	0.30	0.53	0.13	(0.037)	0.50	20.10	100 g
VS 5367-90	46.7	9.45	9.8	7.74	1.1	5.88	2.24	6.0	0.30	0.53	0.13	0.03	0.50	20.0	50 g

continued analysis listed mass %

Number	As	B	Ba	Ce	Cr	Cu	Li	Ni	Rb	Sb	Sr	V	Zn	Zr
VS 5366-90	0.04	0.007	0.09	0.007	0.008	0.019	0.0035	0.0036	0.011	0.013	0.027	0.011	0.0094	0.023
VS 3133-85	(0.043)	0.006	0.091	0.008	0.0088	0.019	0.0037	0.0036	0.012	(0.0015)	0.028	0.011	0.009	0.023
VS 3132-85	(0.0038)	0.007	0.057	(0.006)	0.014	0.0048	0.00716	0.0072	0.0077	(0.00019)	0.013	0.018	0.012	0.022
VS 3131-85	(0.0016)	0.007	0.062	(0.006)	0.0068	0.0037	0.0096	0.0040	0.0061	.	0.025	0.011	0.005	0.013
VS 5367-90	.	0.008	0.059	0.005	0.0062	0.0037	0.009	0.0040	0.0062	.	0.025	0.0097	0.0049	0.013

continued analysis listed in mg/kg

Number	Ag	Be	Cd	Co	Cs	Ga	Ge	La	Mo	Nb	Nd	Pb	Sc	Sm	Sn	W	Y	Yb
VS 5366-90	.	4	.	13	5	18	.	55	6.5	11	30	55	12	5	5	12	25	2.9
VS 3133-85	(0.8)	3.7	(1.5)	13	5.8	16	1.4	61	10	17	.	58	17	.	5	.	26	3.3
VS 3132-85	(0.17)	2.8	(0.2)	30	4.1	16	1.6	43	2.5	13	.	23	20	.	3.9	.	30	4.3
VS 3131-85	(0.2)	2.4	(2.3)	21	4	11	(1.2)	(38)	2.4	11	.	20	11	.	5	.	22	(2.8)
VS 5367-90	.	2.1	.	21	3.2	11	.	35	2.1	9	15	17	10	3	3.6	.	21	3

CRM SILVER ORE

analysis listed in mass % except * which is mg/kg USZ: 250g KZ: 100g SRM: 200g

Number	Ag*	Ba	Cu	Fe	Fe_2O_3	Pb	S	SO3	Zn	Al_2O_3	As	Bi	CO_2	CaO	Cd	Co*	F	Ge*
USZ 9-92	740	.	2.25	.	.	0.041	.	.	0.20	.	.	.	.	.	.	.	.	.
USZ 8-91	331	.	0.83	.	48.40	0.13	.	6.85	0.59	2.11	0.53	0.11	.	0.25	0.0020	.	.	.
USZ 7-91	169	.	0.46	.	.	0.101	.	.	0.42	.	.	.	.	.	0.0015	.	.	.
KZ 6587-93	60.2	33.6	0.019	2.5	.	2.86	11.5	.	2.72	.	0.016	.	.	.	0.012	.	.	.
KZ 3031-84	37.4	.	3.37	15.17T	.	.	2.78	.	.	4.93	.	.	2.87	28.05	.	.	0.056	.
KZ 6586-93	19	0.38	0.013	2.03	.	3.5	0.55	.	0.045	.	.	.	.	.	.	.	.	.
KZ 6588-93	13.7	0.42	.	3.67	.	1.57	5.88	.	4.68	.	.	.	.	.	0.013	.	.	4.4
KZ 47-85	8.7	.	0.42	21.0	.	.	2.70	.	.	.	.	.	.	.	.	.	.	.
KZ 3030-84	8.6	.	.	13.84T	.	.	2.04	.	.	10.85	.	.	1.04	18.94	.	.	0.048	.
SRM 886	8.25	.	.	.	.	.	1.466	.	.	.	.	.	.	.	.	.	.	.
KZ 48-85	7.3	.	1.98	15.9T	.	.	1.94	.	.	5.47	.	.	2.73	29.75	.	.	0.054	.
KZ 8079-94	3.7	.	0.73	.	.	0.62	1.25	.	0.41	.	.	.	.	.	0.016	.	.	.
KZ 3029-84	2.1	.	0.30	3.11T	.	.	1.59	.	.	15.18	.	.	.	.	.	.	0.074	.
KZ 8078-94	1.6	.	0.38	.	.	0.21	0.75	.	0.15	.	.	.	.	.	0.0036	.	.	.

continued

Number	K_2O	MgO	MnO	Mo	Na_2O	Ni	P_2O_5	Re*	Sb	Se*	SiO_2	Sr	Te*	TiO_2	Zr
USZ 9-92	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
USZ 8-91	0.53	1.48	2.77	.	.	.	0.54	.	0.50	.	17.80	.	.	0.12	.
USZ 7-91	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
KZ 6587-93	.	.	.	.	.	.	.	.	0.013	.	.	0.69	.	.	.
KZ 3031-84	0.26	1.33	0.33	0.18	0.18	.	.	0.40	.	13.1	33.56	.	9.1	0.19	.
KZ 6586-93	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.019
KZ 6588-93	.	.	.	.	.	.	.	.	0.0066	.	.	0.029	.	.	.
KZ 47-85	.	.	.	0.012	.	.	.	.	.	.	.	.	.	.	.
KZ 3030-84	0.48	2.06	0.41	0.38	0.16	.	0.17	0.30	.	.	42.32	.	.	0.54	.
SRM 886	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
KZ 48-85	0.13	0.66	0.36	.	0.10	.	0.11	0.04	.	5.7	33.77	.	.	0.147	.
KZ 8079-94	.	.	.	.	.	.	.	0.29	.	.	.	.	.	.	.
KZ 3029-84	4.06	.	0.081	0.0086	1.95	.	0.094	0.043	.	.	68.09	.	.	0.42	.
KZ 8078-94	.	.	.	.	.	.	.	0.072	.	.	.	.	.	.	.

SLATE WITH EXTENSIVE ANALYSIS

= class, where 1 = CRM and 2 = RM analysis listed in mass %

#	Number	SiO_2	Al_2O_3	CO_2	CaO	FeO	Fe_2O_3	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	S	TiO_2	LOI
1	GUW TB2	60.4	20.5	.	0.20	5.4	6.95T	3.6+	0.86	1.86	0.047	1.29	0.095	.	0.93	3.46
1	GUW TB	60.23	20.64	0.14	.	5.43	6.90	3.78+	3.87	(1.93)	(0.052)	1.32	0.097	.	0.93	.
1	JSl-1	59.47	17.60	(0.769)	1.479	4.523	1.875	+3.92 -0.654	2.845	2.413	0.0599	2.184	0.202	.	0.725	.
1	JSl-2	59.45	18.17	(1.236)	1.885	5.048	0.959	+4.158 -0.362	3.008	2.385	0.0818	1.344	0.164	0.1467	0.754	.
2	IAG OU-6	57.35	20.45	(0.23)	0.74	(1.65)	8.94T	(0.14-)	3.03	2.41	0.28	1.76	0.12	.	0.99	3.62

continued analysis listed in mg/kg

Number	As	Ba	Be	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	F	Ga	Gd	Hf	Ho	La	Li	Lu
GUW TB2	.	649	.	.	14	92	11	49	.	.	.	.	.	.	.	.	.	109	.
GUW TB	10.5	780	4.1	104	14	82	9	49	1.8	.	.	740	25	.	5	.	61	111	0.45
JSl-1	14.9	305	2.28	60.6	15.5	60.9	7.60	40.8	(5.11)	.	1.22	598	.	.	4.63	0.688	29.3	(50.7)	0.442
JSl-2	11.4	302	2.68	69.6	15.7	64.7	8.24	44.5	4.71	.	1.14	678	.	.	5.54	(0.671)	32.7	52.6	0.404
IAG OU-6	13.23	480	(2.53)	77.1	29.2	70.7	8.10	40.4	5.06	2.93	1.36	.	24.17	5.30	4.70	1.04	33.2	(95.3)	0.45

Number	Nb	Nd	Ni	Pb	Pr	Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb	Th	Tl	Tm
GUW TB2	.	.	39	.	.	185	.	.	.	5	159	.	.	.	.	.
GUW TB	.	50	40	8	.	180	3.4	16	8.4	6	160	1.4	.	18	.	.
JSl-1	9.53	28.8	37.6	17.4	6.07	117	.	16.7	6.02	.	193	0.842	0.717	9.97	.	.
JSl-2	12.3	32.0	40.6	19.7	(6.44)	118	.	16.8	5.95	.	230	1.04	0.727	11.5	.	.
IAG OU-6	14.49	30.2	40.2	28.80	7.91	121.3	(0.56)	23.1	6.01	2.67	131.7	1.02	0.86	11.3	(0.54)	(0.45)

Number	U	V	Y	Yb	Zn	Zr	Units
GUW TB2	.	96	.	3.8	94	180	50 g
GUW TB	.	107	39	3.3	94	180	50 g
JSl-1	2.63	131	30.0	2.81	108	174	100 g
JSl-2	2.92	122	31.3	3.15	101	191	100 g
IAG OU-6	1.92	129.8	27.75	2.98	111.4	174.2	~35 g

B: 0.0090% W: 0.00022%

CRM SOIL - AQUA REGIA METHOD

certified analysis listed in mg/kg

Number	As	Cd	Co	Cr	Cu	Hg	Mn	Ni	Pb	Zn	Units	Method Used
BAM U110 *	13.0	7.0	14.5	190	262	49.3	580	95.6	185	990	60 g	ISO 11466

informational analysis listed in mass %

Number	Si	Al	Ca	Fe	K	S	Mg	Dry Matter	LOI	Org.C	Inorg.C	Tot.C	H	N
BAM U110 *	25.7	5.1	4.1	2.8	1.9	1.1	1.0	97.3 @ 105'C	13.3 @ 550'C	6.7	0.8	7.5	1.2	0.4

* BAM U110 spectroscopic analysis also certified, see "Soil - Contaminated"

CRM MERCURY IN SOIL

analysis listed in mass % except * which is mg/kg — 30 or 50 g

Number	Hg*	Al_2O_3	C	CaO	Fe_2O_3T	K_2O	MgO	MnO	N	Na_2O	S	SiO_2	TiO_2	Dry Mass
USZ 305	2.75	(13.38)	(1.31)	(4.02)	(4.95)	(2.88)	(2.10)	(0.104)	(0.085)	(1.63)	(0.071)	(61.89)	(0.659)	(98.90%)
USZ 304	1.52	(11.96)	(1.42)	(4.55)	(4.22)	(2.85)	(1.79)	(0.082)	(0.075)	(1.99)	(0.093)	(64.11)	(0.605)	(99.21%)
USZ 303	0.157	(13.10)	(1.19)	(3.39)	(4.68)	(2.98)	(1.68)	(0.097)	(0.088)	(1.84)	(0.021)	(64.39)	(0.65)	(99.05%)

CRM AGRICULTRURAL SOIL

analysis listed in mass % except * which is mg/kg — 50 g units

Number	C	C.Org	Al_2O_3	$T.Fe_2O_3$	Ti	K_2O	MgO	CaO	N	Na_2O	P	S	SiO_2	Mn	Ag*	As*	B*	Ba*
NCS ZC71020	3.85	2.10	14.34	12.09	1.78	1.61	0.906	0.541	0.268	0.187	0.141	0.117	53.61	0.0560	0.093	14.9	63	184
NCS ZC71021	2.02	1.12	14.26	6.59	0.570	3.25	1.12	0.377	0.211	0.168	0.106	0.0437	63.8	0.120	0.155	83	106	531
NCS ZC71022	1.37	0.710	17.68	9.77	0.618	2.25	1.09	0.483	0.158	0.146	0.0704	0.0327	55.9	0.675	0.16	55.7	77	471
NCS ZC71023	0.66	0.368	14.08	4.81	0.372	2.57	1.54	2.15	0.623*	3.216	0.0811	0.0160	66.9	0.0594	0.094	4.45	23.3	733
NCS ZC71024	1.60	0.84	13.26	4.42	0.431	2.66	1.29	1.67	0.129	1.99	0.0613	0.0677	66.9	0.0820	1.07	30.0	44.6	783
NCS ZC71025	1.81	0.995	14.15	5.37	0.435	2.45	1.76	1.98	0.170	2.47	0.152	0.0379	63.1	0.0848	0.399	9.88	34.9	765

continued analysis in mg/kg

Number	Be	Bi	Br	Cd	Ce	Cl	Co	Cr	Cu	Dy	Er	Eu	F	F.Sol	Ga	Gd	Ge	Hg	Ho
NCS ZC71020	3.40	0.483	4.6	0.57	116	51	32.8	152	98	8.8	4.6	2.80	878	2.29	23.1	9.7	1.59	0.249	1.72
NCS ZC71021	2.57	0.611	4.2	1.47	98	52	19.9	86.1	32.6	5.4	3.22	1.25	960	2.3	19.3	5.4	1.62	12.2	1.13
NCS ZC71022	3.83	0.85	4.0	12.1	107	42	23.9	106	52.2	7.6	4.23	1.87	883	1.91	25.8	8.0	1.89	0.395	1.53
NCS ZC71023	1.78	0.173	2.86	0.130	59.3	104	13.8	82.8	25.2	3.48	1.97	1.24	485	6.1	16.9	4.11	1.21	0.029	0.692
NCS ZC71024	2.11	2.38	9.0	26.2	77.8	410	13.4	61	63.1	4.42	2.57	1.32	503	10.9	16.6	5.11	1.54	4.64	0.88
NCS ZC71025	2.09	1.06	5.5	1.99	71.7	140	16.3	95.2	54.2	4.33	2.44	1.4	521	6.2	18.0	5.01	1.27	0.309	0.86

Number	I	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Rb	Sb	Sc	Se	Sm	Sn	Sr
NCS ZC71020	1.85	60	56	0.61	3.62	52	57	77.7	26.3	14.3	55	1.36	22.2	1.42	11.1	3.60	96
NCS ZC71021	1.96	45	52.1	0.51	2.37	19.7	34.8	38.1	248	9.5	131	6.3	13.4	0.659	6.4	3.94	80.3
NCS ZC71022	4.85	55.6	67	0.64	2.87	21.3	48	56.1	215	12.8	147	2.2	17.8	0.598	9.3	4.62	42.2
NCS ZC71023	1.63	31.1	21.8	0.305	0.69	11.8	27.8	29.9	19.7	7.33	87.1	0.41	10.8	0.143	5.06	2.22	343
NCS ZC71024	2.54	41.5	35.1	0.404	14.1	14.3	34.3	26.8	182	9.66	99	2.87	9.8	0.75	6.06	4.53	196
NCS ZC71025	2.59	38.2	31.9	0.364	1.35	13.8	33.4	38.3	53.9	8.85	97.7	1.95	11.9	0.451	6.03	5.22	267

Number	Tb	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
NCS ZC71020	1.58	11.5	0.43	0.68	6.1	289	1.51	45.2	4.2	185	369
NCS ZC71021	0.92	18.5	1.42	0.51	4.74	112	2.37	29.3	3.26	201	278
NCS ZC71022	1.31	19.7	1.15	0.66	5.91	175	2.87	40.8	4.2	941	277
NCS ZC71023	0.632	8.0	0.528	0.306	1.49	81.4	1.02	18.0	1.93	62.7	278
NCS ZC71024	0.79	11.4	0.865	0.395	2.26	79	3.28	23.3	2.54	100	335
NCS ZC71025	0.781	9.8	0.625	0.367	2.06	91	2.06	22.7	2.36	159	219

CRM SOIL

analysis listed in mass % 100 g units

Number	Al_2O_3	CaO	$T.Fe_2O_3$	K_2O	MgO	MnO	Na_2O	P_2O_5	S	SiO_2	TiO_2	LOI
JSo-1	17.99	2.56	11.49	0.34	2.11	0.202	0.66	0.48	.	38.28	1.23	.
USZ 15-94	14.66	2.49	5.65	2.49	1.52	0.103	3.06	0.154	(0.03)	63.28	0.87	(5.22)
USZ 16-94	14.41	2.49	4.99	2.60	1.45	0.109	3.10	0.16	(0.02)	64.37	0.86	(4.81)

continued analysis listed in mg/kg

Number	As	B	Ba	Be	Bi	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Hg	Ho	In
JSo-1	.	(12)	(269)	.	.	.	.	(32)	(71)	(1.5)	(169)	.	.	.	.	.	.	.	.
USZ 15-94	9.46	.	657	2.17	(0.32)	(0.13)	67.84	14.01	68.88	(3.74)	29.40	(4.43)	(2.61)	(1.43)	(17.92)	(5.54)	(0.02)	(0.96)	(0.07)
USZ 16-94	6.51	.	658	2.44	(0.27)	(0.14)	71.79	(12.88)	357.36	(3.86)	20.51	(4.86)	(2.88)	(1.45)	(17.47)	(5.94)	(0.03)	(1.02)	(0.06)

Number	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb	Th
JSo-1	.	(11.2)	.	.	.	.	(39)	(13)	.	(14.5)	.	.	.	.	(196)	.	.	.
USZ 15-94	(33.9)	(23.09)	(0.31)	1.11	(12.21)	(32.46)	31.55	17.26	(8.5)	80.49	(1.09)	11.18	(6.08)	(2.55)	387	(1.19)	(0.75)	8.69
USZ 16-94	(35.12)	22.59	(0.37)	1.03	13.31	(34.61)	43.09	17.88	(9.1)	84.38	(0.78)	11.33	(6.97)	(2.66)	387	(1.17)	(0.78)	9.71

Number	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
JSo-1	.	.	.	(300)	.	(24.9)	.	(105)	(96)
USZ 15-94	(0.42)	(0.32)	1.84	97	(1.36)	22.15	(2.58)	74.67	(298)
USZ 16-94	(0.47)	(0.35)	2.25	87.30	(1.53)	24.43	(2.84)	72.83	(388)

CRM SOIL SET

available in SET/6 ONLY analysis listed in mg/kg% 25 g units

Number	As	Cd	Cr	Hg	Pb	Se
JSAC 0466	1093	1199	1483	113.5	1214	1175
JSAC 0465	550	607.4	738	57.8	612.4	587
JSAC 0464	271.1	301.0	499	28.6	302.7	291.9
JSAC 0463	137.6	146.8	244	14.76	151.6	141.5
JSAC 0462	71.5	74.2	149.6	7.27	73.7	71.6
JSAC 0461	21.53	(0.30)	97.2	0.075	24.4	(0.44)

CRM SOIL (TILL) REFERENCE MATERIALS WITH ACID EXTRACTION

analysis listed in mass % 100 g units

Number	SiO_2	Al_2O_3	CaO	Fe	Fe_2O_3	K_2O	MgO	Mn	MnO	Na_2O	P	P_2O_5	S	Ti	TiO_2	LOI 1000'C	LOI 500'C	Sum
CAN TILL-3	69.1	12.2	2.63	2.78	3.92	2.42	1.71	0.0520	0.06	2.64	0.0490	0.11	<0.05	0.2910	0.49	4.6	3.6	99.88
CAN TILL-1	60.9	13.7	2.72	4.81	6.82	2.22	2.15	0.1420	0.18	2.71	0.0930	0.22	<0.05	0.5990	0.98	7.3	6.3	99.90
CAN TILL-2	60.8	16.0	1.27	3.84	5.39	3.07	1.83	0.0780	0.10	2.19	0.0750	0.17	<0.05	0.5300	0.88	8.1	6.8	99.80

continued analysis in mg/kg except % for mass percent and * for parts per billion

Number	As	Au*	Ba	Be	Bi	Br	Ce	Co	Cr	Cs	Cu	Eu	Er	Hf	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Rb	Sb	Sc
CAN TILL-3	87	6	489	2.0	<5	4.5	42	15	123	1.7	22	<1.0	1.4	8	21	21	0.2	2	7	16	39	26	55	0.9	10
CAN TILL-1	18	13	702	2.4	<5	6.4	71	18	65	1.0	47	1.3	3.6	13	28	15	0.6	2	10	26	24	22	44	7.8	13
CAN TILL-2	26	2	540	4.0	<5	12.2	98	15	74	12.	150	1.0	3.7	11	44	47	0.6	14	20	36	32	31	143	0.8	12

continued

Number	Sm	Sr	Ta	Tb	Th	U	V	W	Y	Yb	Zn	Zr
CAN TILL-3	3.3	300	<0.5	<0.5	4.6	2.1	62	<1	17	1.5	56	230
CAN TILL-1	5.9	291	0.7	1.1	5.6	2.2	99	<1	38	3.9	98	502
CAN TILL-2	7.4	144	1.9	1.2	18.4	5.7	77	5	40	3.7	130	390

partial extraction elements from dilute acid

Number	Ag	Co	Cu	Fe%	Mn	Mo	Ni	Pb	Zn
CAN TILL-3	49	10	23	2.2	310	1	32	17	43
CAN TILL-1	<0.2	12	49	3.4	1020	1	17	14	71
CAN TILL-2	12	12	152	3.4	570	13	30	24	116

continued partial extraction elements from concentrated acid

Number	Ag	As	Ba	Bi	Cd	Co	Cr	Cu	Fe%	Hg*	Mn	Mo	Ni	Pb	V	Zn
CAN TILL-3	1.6	84	43	<3	<0.2	11	73	23	2.0	107	310	<2	32	16	33	43
CAN TILL-1	0.2	13	84	<3	<0.2	12	30	48	3.1	92	950	<2	18	12	48	70
CAN TILL-2	0.2	22	95	4	0.3	13	40	149	3.2	74	530	11	31	21	38	116

last

CRM SOIL

analysis listed in mass % 100 g units

Number	Type	SiO_2	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	TiO_2	As	B
VS 2498-83	Sandy, Turf-Ash	91.24	3.36	0.27	0.99	1.23	0.13	0.011	0.51	0.036	0.29	0.0003	0.003
VS 2499-83	Sandy, Turf-Ash	91.24	3.36	0.27	0.99	1.23	0.13	0.011	0.51	0.036	0.29	0.0017	0.003
VS 2507-83	Black	71.49	9.81	1.60	3.48	2.42	0.95	0.079	0.81	0.18	0.74	0.0008	0.0056
VS 2508-83	Black	71.49	9.81	1.60	3.48	2.42	0.95	0.079	0.81	0.18	0.74	0.0021	0.0056
VS 2509-83	Black	71.49	9.81	1.60	3.48	2.42	0.95	0.079	0.81	0.18	0.74	0.004	0.0056
VS 2501-83	Red	59.18	17.01	0.17	7.86	0.98	0.92	0.051	0.15	0.10	1.56	0.0010	0.006
VS 2502-83	Red	59.18	17.01	0.17	7.86	0.98	0.92	0.051	0.15	0.10	1.56	0.003	0.006
VS 2503-83	Red	59.18	17.01	0.17	7.86	0.98	0.92	0.051	0.15	0.10	1.56	0.005	0.006
VS 2504-83	Grey	52.65	11.48	11.47	4.60	2.09	2.99	0.089	1.64	0.17	0.64	0.0013	0.0063
VS 2505-83	Grey	52.65	11.48	11.47	4.60	2.09	2.99	0.089	1.64	0.17	0.64	0.0029	0.0063
VS 2506-83	Grey	52.65	11.48	11.47	4.60	2.09	2.99	0.089	1.64	0.17	0.64	0.006	0.0063

continued analysis listed in mass % except * which is mg/kg

Number	Ba	Be*	Cd*	Ce	Co	Cr	Cs*	Cu	F	Ga*	Hg*	La*	Li	Mo*
VS 2498-83	0.031	1.1	0.1	0.0017	0.00020	0.010	1.6	0.0009	.	5	0.03	10	0.00035	1.5
VS 2499-83	0.031	10	1.3	0.0017	0.0045	0.010	1.6	0.010	.	5	0.13	10	0.00035	7
VS 2507-83	0.050	2.0	0.10	0.007	0.0009	0.0083	4	0.0025	0.028	11	0.05	36	0.0023	1.2
VS 2508-83	0.050	9	1.8	0.007	0.0046	0.0083	4	0.011	0.028	11	0.21	36	0.0023	6
VS 2509-83	0.050	24	4.5	0.007	0.013	0.0083	4	0.027	0.028	11	0.4	36	0.0023	11
VS 2501-83	0.027	1.6	0.12	0.007	0.0014	0.018	9	0.0047	0.04	15	0.08	30	0.005	3
VS 2502-83	0.027	10	2.6	0.007	0.0063	0.018	9	0.017	0.04	15	0.26	30	0.005	8
VS 2503-83	0.027	25	5	0.007	0.015	0.018	9	0.031	0.04	15	0.4	30	0.005	13
VS 2504-83	0.050	2.2	0.3	0.006	0.0012	0.0084	5	0.0034	0.05	13	0.025	29	0.0032	1.4
VS 2505-83	0.050	8	2.1	0.006	0.0057	0.0084	5	0.012	0.05	13	0.18	29	0.0032	6
VS 2506-83	0.050	26	5.5	0.006	0.015	0.0084	5	0.029	0.05	13	0.4	29	0.0032	13

Number	Nb*	Ni	Pb	Rb*	S	Sc*	Se*	Sn	Sr	V	Y*	Yb*	Zn	Zr
VS 2498-83	12	0.0010	0.0008	32	.	2.6	(0.8)	0.00019	0.0069	0.0014	13	1.5	0.0010	0.035
VS 2499-83	12	0.0087	0.0087	32	.	2.6	(0.8)	0.0019	0.0069	0.0014	13	1.5	0.014	0.035
VS 2507-83	14	0.0032	0.0018	88	0.05	11	(3)	0.0003	0.011	0.0072	31	4.1	0.0056	0.047
VS 2508-83	14	0.011	0.009	88	0.05	11	(3)	0.0020	0.011	0.0072	31	4.1	0.018	0.047
VS 2509-83	14	0.030	0.026	88	0.05	11	(3)	0.006	0.011	0.0072	31	4.1	0.046	0.047
VS 2501-83	25	0.0054	0.0023	80	0.04	15	(3)	0.0005	0.005	0.018	27	3.6	0.0087	0.034
VS 2502-83	25	0.016	0.015	80	0.04	15	(3)	0.0022	0.005	0.018	27	3.6	0.027	0.034
VS 2503-83	25	0.038	0.028	80	0.04	15	(3)	0.006	0.005	0.018	27	3.6	0.061	0.034
VS 2504-83	13	0.0045	0.0017	81	0.04	14	(1)	0.0004	0.031	0.009	26	3.3	0.0070	0.019
VS 2505-83	13	0.013	0.010	81	0.04	14	(1)	0.0020	0.031	0.009	26	3.3	0.017	0.019
VS 2506-83	13	0.032	0.028	81	0.04	14	(1)	0.006	0.031	0.009	26	3.3	0.039	0.019

CRM SOIL

analysis listed in mass %

Number	Si	Al	Ca	Fe	K	Mg	Mn	N	Na	P	Ti	Units
GBW 08302	30.57	7.11	2.59	3.34	2.12	1.53	0.0677	0.128	1.52	0.086	0.40	15 g
BCR 142R	.	.	.	.	.	.	0.0970	.	.	.	.	40 g
ERM-CC690	.	.	.	.	.	.	.	.	.	.	.	70 g

continued analysis listed in mg/kg except % which is mass %

Number	As	B	Ba	Be	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Hf	Hg	In	La	Lu
GBW 08302	3.8	(25)	(509)	2.96	(1.3)	0.081	83.6	13.1	60.8	(7.3)	24.6	(5)	(239)	1.4	(13)	.	(7.3)	(0.018)	(0.06)	41.9	(0.48)
BCR 142R	.	.	.	.	.	0.34	.	12.1	(113)	.	69.7	.	.	.	.	.	.	0.067	.	.	.
ERM-CC690	.	.	.	.	.	.	49.1	.	.	.	.	2.90	.	.	.	3.2	.	.	.	24.4	.

Number	Mo	Nd	Ni	Pb	Pr	Rb	Sb	Sc	Se	Sm	Sr	Ta	Tb	Th	Tm	U	V	W	Y	Yb	Zn
GBW 08302	(0.8)	42.3	31.1	14.2	(9)	135	(0.4)	10.8	0.16	7.1	163	(1.1)	(0.9)	17.6	.	3.84	77.5	(3.5)	(25)	3.1	58
BCR 142R	.	.	64.5	40.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	(101)
ERM-CC690	.	19.1	.	.	.	.	.	7.9	.	3.5	.	.	0.50	7.6	0.232	1.90	.	.	.	1.57	.

CRM SOIL

analysis listed in mass % 70 g units

Number	Al_2O_3	C(tot)	CaO	CO_2	C.Org	T.Fe_2O_3	FeO	H_2O+	K_2O	MgO	Mn	N	Na_2O	P	S	SiO_2	Ti	LOI
NCS DC73319a	12.9	7.8	2.7	.	(6.8)	4.4	(2.25)	(4.3)	2.85	1.17	0.131	0.32	1.65	0.23	0.0726	56.6	0.326	15.8
NCS DC73320a	11.7	1.37	4.0	2.4	0.71	4.2	(0.78)	2.8	3.03	1.40	0.092	0.075	2.67	0.0512	0.0316	65.9	0.28	5.8
NCS DC73321a	12.9	0.69	0.84	.	0.65	2.6	(0.55)	2.6	2.91	0.61	0.033	0.085	2.54	0.042	(0.0146)	72.9	0.22	3.7
NCS DC73322a	16.9	0.46	(0.13)	.	0.42	6.9	(0.43)	6.3	3.00	1.33	0.030	0.073	(0.1)	0.031	0.0130	63.3	0.46	(6.97)
NCS DC73323a	16.8	(0.2)	(0.07)	.	(0.2)	9.8	(0.19)	7.0	2.14	0.70	0.051	0.059	(0.1)	0.0353	0.0839	61.5	0.61	7.2
NCS DC73324a	26.6	0.23	0.13	.	(0.2)	12.3	(0.1)	12	0.44	0.20	0.23	0.021	(0.14)	0.024	0.0534	45.3	0.43	(13.22)
NCS DC73325a	27.3	1.3	(0.2)	.	1.18	18.0	(1.46)	13.6	0.35	0.31	0.19	0.13	(0.1)	0.21	0.0432	33.7	2.06	15.3
NCS DC73326a	11.8	1.91	7.5	5.3	0.50	4.3	1.23	3.4	2.30	2.00	0.063	0.06	1.71	0.068	0.0187	60.1	0.37	8.9

analysis listed in mg/kg

Number	Ag	As	B	Ba	Be	Bi	Br	Cd	Ce	Cl	Co	Cr	Cs	Cu	Dy	Er	Eu	F	Ga	Gd
NCS DC73319a	0.81	33	69	700	3.3	1.4	4.1	2.5	71	(87)	10.3	44	7.2	42	6.0	3.8	0.89	513	18.1	5.5
NCS DC73320a	0.072	18	27	1187	2.6	0.29	4.6	0.2	123	(51)	11.1	52	4.7	20	4.5	2.5	1.8	723	14.8	6.2
NCS DC73321a	0.075	6.2	21	1117	1.7	0.21	3.8	0.079	45	(73)	6.9	35	3.2	13.4	2.8	1.7	0.8	354	15.7	3.1
NCS DC73322a	0.059	9.6	88	312	2.4	1.8	2.8	0.11	99	(30)	20	81	12.5	43	4.4	2.5	1.2	1127	23	5.5
NCS DC73323a	4.6	242	108	343	1.8	23	(1.5)	0.16	85	(31)	18	113	18	147	5.1	3.2	1.0	601	25	4.5
NCS DC73324a	0.24	88	28	181	6.9	89	(1.1)	(0.5)	85	110	20	86	9.4	358	5.4	3.7	0.39	1526	40	4.2
NCS DC73325a	0.08	(4.2)	(19)	237	2.9	(0.37)	6.4	(0.23)	113	(54)	93	379	2.9	84	5.7	2.4	3.0	341	39	8.3
NCS DC73326a	0.067	13.2	51	492	2.0	0.31	3.7	0.14	68	68	12.3	65	7.3	24	4.9	2.7	1.2	555	15.1	5.5

Number	Ge	Hf	Hg	Ho	I	In	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Rb	Sb	Sc	Se
NCS DC73319a	1.3	6.5	0.31	1.3	2.0	0.12	39	28	0.57	2.0	15.3	30.8	16.9	339	8.5	137	2.4	8.3	0.22)
NCS DC73320a	1.2	6.3	0.017	0.9	2.6	0.048	61	22	0.38	1.6	35	55	24	27	14.8	95	0.86	9.5	0.26
NCS DC73321a	1.2	7.1	0.116	0.58	2.5	0.033	21	18	0.28	0.5	10.6	19	15	28	4.9	85	0.69	5.6	0.12
NCS DC73322a	1.7	6.9	0.072	0.85	4.0	0.095	54	27	0.40	0.70	16.1	40	36	37	11.2	152	1.4	15.9	0.31
NCS DC73323a	2.3	8.3	0.7	1.1	2.8	1.4	35	51	0.49	2.3	20	27	38	245	7.3	142	14.9	16.9	0.75
NCS DC73324a	6.2	6.5	0.086	1.1	13.2	4.1	31	43	0.80	169	38	20	75	478	5.6	118	14	17	0.47
NCS DC73325a	1.5	8.9	0.058	1.0	19.0	0.11	56	23	0.30	3.2	80	47	217	18.3	11.7	28	0.53	25	0.34
NCS DC73326a	1.3	6.9	0.027	0.98	1.6	0.053	35	33	0.042	0.76	13.1	31	30	21	8.0	96	1.2	11.5	0.098

Number	Sm	Sn	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
NCS DC73319a	5.9	9.8	192	1.3	0.98	(0.06)	13.1	1.2	0.61	6.3	61	3.5	38	3.8	475	218
NCS DC73320a	7.9	2.0	249	(0.86)	0.89	(0.037)	13.3	0.63	0.38	1.9	65	1.9	25	2.5	58	219
NCS DC73321a	3.5	2.6	325	1.2	0.50	(0.04)	6.7	0.51	0.28	1.2	45	1.1	16	1.8	39	247
NCS DC73322a	6.8	5.6	58	1.4	0.84	(0.085)	19	1.0	0.4	3.0	125	2.9	23	2.6	92	234
NCS DC73323a	4.5	7.2	39	1.6	0.80	6.6	17.2	1.1	0.5	4.0	136	7.4	29	3.2	172	272
NCS DC73324a	4.7	439	30	16	0.84	(0.5)	35	3.6	0.7	28	108	132	33	5.2	1529	156
NCS DC73325a	9.3	5.0	37	5.7	1.2	(0.06)	10.5	0.3	0.33	2.6	240	2.3	25	2.0	187	370
NCS DC73326a	6.0	2.9	197	1.1	0.86	(0.034)	12.2	0.57	0.43	2.3	80	1.8	26	2.8	66	241

CRM SOIL

analysis listed in mass % T = Total 100 g units

Number	Type	SiO_2	Al_2O_3	CO_2	CaO	Cr_2O_3	FeO	$T.Fe_2O_3$	K_2O	MgO	MnO	Na_2O	P_2O_5	S	TiO_2	LOI
NCS DC85112	Agricultural	83.34	8.89	.	(0.16)	.	.	1.34	0.65	(0.20)	0.015	(0.038)	0.124	(0.014)	0.22	4.86
VS 5360-90	Sod-Pozolic	78.3	9.58	.	0.82	.	0.5	3.00	2.48	0.77	0.070	1.15	0.075	0.03	0.84	2.6
SARM 42	Sedimentary	74.09	10.03	.	0.89	0.63	(4.0)	4.68	0.45	1.92	0.10	(0.15)	(0.03)	(0.02)	0.36	.
NCS DC85111	Agricultural	69.68	14.58	.	(0.22)	.	.	5.21	1.08	0.54	0.029	(0.090)	0.122	(0.014)	0.96	7.52
VS 5358-90	Light Chestnut	65.5	12.45	1.2	2.83	.	.	4.90	2.58	1.95	0.090	1.16	0.22	0.03	0.74	6.7
NCS DC85107	Agricultural	65.37	15.06	.	1.68	.	.	4.98	2.72	1.62	0.094	2.48	0.120	(0.013)	0.74	4.83
NCS DC85108	Agricultural	63.06	12.76	.	4.57	.	.	4.49	2.43	2.01	0.077	1.69	0.162	(0.017)	0.68	7.71
NCS DC85110	Agricultural	61.03	16.21	.	0.84	.	.	6.20	2.45	1.90	0.050	0.99	0.098	(0.033)	0.92	9.01
NCS DC85109	Agricultural	53.72	14.74	.	7.93	.	.	5.72	2.72	2.09	0.106	0.99	0.197	(0.019)	0.65	11.17

continued analysis listed in mg/kg except % which is mass %

Number	Ag	B%	Ba%	Be	C%	Ce%	Co	Cr%	Cs	Cu	F%	Ga	Ge	La	Li
NCS DC85112	.	(0.0020)	.	.	.	.	.	.	.	2.8	.	.	.	.	.
VS 5360-90	0.08	0.004	0.051	1.5	0.55	0.005	10	0.008	0.21	18	0.021	9	.	35	16
SARM 42	.	.	(0.0250)	.	.	(0.0030)	35	.	.	17	.	(12)	.	.	.
NCS DC85111	.	0.0071	.	.	.	.	.	.	.	32	.	.	.	.	.
VS 5358-90	0.12	0.007	0.046	2.1	1.7	0.006	14	0.014	4	30	0.034	13	1.6	38	28
NCS DC85107	.	0.0034	.	.	.	.	.	.	.	24	.	.	.	.	.
NCS DC85108	.	0.0054	.	.	.	.	.	.	.	25	.	.	.	.	.
NCS DC85110	.	0.0065	.	.	.	.	.	.	.	42	.	.	.	.	.
NCS DC85109	.	0.0075	.	.	.	.	.	.	.	29	.	.	.	.	.

Number	Mo	Nb	Ni	Pb	Rb	Sc	Sn	Sr%	Th	V%	Y	Yb	Zn	Zr%
NCS DC85112	1.15	.	.	.	.	.	.	.	.	.	.	.	22	.
VS 5360-90	0.8	20	25	15	78	9	2.6	0.0012	.	0.0064	27	4	42	0.053
SARM 42	(5)	(8)	125	(10)	22	.	.	0.0037	(5)	0.0094	11	.	44	0.0192
NCS DC85111	1.47	.	.	.	.	.	.	.	.	.	.	.	81	.
VS 5358-90	1.0	15	58	17	87	13	3.4	0.016	.	0.011	27	3	73	0.030
NCS DC85107	0.80	.	.	.	.	.	.	.	.	.	.	.	67	.
NCS DC85108	(0.82)	.	.	.	.	.	.	.	.	.	.	.	68	.
NCS DC85110	0.73	.	.	.	.	.	.	.	.	.	.	.	93	.
NCS DC85109	1.53	.	.	.	.	.	.	.	.	.	.	.	96	.

CRM SOIL WITH EXTENSIVE ANALYSIS

analysis listed in mass % Org = Organic Sol = Soluble T = Total 50 g units

Number	Al_2O_3	C	Org.C	CaO	F	T.Fe_2O_3	K_2O	MgO	Mn	N	Na_2O	P	S	SiO_2	Ti	Zn
NCS ZC71008	10.31	7.90	4.73	15.0	0.0532	4.83	1.628	1.24	0.0648	0.281	0.709	0.0887	0.111	43.85	0.315	0.0201
NCS ZC71009	15.41	2.81	2.75	1.000	0.0566	5.24	1.78	0.932	0.0438	0.276	1.00	0.0660	0.0502	62.54	0.493	0.0221
NCS ZC71010	13.17	2.45	2.36	1.085	0.0520	4.97	1.732	0.973	0.0517	0.218	1.19	0.0833	0.0447	66.9	0.476	0.0230
NCS ZC71011	9.45	1.11	1.07	0.412	0.0353	3.89	1.45	0.512	0.0424	0.120	0.475	0.0420	0.0364	77.1	0.571	0.00897
NCS ZC71012	15.30	0.62	0.59	1.420	0.0762	9.06	3.11	0.783	0.0725	0.0613	1.11	0.106	0.301	61.5	0.410	0.0260
NCS ZC71013	16.27	1.29	1.12	1.28	0.128	7.23	2.62	1.223	0.117	0.154	0.35	0.0863	0.0222	61.5	0.546	0.0117
NCS ZC71014	11.77	1.56	1.04	3.65	0.0450	3.68	2.39	1.85	0.0503	0.107	2.17	0.105	0.0238	67.41	0.330	0.00644
NCS ZC71015	11.94	1.23	1.18	1.22	0.0504	6.37	3.17	1.53	0.104	0.126	1.52	0.110	0.0470	67.4	0.495	0.0269
NCS ZC71016	12.57	2.66	2.23	3.73	0.0757	4.78	2.74	3.76	0.0864	0.243	2.21	0.339	0.0644	59.7	0.397	0.0302
NCS ZC71017	18.52	1.61	0.91	0.376	0.0547	4.74	2.65	0.609	0.0498	0.170	0.605	0.125	0.0308	61.8	0.536	0.0133
NCS ZC71018	12.34	1.44	0.79	0.414	0.0441	5.98	1.79	1.34	0.0417	0.149	0.470	0.0607	0.0281	69.52	0.492	0.0261
NCS ZC71019	10.52	0.84	0.468	1.51	0.0440	6.54	2.46	0.697	0.297	0.0693	0.428	0.0430	0.0468	72.28	0.306	0.0224

Number	Ag	As	B	Ba	Be	Bi	Br	Cd	Ce	Cl	Co	Cr	Cu	Dy	Er	Eu	Sol.F
NCS ZC71008	0.56	22.5	41	448	2.15	1.68	4.5	2.02	67	94	13.4	70	76	4.13	2.36	1.14	8.3
NCS ZC71009	0.44	83.4	60	502	2.62	47.8	6.0	14.2	83	69	14.4	92	69.8	5.63	3.15	1.48	8.7
NCS ZC71010	0.91	12.5	66	480	2.32	0.58	5.2	0.276	79	119	13.7	78.2	104	5.53	3.1	1.44	6.8
NCS ZC71011	0.259	41.9	92	351	1.55	1.99	1.8	0.276	87	45	13.4	59.0	69	5.04	2.99	1.16	1.89
NCS ZC71012	7.5	222	50	713	1.75	6.0	1.8	0.62	70.2	52	9.17	27.5	301	3.23	1.79	1.44	1.53
NCS ZC71013	0.128	19.3	70	386	2.79	0.62	4.55	0.398	87	34	23.9	87.0	53.1	5.41	3.16	1.4	4.3
NCS ZC71014	0.088	8.8	38.2	592	1.75	0.259	5.2	0.238	56.5	91	10.1	60.6	21.7	3.79	2.19	1.12	7.2
NCS ZC71015	5.4	398	64.1	713	1.90	10.9	4.5	2.14	70	74	15.0	65.3	76	4.59	2.64	1.36	8.7
NCS ZC71016	0.46	13.8	29.8	863	1.99	0.559	5.1	2.71	73.8	98	12.5	60.0	244	3.87	2.11	1.41	3.3
NCS ZC71017	0.162	6.2	26.2	515	3.70	0.77	3.93	0.293	135	74	11.7	39.9	56.3	6.7	3.68	1.69	5.1
NCS ZC71018	1.61	349	65	511	2.12	3.29	2.83	2.58	83	54	16.1	215	244	4.39	2.55	1.21	2.2
NCS ZC71019	2.21	8.9	11.5	521	2.25	9.6	2.1	0.636	61	52	8.74	43.5	74	3.43	2.04	0.87	3.9

Number	Ga	Gd	Ge	Hg	Ho	I	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Rb	Sb
NCS ZC71008	13.2	4.55	1.33	0.205	0.83	2.77	36.7	38.4	0.361	4.28	11.5	28.7	28.7	92	7.7	78	3.4
NCS ZC71009	19.5	6.15	1.61	0.62	1.12	2.19	45.5	46.7	0.459	1.1	17.0	37.8	40.9	372	10.0	114	22.1
NCS ZC71010	16.7	6.03	1.48	3.44	1.09	1.58	42.7	41.1	0.456	0.63	16.4	36.9	34.7	153	9.9	101	2.03
NCS ZC71011	12.6	5.27	1.35	0.074	1.02	1.11	42.3	29.9	0.45	1.40	19.5	34.2	19.2	42.4	9.3	72	1.62
NCS ZC71012	21.5	4.20	1.35	0.087	0.63	1.37	40.3	18.7	0.272	26.4	14.8	29.1	9.9	340	8.0	109	27.3
NCS ZC71013	21.8	5.8	1.72	0.133	1.12	3.54	43.0	49.0	0.49	1.42	18.1	37.1	43.9	40.9	9.9	129	2.08
NCS ZC71014	14.2	4.20	1.22	0.052	0.76	2.72	30.5	23.9	0.339	0.54	10.9	26.1	23.9	23.2	7.0	85.6	0.69
NCS ZC71015	15.5	5.04	1.4	0.101	0.92	2.38	36.5	33.3	0.406	1.30	16.5	32.0	29.9	1050	8.46	98.1	6.3
NCS ZC71016	16.0	4.77	1.27	0.061	0.76	2.73	39.5	23.7	0.314	2.53	13.1	33.3	22.8	50.9	8.9	85.1	0.84
NCS ZC71017	24.2	7.8	1.4	0.157	1.26	1.79	69.8	25.1	0.57	2.49	24.2	53	17.2	60	14.9	154	0.72
NCS ZC71018	15.8	4.8	1.69	0.231	0.90	1.96	46	43.3	0.396	2.67	18.9	33.3	90.6	166	9.3	99	7.8
NCS ZC71019	14.7	3.65	2.09	0.085	0.70	2.86	32.7	21.6	0.340	7.3	19.4	24.5	10.9	467	6.9	127	0.59

Number	Sc	Se	Sm	Sn	Sr	Tb	Th	Tl	Tm	U	V	W	Y	Yb	Zr
NCS ZC71008	10.0	1.96	5.40	7.6	236	0.74	11.0	1.26	0.363	3.19	86.6	4.6	23.7	2.3	169
NCS ZC71009	15.4	1.86	7.03	27.9	99.3	0.99	15.0	1.28	0.479	2.93	112	2.56	30	3.01	232
NCS ZC71010	12.6	0.44	6.95	54	103	0.97	13.5	0.65	0.47	2.64	95.1	2.31	29.1	2.95	270
NCS ZC71011	9.3	0.412	6.20	5.1	72.1	0.85	13.5	0.536	0.461	2.86	81.4	3.13	28.1	2.92	377
NCS ZC71012	7.3	2.82	5.08	10.0	260	0.606	9.9	0.977	0.274	3.19	91	4.63	16.7	1.76	222
NCS ZC71013	16.2	0.52	6.7	11.0	120	0.93	14.6	0.94	0.49	3.73	132	2.28	28.8	3.13	212
NCS ZC71014	9.4	0.259	4.92	2.63	262	0.667	8.1	0.558	0.337	1.46	66.4	1.39	20.4	2.17	246
NCS ZC71015	10.8	0.62	5.92	2.95	163	0.81	9.9	0.598	0.408	2.07	88	3.25	23.9	2.61	296
NCS ZC71016	9.7	0.495	5.78	2.3	304	0.710	7.52	0.699	0.321	1.93	76.1	2.57	20.1	2.05	247
NCS ZC71017	12.2	0.45	9.4	9.1	80	1.22	36.7	1.25	0.54	10.1	100	3.92	34.5	3.6	304
NCS ZC71018	11.5	1.19	5.88	5.6	79	0.76	15.7	0.83	0.394	4.27	96	6.7	22.4	2.5	276
NCS ZC71019	7.2	2.02	4.5	20.3	74	0.60	13.9	1.06	0.326	3.14	55	8.7	17.8	2.2	287

CRM SOIL - CONTAMINATED

certified analysis listed in mg/kg T = Total

Number	As	B	Be	Cd	Co	Cr	Cu	F	Hg	Mn	Ni	Pb	Se	V	Zn	Type	Units
BAM U110 *	15.8	.	.	7.3	16.2	230	263	.	51.5	621	101	197	.	.	1000		60 g
JSAC 0411	11.3	.	1.04	0.274	.	23.5	26.7	.	.	943	11	18.9	1.32	68.6	64.6	Volcanic Ash Soil	50 g
JSAC 0401	10.62	.	5.28	4.25	.	50.4	15.3	.	.	266	18.9	26	0.27	65.0	66.8	Brown Forest Soil	50 g

* Aqua Regia values for BAM U110 listed under "Soil - Aqua Regia Method" in this catalog

CRM SOIL - CONTAMINATED

analysis listed in mass % except as noted powder 75 g

Number	Hexavalent Cr	Cr	Fe	Mn	Al	Tot.Org.C	Ca	K	Mg	Na	Si	Ti	V	PH	Redox Potential
SRM 2701	0.05512	4.26	23.73	0.2137	(5.05)	(3.69)	(7.47)	(0.174)	(7.47)	(0.255)	(4.17)	(0.547)	(0.236)	9.6	(526 mV)

CRM SOIL - CYANIDE

analysis in mg/kg powder

Number	Total Cyanide	Uncertainty	Units	
BAM U114	23.1	1.3	66 g	last of stock

SOIL - CONTAMINATED

= class where 1 = CRM and 2 = RM analysis listed in mg/kg except % which is mass % CETEM: 80 g all others: 50-55 g units

# Number	Ag	Al%	As	Au	B	Ba	Be	Bi	Br	C%	Ca%	Cd	Ce	Co	Cr	Cs	Cu	Dy
2 SRM 2780a	72.5	8.43	65.9	6.6	(27)	930	(1.1)	(45)	.	(0.19)	0.247	(4.8)	67.7	16.5	205	8.3	240	(3.1)
1 SRM 2710a	(40)	5.95	1,540	(0.2)	(20)	792	.	.	.	.	0.964	12.3	(60)	5.99	(23)	(8.25)	342	(3)
1 IRNT SVM **	(4)	(8.96)	13.6	.	(70)	582	(500)	.	(5)	.	(0.692)	0.214	(100)	15.4	79.8	(6)	30.0	(5)
1 IRNT SSP **	(5)	(7.48)	14.0	.	.	315	.	.	.	.	6.34	0.285	.	15.6	75.3	.	30.9	.
~~1 SRM 2709a~~	~~.~~	~~7.37~~	~~(10.5)~~	~~.~~	~~(74)~~	~~979~~	~~.~~	~~.~~	~~.~~	~~.~~	~~1.91~~	~~0.371~~	~~(42)~~	~~12.8~~	~~130~~	~~(5.0)~~	~~(33.9)~~	~~(3)~~
1 SRM 2586	.	6.652	8.7	.	.	413	(1.4)	.	.	.	2.218	2.71	58	(35)	301	.	(81)	(5.4)
1 SRM 2587	.	5.86	13.7	.	.	568	(9.2)	.	.	.	0.927	1.92	(57)	(14)	92	.	(160)	.

continued

Number	Er	Eu	Fe%	Ga	Gd	Ge	Hf	Hg	Ho	In	K%	La	Li	Lu	Mg%	Mn%	Mo
SRM 2780a	(2.0)	(0.9)	8.75	(21)	(3.2)	(<6)	(5.5)	(0.2)	(0.7)	(1.65)	3.99	34.4	(14)	(0.33)	0.465	0.0490	25.0
SRM 2710a	.	(0.82)	4.32	.	(3.0)	.	(7)	9.88	.	.	2.17	30.6	.	(0.3)	0.734	0.214	.
IRNT SVM **	.	(2)	3.73	.	(7)	.	(10)	0.171	.	.	3.08	(60)	(30)	(500)	(0.593)	0.0897	.
IRNT SSP **	.	.	3.73	.	.	.	.	0.0874	.	.	2.63	.	.	.	(1.19)	0.0734	.
~~SRM 2709a~~	~~.~~	~~(0.83)~~	~~3.36~~	~~.~~	~~(3.0)~~	~~.~~	~~(4)~~	~~(0.9)~~	~~.~~	~~.~~	~~2.11~~	~~(21.7)~~	~~.~~	~~(0.3)~~	~~1.46~~	~~0.0529~~	~~.~~
SRM 2586	(3.3)	(1.5)	5.161	(14)	(5.8)	.	.	0.367	(1.1)	.	0.976	29.7	(25)	.	1.707	0.1000	.
SRM 2587	.	.	2.813	(13)	.	.	.	0.29	.	.	1.583	(29)	(32)	.	0.6690	0.0651	.

continued

Number	Na%	Nb	Nd	Ni	P%	Pb%	Pr	Rb	Re	S%	Sb	Sc	Se	Si%	Sm	Sn	Sr
SRM 2780a	0.108	(20)	28.3	95	0.0286	0.665	(8)	220	(0.003)	8.85	18.3	15.6	(6)	24.1	4.7	(7.2)	121
SRM 2710a	0.894	.	(22)	(8)	0.105	0.552	.	(117)	.	.	52.5	(9.9)	(1)	31.1	(4.0)	.	255
IRNT SVM **	(0.3)	.	(50)	30.8	(0.000013)	0.00196	.	(200)	.	.	4.58	(15)	(300)	25	(10)	.	(82.0)
IRNT SSP **	.	.	.	37.4	.	0.00413	.	.	.	.	2.11	.	.	.	.	.	274
~~SRM 2709a~~	~~1.22~~	~~.~~	~~(17)~~	~~(85)~~	~~0.0688~~	~~0.00173~~	~~.~~	~~(99)~~	~~.~~	~~.~~	~~1.55~~	~~(11.1)~~	~~(1.5)~~	~~30.3~~	~~(4)~~	~~.~~	~~239~~
SRM 2586	0.468	(6)	26.4	(75)	0.1001	0.0432	(7.3)	.	.	.	.	(24)	(0.6)	29.15	(6.1)	.	84.1
SRM 2587	1.127	(14)	(25)	(36)	0.0970	0.3242	.	.	.	.	.	(11)	.	33.13	.	.	126

continued

Number	Ta	Tb	Te	Th	Ti%	Tl	Tm	U	V	W	Y	Yb	Zn%	Zr	
SRM 2780a	(1.2)	(0.5)	(22)	12.0	0.643	(5.5)	(0.31)	4.0	152	(17.4)	(18)	(2)	0.102	206	LOI: (11.1)
SRM 2710a	(0.9)	(0.5)	.	(18.1)	0.311	(1.52)	.	9.11	(82)	(190)	.	(2)	0.418	(200)	
IRNT SVM **	(1)	(1)	.	(20)	0.55	(<200)	.	(3)	98.3	(3)	.	(4)	0.00888	(350)	last
IRNT SSP **	.	.	.	.	.	.	.	.	89.7	.	.	.	0.0119	(200)	last
~~SRM 2709a~~	~~(0.7)~~	~~(0.5)~~	~~.~~	~~(10.9)~~	~~0.336~~	~~(0.58)~~	~~.~~	~~(3.15)~~	~~110~~	~~.~~	~~.~~	~~(2)~~	~~(0.0103)~~	~~195~~	~~last~~
SRM 2586	.	(0.09)	.	(7)	0.605	.	(0.5)	.	(160)	.	(21)	2.64	0.0352	.	
SRM 2587	.	.	.	(7.5)	0.3920	.	.	.	(78)	.	(15)	(1.6)	0.03358	.	

** IRNT certificates expired, however use and sales continue without problems worldwide

RM STEATITE

analysis listed in mass % 25 or 100 g units

Number	SiO_2	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	Na_2O	TiO_2	LOI
CERAM 2CAS14	62.7	0.149	0.249	0.314	0.002	31.28	0.008	0.005	5.10

CRM SULPHUR

Number	Recommended S Value (%)	95% Confidence Limits Low%	High%	Standard Deviation of Laboratories (%) Between	Within	Number of Sets	Results	Units
CAN HCC-1	33.92	33.80	34.03	0.14	0.095	9	53	50 g
CAN INM-1	22.17	21.97	22.37	0.24	0.051	9	53	50 g

CRM SULPHUR IN VARIOUS FORMS - SEE ALSO "MULTI-METAL ORE"

analysis listed in mass %

Number	Type	S	SO_4	Al	CO_2	Ca	Cu	Fe	H_2O	Mg	Pb	Si	Zn	LOI	Units
NCS DC71307	Sulphide	52.72	.	.	.	.	0.0431	46.08	.	.	(0.00234)	.	0.0219	.	5 g
NCS DC71308	Sulphide	34.69	.	.	.	.	33.30	30.30	.	.	0.0128	.	0.30	.	5 g
CAN HCC-1	Concentrate	33.92	.	.	.	.	.	.	.	.	.	.	.	.	50 g
NCS DC71310	Sulphide	32.33	.	.	.	.	0.10	2.14	.	.	0.099	.	62.51	.	5 g
CAN WMS-1A	Sulphide	28.17	.	1.350	.	3.09	1.396	45.4	(0.2)	(0.331)	(0.0033)	(4.7)	(0.0130)	.	200 g
CAN INM-1	Concentrate	22.17	.	.	.	.	.	.	.	.	.	.	.	.	50 g
NCS DC71309	Sulphide	13.30	.	.	.	.	0.00624	0.0127	.	.	84.26	.	0.0533	.	5 g
CAN RTS-3a	Ore Tailings	9.59	(1.1)	5.12	0.04	2.14	0.2353	20.49	.	2.483	0.0209	18.28	0.2890	(10.6)	100 g

continued analysis listed in mass %

Number	C	Cd	Co	K	Mn	Na	Ni	P	Sb	Sn	Ti
NCS DC71307	.	0.000071	(0.00039)	.	0.00289	.	0.00340	.	0.00011	(0.00027)	.
NCS DC71308	.	0.00202	0.00751	.	0.00475	.	0.00413	.	(0.00027)	(0.00058)	.
CAN HCC-1	.	.	.	.	.	.	.	.	.	.	.
NCS DC71310	.	0.15	0.0491	.	0.0169	.	0.00432	.	0.0249	(0.00032)	.
CAN WMS-1A	(0.1)	(0.00014)	(0.145)	(0.0991)	(0.0600)	(0.0329)	3.02	(0.018)	(0.000692)	(0.00023)	(0.0840)
CAN INM-1	.	.	.	.	.	.	.	.	.	.	.
NCS DC71309	.	0.00165	(0.00004)	.	.	.	.	.	0.43	0.11	.
CAN RTS-3a	(0.04)	0.000921	0.0143	0.460	0.1585	0.684	0.00613	0.0446	0.000283	.	0.351

continued analysis listed in mg/kg

Number	Ag	As	Au	Ba	Bi	Cr	Ga	Ge	In	Pd	Pt	Se	Sr	Te	Tl	Zr
NCS DC71307	0.59	(14.4)	.	.	2.9	.	0.44	(0.2)	.	.	.	5.8	.	0.95	.	.
NCS DC71308	846	(3.1)	.	.	16.1	.	(0.3)	.	(66.6)	.	.	48.3	.	10.4	.	.
CAN HCC-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
NCS DC71310	5.0	(3.3)	.	.	6.1	.	251	6.0	21.0	.	.	(3.0)	.	(0.3)	.	.
CAN WMS-1A	(3.7)	30.9	0.300	(70)	(1.2)	(68)	(4)	.	(0.2)	1.45	1.91	(87)	(31.3)	.	.	(20)
CAN INM-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
NCS DC71309	0.97%	5.3	.	.	1.4	.	(0.3)	1.47	0.29	.	.	.	.	(0.07)	0.65	.
CAN RTS-3a	11.1	18.2	0.561	106	31.3	176	(30)	.	(1.6)	(0.004)	.	44.8	44.7	(2.0)	(3)	78

CRM SULPHUR ORE

analysis listed in mass %

Number	Al_2O_3	BaO	CaO	Cu	T.Fe	K_2O	MgO	MnO	Na_2O	P_2O_5	S	SiO_2	TiO_2	Zn	LOI	Units
UNS MII	10.63	0.049	0.49	0.21	6.79	2.22	2.06	0.11	0.93	(12)	(7)	(16)	0.50	1.79	(10)	100 g

continued analysis listed in mg/kg

Number	Ag	As	B	Cd	Co	Cr	Cs	Eu	Ga	Hf	La	Mo	Ni
UNS MII	(0.012)	0.0901	(0.005)	0.0767	0.0223	(0.012)	(0.003)	(0.003)	(0.008)	(0.003)	(0.003)	(0.003)	0.0329

Number	Pb	Rb	Sb	Sc	Sr	Ta	Th	U	V	W	Y	Yb	Zr
UNS MII	0.868	(0.005)	(0.004)	(0.003)	0.0259	(0.003)	(0.006)	(0.004)	0.0845	(0.004)	(0.008)	(0.006)	(0.008)

CRM SULPHUR ORE

Number	S%	C%
GS908-4	30.08	.
GS914-3	29.86	0.38
GS314-1	29.11	1.41
GS399-10	28.22	.
GS310-2	27.59	.
GS315-7	26.90	0.36
GS900-2	26.62	.
GS300-5	26.54	.
GS310-1	26.44	.
GS301-2	25.86	.
GS316-8	25.59	0.07
GS300-7	24.85	.
GS317-4	24.43	0.25
GS307-8	23.98	.
GS916-8	23.76	0.60
GS916-6	19.20	0.48
GS317-2	18.66	0.48
GS316-7	18.13	0.41
GS916-7	17.67	0.52
GS317-3	16.76	0.67
GS317-5	15.53	8.46
GS916-9	14.55	0.60
GS912-8	11.63	2.91
GS913-3	10.95	0.03
GS310-7	10.92	.
GS312-7	10.53	2.63
GS916-4	9.95	0.86
GS312-6	9.80	3.10
GS315-10	8.40	0.16
GS910-4	8.27	.
GS913-1	7.90	0.06
GS314-8	7.82	0.26
GS907-4	7.68	.
GS908-7	7.55	.
GS917-1	7.33	0.47
GS913-5	7.30	0.03
GS913-6	7.22	0.04
GS913-7	7.18	0.04
GS307-7	7.04	.
GS915-10	6.90	0.13
GS302-6	6.75	2.84
GS913-4	6.58	0.04
GS913-8	6.56	0.04
GS314-10	6.50	0.37
GS914-6	6.35	1.18
GS301-1	6.13	.
GS310-8	5.91	.
GS907-6	5.77	.
GS905-3	5.64	.
GS913-2	5.49	0.06
GS914-4	5.44	1.00
GS300-2	5.16	.
GS315-2	4.91	0.18
GS314-4	4.87	0.24
GS905-8	4.38	.
GS915-5	3.88	0.12
GS902-3	3.84	.
GS912-7	3.52	0.09
GS314-3	3.37	0.36
GS914-7	3.34	0.04
GS901-1	3.20	.
GS310-3	3.30	.
GS917-2	3.09	0.40
GS916-10	2.90	0.03
GS311-2	2.88	.
GS907-7	2.82	.
GS310-6	2.64	.
GS314-2	2.56	5.15
GS903-3	2.54	.
GS311-1	2.35	.
GS902-7	2.32	.

Number	S%	C%

CRM SULPHUR ORE

Number	S%	C%
GS399-5	2.29	.
GS305-1	2.20	.
GS310-5	2.20	.
GS916-3	2.17	0.26
GS915-1	2.06	0.08
GS916-5	2.05	0.07
GS302-5	1.98	.
GS311-9	1.98	.
GS302-9	1.94	.
GS313-9	1.89	0.08
GS911-8	1.76	.
GS997-10	1.74	.
GS305-6	1.71	.
GS901-8	1.65	.
GS910-6	1.50	.
GS300-4	1.43	.
GS305-5	1.41	.
GS305-7	1.41	.
GS313-8	1.24	0.94
GS916-1	1.18	0.59
GS310-4	1.17	.
GS311-3	1.12	.
GS398-2	1.10	.
GS914-5	1.08	1.39
GS312-4	1.05	0.04
GS315-9	0.94	0.34
GS900-3	0.92	.
GS910-3	0.92	.
GS910-7	0.86	.
GS313-7	0.78	0.74
GS305-2	0.76	.
GS312-8	0.75	0.03
GS900-4	0.71	.
GS302-3	0.68	.
GS906-9	0.68	.
GS312-1	0.67	0.05
GS314-9	0.64	1.13
GS903-1	0.63	.
GS910-9	0.63	.
GS309-1	0.61	.
GS303-7	0.59	.
GS316-4	0.58	0.09
GS916-2	0.56	0.17
GS314-6	0.56	0.15
GS316-2	0.56	0.08
GS311-4	0.54	.
GS917-5	0.53	0.30
GS912-3	0.52	0.07
GS305-10	0.51	.
GS312-3	0.47	0.06
GS301-6	0.40	.
GS300-8	0.37	.
GS917-4	0.36	0.05
GS316-1	0.36	0.04
GS316-3	0.34	0.06
GS303-9	0.31	.
GS312-5	0.28	0.88
GS915-2	0.28	0.13
GS303-10	0.27	.
GS310-10	0.27	.
GS914-2	0.26	0.06
GS313-3	0.25	0.13
GS315-8	0.25	0.19
GS914-10	0.24	0.21
GS903-6	0.23	.
GS317-1	0.21	0.15
GS906-6	0.21	.
GS312-9	0.21	0.03
GS915-3	0.19	0.11
GS914-1	0.18	0.04
GS906-5	0.18	.
GS398-6	0.16	.
GS915-8	0.13	0.07
GS915-9	0.12	0.04
GS917-8	0.11	5.78
GS912-1	0.09	0.03
GS917-9	0.09	5.56

Number	S%	C%

CRM SULPHUR ORE

Number	S%	C%
GS915-6	0.09	0.04
GS316-9	0.08	0.06
GS316-10	0.08	0.03
GS311-5	0.07	.
GS317-8	0.06	0.04
GS912-2	0.06	0.03
GS307-2	0.06	.
GS316-5	0.05	0.46
GS316-6	0.05	0.45
GS912-10	0.05	0.11
GS912-6	0.05	0.06
GS317-6	0.05	0.05
GS915-4	0.05	0.03
GS313-1	0.05	0.03
GS910-5	0.05	.
GS911-5	0.05	.
GS911-9	0.05	.
GS315-4	0.04	0.11
GS912-9	0.04	0.12
GS314-7	0.04	0.09
GS313-10	0.04	0.06
GS917-3	0.04	0.05
GS315-3	0.04	0.04
GS317-10	0.04	0.04
GS312-10	0.04	0.03
GS312-2	0.04	0.22
GS910-2	0.04	.
GS313-4	0.03	0.26
GS313-5	0.03	0.25
GS313-6	0.03	0.12
GS912-5	0.03	0.10
GS313-2	0.03	0.03

Number	S%	C%

for all GS Sulfur Ore samples,
unit size is 10 g powder

CRM SYENITE WITH EXTENSIVE ANALYSIS

analysis listed in mass % * Provisional Analysis 87Sr/86Sr ratio: 0.70375 GBW, US: 50 g all others: 100 g units

Number	SiO_2	Al_2O_3	CO_2	CaO	Cl	F	FeO	Fe_2O_3	T.Fe_2O_3	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	S	TiO_2	LOI
SARM 2	63.63	17.34	0.27	0.68	.	CO2:0.09	0.30	1.11	1.40	+0.22	15.35	0.46	BaO:0.27	0.43	0.27	.	(0.04)	.
~~US STM 2 *~~	~~60.98~~	~~16.4~~	~~.~~	~~1.09~~	~~(0.0570)~~	~~.~~	~~(2.08)~~	~~.~~	~~5.39~~	~~T.Fe:3.77~~	~~4.07~~	~~0.12~~	~~Mn:0.1640~~	~~0.98~~	~~0.17~~	~~.~~	~~0.16~~	~~.~~
JSy-1	60.02	23.17	.	0.25	.	.	.	.	0.084	.	4.82	0.016	0.0024	10.74	.	.	.	.
VS 6104-91	57.86	16.68	(0.20)	6.94	.	0.082	2.51	.	5.41	(-0.05, +0.28)	4.77	1.25	0.14	4.51	0.39	(0.017)	0.78	(0.38)
GBW 07109	54.48	17.72	0.26	1.39	0.059	0.048	1.23	6.04	.	2.38	7.48	0.65	0.12	7.16	0.018	0.011	0.48	.
CGL 015	52.20	24.59	.	1.98	.	(0.10)	2.60	.	4.67	(-0.104, +0.58)	4.44	0.37	(0.100)	9.76	0.139	.	0.37	1.05
~~CAN SY 5~~	~~49.83~~	~~14.35~~	~~C:0.171~~	~~7.039~~	~~.~~	~~.~~	~~.~~	~~10.61~~	~~.~~	~~0.142~~	~~4.170~~	~~3.13~~	~~0.1283~~	~~4.15~~	~~2.04~~	~~0.421~~	~~1.777~~	~~0.86~~

continued analysis listed in mg/kg except % which is mass %

Number	Ag	As	B	Ba	Be	Bi	Br	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Ge
SARM 2	.	.	.	.	.	.	.	.	11.9	(3)	12	.	19	(0.4)	.	0.30	11	.	.
~~US STM 2 *~~	~~(1.2)~~	~~.~~	~~(5.4)~~	~~639~~	~~9.7~~	~~.~~	~~.~~	~~.~~	~~256~~	~~.~~	~~.~~	~~1.52~~	~~.~~	~~(8.01)~~	~~(4.4)~~	~~3.45~~	~~34~~	~~(8)~~	~~.~~
JSy-1	.	.	.	15.7	.	.	.	.	2.6	.	2.0	0.69	1.3	0.37	0.30	0.16	23.5	7.0	0.95
VS 6104-91	(0.03)	(12)	(7)	0.69%	1.9				219	8	16	(1)	5	(6.9)	(2.5)	4.5	17	(10)	(1.2)
GBW 07109	.	6.27	31.8	251	17.2	0.37	1.21	0.07	242	4.59	3.6	2.05	11.8	4.70	2.48	2.35	35.8	.	.
CGL 015	.	.	.	1305	(1.86)	.	.	.	58.24	(5.33)	25.6	(1.31)	6.40	(4.49)	(2.69)	(1.36)	22.63	(4.75)	.
~~CAN SY 5~~	~~.~~	~~.~~	~~.~~	~~6400~~	~~4.62~~	~~.~~	~~.~~	~~.~~	~~459~~	~~23.1~~	~~151.5~~	~~0.612~~	~~37.9~~	~~11.33~~	~~5.38~~	~~7.64~~	~~21.6~~	~~19.8~~	~~.~~

Number	Hf	Hg	Ho	I	In	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Rb	Sb	Sc
SARM 2	.	.	.	.	.	(5)	.	.	Mn:80	.	(6)	(7)	(5)	.	530	.	.
~~US STM 2 *~~	~~27~~	~~.~~	~~(1.55)~~	~~.~~	~~.~~	~~154~~	~~36~~	~~0.60~~	~~6.2~~	~~267~~	~~81~~	~~(4.8)~~	~~12~~	~~25~~	~~114~~	~~.~~	~~.~~
JSy-1	1.2	.	0.094	.	.	1.2	.	0.076	.	0.51	1.2	1.1	4.9	0.32	66.3	0.15	.
VS 6104-91	5	.	(1)	.	.	108	10.5	0.33	1.1	20	102	8.4	21	(23)	56	.	4
GBW 07109	34.0	0.005	0.96	0.14	0.15	149	32.9	0.43	0.26	66.9	65.1	1.75	196	22.5	130	0.15	2.22
CGL 015	(3.15)	.	(0.93)	.	.	27.48	64.95	(0.42)	(1.51)	22.63	27.34	(3.4)	7.00	(6.99)	85.36	(0.14)	2.76
~~CAN SY 5~~	~~15.3~~	~~.~~	~~2.04~~	~~.~~	~~.~~	~~225~~	~~49.5~~	~~0.702~~	~~0.893~~	~~22.2~~	~~208.1~~	~~79.8~~	~~65.9~~	~~55.3~~	~~76.9~~	~~0.524~~	~~12.37~~

Number	Se	Sm	Sn	Sr	Ta	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb	Zn	Zr
SARM 2	.	(1)	.	62	.	.	.	1.0	Ti:265	.	.	10	.	.	(0.07)	(10)	(33)
~~US STM 2 *~~	~~.~~	~~12.0~~	~~(6.6)~~	~~782~~	~~16~~	~~(1.38)~~	~~.~~	~~27~~	~~.~~	~~0.55~~	~~(7.6)~~	~~(5.5)~~	~~(2.2)~~	~~43~~	~~4.2~~	~~223~~	~~1280~~
JSy-1	.	0.27	0.17	19.3	.	.	.	0.23	.	0.053	0.20	2.1	.	2.6	0.41	3.2	70.2
VS 6104-91	.	16	(1.9)	0.52%	(1.8)	(1.7)	.	(12)	.	(0.45)	(2)	79	.	25	2.3	109	185
GBW 07109	0.05	9.7	6.50	1160	1.96	1.02	0.012	79.3	0.76	0.46	14.6	179	1.24	24.7	2.56	112	1540
CGL 015		(5.09)	.	312	(1.21)	(0.76)	.	(4.63)	(0.32)	(0.4)	(1.59)	(5.8)	(4.36)	25.32	2.66	75.42	157
~~CAN SY 5~~	~~.~~	~~31.1~~	~~2.56~~	~~3100~~	~~1.06~~	~~2.26~~	~~.~~	~~25.2~~	~~0.614~~	~~0.725~~	~~5.09~~	~~131.8~~	~~.~~	~~56.3~~	~~4.64~~	~~130.9~~	~~769~~

NEPHELINE SYENITE

= class, where 1 = CRM and 2 = RM analysis listed in mass % GBW: 50 g units all others: 100 g units

#	Number	SiO_2	Al_2O_3	Ba	CO_2	CaO	FeO	Fe_2O_3	H_2O	K_2O	MgO	MnO	Na_2O	P_2O_5	S	Sr	TiO_2	LOI
1	GBW 03124	60.64	20.05	.	.	0.52	0.28	1.37	2.34+	5.06	0.13	0.050	8.97	0.020	(0.011)	.	0.12	2.37
2	BCS 201a	57.3	23.54	.	.	1.07	.	0.12	.	8.90	0.025	.	7.53	0.025	.	.	0.05	0.76
1	USZ 45-2007	51.88	22.58	0.0447	(1.16)	2.28	0.80	2.63	.	9.10	0.24	0.14	6.78	0.04	.	0.01740	0.37	3.35
1	VS 728-75	40.18	28.5	.	1.6	7.13	(1.43)	3.25T	(1.9+)	(3.3)	1.01	(0.04)	12.2	0.51	0.084	.	0.24	.
1	GBW 03125	39.42	29.67	.	2.97	5.98	1.24	0.33	1.78+	4.72	0.92	0.031	12.59	0.072	(0.064)	.	0.14	.

continued analysis in mg/kg except % which is mass %

Numeber	As	Ce	Cr	Cu	F%	Ga	La%	Li	Nb%	Pb	Rb%	Th	U	V	Y	Zn%	Zr%
GBW 03124	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BCS 201a	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
USZ 45-2007	23.8	30.8	44	(2.6)	(0.26)	23	0.0163	54	0.0040	114	0.0207	61.6	12.4	30	23	0.0098	0.0600
VS 728-75	.	.	.	.	.	.	.	.	.	.	.	.	Fe_2O_3:(1.66%)			InsRes:(3.5%)	
GBW 03125	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

TALC

= class, where 1 = CRM and 2 = RM analysis listed in mass % T = total BCS: 100 g JCRM, NCS: 50 g units

#	Number	Al_2O_3	CO_2	CaO	Fe_2O_3	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI	Ins.Res.
available individually															
1	NCS DC60132	7.62	2.17	2.39	2.64T	7.34	0.026	29.50	0.021	0.049	0.11	47.71	0.52	9.40	(83.13)
2	BCS 203a	0.30	.	0.25	0.22	.	<0.01	32.08	.	0.02	0.13	59.7	<0.01	6.78	.
1	NCS DC60131	0.082	0.34	0.38	0.29T	4.73	0.009	31.89	0.0015	0.022	0.14	62.03	0.0052	5.14	(92.78)
sold in set/3 only, as grouped															
1	JCRM R903	2.447	.	0.998	0.564	.	0.007	31.84	(0.003)	0.029	0.051	55.76	0.075	8.23	.
1	JCRM R901	0.924	.	0.438	0.1224	.	0.004	31.22	0.004	0.054	0.195	59.77	0.019	6.14	.
1	JCRM R902	0.115	.	0.342	0.091	.	0.003	31.97	(0.002)	0.006	0.046	60.77	0.004	6.64	.

CRM TANTALUM ORE

analysis listed in mass %

Number	Ta_2O_5	Ta	Al	Al_2O_3	BeO	Ca	CaO	Cs_2O	F	Fe	FeO	Fe_2O_3(T)	H_2O+	K	K_2O	Li_2O
NCS DC86315	1.02	.	.	14.58	0.00125	.	0.71	0.000814	0.019(F-)	.	0.26	0.68	0.56	.	4.11	0.0106
CAN TAN-1	0.288	0.2365	(8.2)	.	.	(0.5)	.	.	.	(0.2)	.	.	.	(1.5)	.	.
NCS DC86306	0.070	.	.	14.25	0.033	.	0.105	0.066	1.33	.	(0.026)	0.377	1.52	.	2.01	0.779
NCS DC86305	0.00886	.	.	14.28	0.033	.	0.107	0.064	1.32	.	(0.019)	0.324	1.52	.	2.04	0.790

continued analysis listed in mass %

Number	Mg	MgO	Mn	MnO	Na	Na_2O	Nb_2O_5	P_2O_5	Rb_2O	Si	SiO_2	Sn	TiO_2	W	LOI
NCS DC86315	.	0.093	.	0.45	.	4.40	0.52	(0.040)	0.0244	.	72.34	(0.000265)	0.039	0.00214	0.61
CAN TAN-1	(0.02)	.	(0.02)	.	(4.6)	.	.	.	.	(33.4)	.	(0.01)	.	.	.
NCS DC86306	.	0.048	.	0.144	.	3.68	0.43	0.348	0.241	.	74.98	(0.0063)	0.032	0.020	2.21
NCS DC86305	.	0.050	.	0.115	.	3.62	0.00423	0.347	0.244	.	75.06	(0.0052)	0.027	0.00164	2.21

continued analysis listed in mg/kg

Number	CeO_2	Dy_2O_3	Er_2O_3	Eu_2O_3	Gd_2O_3	Ho_2O_3	La_2O_3	Lu_2O_3	Nd_2O_3	Pr_6O_{11}	RE_xO_y*	Sc_2O_3	Sm_2O_3	Tb_2O_3	Tb_4O_7	Tm_2O_3	Y_2O_3	Yb_2O_3	Units
NCS DC86315	16.5	4.72	2.65	0.13	3.47	0.88	7.65	0.37	7.84	1.91	81.0	2.14	2.48	.	0.72	0.38	29.9	2.37	70 g
CAN TAN-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	200 g
NCS DC86306	16.5	1.1	0.56	0.18	0.84	0.13	6.9	0.15	6.4	2.2	45.0	6.1	1.4	0.22	.	0.11	5.3	0.93	70 g
NCS DC86305	3.6	0.65	0.27	0.16	1.2	0.22	3.3	0.028	3.4	0.86	18.6	0.64	0.77	0.14	.	0.040	3.7	0.24	70 g

* RE_xO_y: Rare Earth Oxide

CRM TIN AND TIN-TUNGSTEN ORE

Number	Sn	Al	As	Bi	Ca	CaO	Cu	F	Fe	MgO	Ni	Pb	S	Sb	Si	SiO_2	Ti	W	Zn	Units
NCS DC35014	54.86	.	0.414	0.028	.	(0.11)	0.067	.	14.77	(0.13)	.	2.20	.	0.019	.	(1.10)	.	.	0.196	100 g
~~BCS 355~~	~~31.42~~	~~4.12~~	~~0.14~~	~~0.015~~	~~2.63~~	~~.~~	~~0.005~~	~~2.02~~	~~17.08~~	~~.~~	~~0.0040~~	~~0.012~~	~~0.50~~	~~.~~	~~7.14~~	~~.~~	~~0.37~~	~~0.35~~	~~0.059~~	~~100 g~~
NCS DC35012	3.98	.	0.097	.	.	.	0.109	.	.	.	.	.	.	.	.	.	.	.	.	70 g
NCS DC35011	0.737	.	0.046	.	.	.	0.077	.	.	.	.	.	.	.	.	.	.	.	.	70 g

TITANIUM ORE

analysis listed in mass %

#	Number	Ilmenite	TiO_2	Al_2O_3	C	CaO	Co	Cr	Cr_2O_3	Fe	FeO	Fe_2O_3	K_2O	MgO	MnO	Na_2O
2	OSO Ki-370-99	95.41	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1	NCS HC26619	.	98.21	0.65	0.011	.	.	.	.	.	.	0.006	.	.	.	.
1	DSZU 123.22-95	.	65.33	3.17	.	0.51	.	.	1.32	16.10	.	.	.	0.53	0.92	.
~~1~~	~~DSZU 123.21-95~~	~~.~~	~~59.48~~	~~1.02~~	~~.~~	~~0.40~~	~~.~~	~~.~~	~~0.15~~	~~26.76~~	~~.~~	~~.~~	~~.~~	~~0.38~~	~~0.51~~	~~.~~
1	VS R31	.	56.5	1.99	.	.	.	.	2.59	24.4	.	.	.	.	.	.
1	NCS DC28139	.	55.68	2.30	.	0.070	0.0026	.	2.80	22.04	9.15	.	.	1.09	1.26	.
1	DSZU 103.39-07	.	53.9	0.66	.	.	.	.	0.04	29.1	.	.	.	0.56	0.63	.
1	NCS DC26705	.	51.35	0.75	0.043	0.16	.	.	(0.07)	31.40	23.81	.	.	0.84	0.90	.
1	NCS DC28142	.	50.06	1.30	.	0.68	0.011	.	0.84	30.23	28.85	.	.	1.52	0.875	.
1	NCS DC19019	.	49.78	0.53	.	0.028	.	.	0.054	34.56	25.05	.	.	0.32	1.55	.
1	NCS DC28138	.	47.82	0.68	.	0.68	0.0087	.	0.014	34.79	39.14	.	.	2.11	0.652	.
1	NCS DC28140	.	45.73	0.95	.	2.23	0.051	.	0.012	33.02	36.68	.	.	1.68	0.882	.
1	NCS DC19017	.	45.71	1.64	.	1.75	.	.	0.014	29.12	32.56	.	.	5.18	0.709	.
1	NCS DC28141	.	45.61	0.867	.	1.65	0.0098	.	0.0067	33.58	37.51	.	.	1.74	0.799	.
1	AMIS 0454 *	Ti: 26.78	44.45	0.731	.	0.216	.	(0.0713)	(0.114)	see below		52.53	(0.045)	0.74	1.19	(0.03)
1	NCS DC28137	.	40.66	1.35	.	4.78	0.010	.	0.0064	30.31	33.33	.	.	1.30	1.20	.
1	NCS DC28143	.	35.60	1.65	.	6.25	0.013	.	0.0077	29.29	29.34	.	.	1.55	1.02	.
1	NCS DC19018	.	33.94	4.47	.	3.14	.	.	0.0085	27.30	29.70	.	.	6.88	0.524	.
1	NCS DC28136	.	27.23	2.31	.	9.49	0.015	.	0.0078	26.50	23.62	.	.	2.34	0.802	.
1	CGL 129	17025	14.88	9.79		1.16	0.0209	0.3068	.	61.86	.	61.86T	0.137	3.05	0.240	(0.086)
1	NCS DC28134	.	7.11	8.67	.	12.39	0.0052	.	0.0084	14.85	12.45	.	.	6.33	0.216	.
1	NCS DC28135	.	6.14	8.82	.	9.87	0.0079	.	0.0095	15.07	12.77	.	.	6.78	0.187	.

Number	Ni	P	P_2O_5	S	SiO_2	Sr	V	V_2O_5	Zn	Zr	LOI	Units	
OSO Ki-370-99	.	.	.	.	.	.	.	.	.	.	.	1 kg of ~3mm material	
NCS HC26619	.	.	.	0.006	.	.	.	.	.	.	.	20 g	
DSZU 123.22-95	.	.	0.15	0.0090	1.45	.	.	0.18	.	.	.	100 g	
~~DSZU 123.21-95~~	~~.~~	~~.~~	~~0.24~~	~~0.96~~	~~3.00~~	~~.~~	~~.~~	~~0.26~~	~~.~~	~~.~~	~~.~~	~~100 g~~	
VS R31	.	.	0.25	.	1.24	.	.	.	.	.	.	100 g	
NCS DC28139	0.0007	0.047	.	0.025	1.54	.	.	0.266	0.017	.	Cu:0.0093	50 g	
DSZU 103.39-07	.	.	0.10	0.59	1.88	.	.	0.25	.	.	.	100 g	
NCS DC26705	.	0.045	.	0.004	1.98	.	.	0.22	.	.	.	40 g	
NCS DC28142	0.0021	0.048	.	0.172	2.04	.	.	0.700	0.017	.	Cu:0.0073	50 g	
NCS DC19019	.	0.0048	.	0.010	0.578	.	.	0.137	.	.	.	100 g	
NCS DC28138	0.0029	0.0076	.	0.184	2.65	.	.	0.095	0.016	.	Cu:0.0056	50 g	
NCS DC28140	0.0051	0.048	.	0.74	4.85	.	.	0.203	0.016	.	Cu:0.013	50 g	
NCS DC19017	.	0.117	.	0.0080	5.99	.	.	0.090	.	.	.	100 g	
NCS DC28141	0.0046	0.047	.	0.536	4.16	.	.	0.188	0.015	.	Cu:0.011	50 g	
AMIS 0454 *	.	.	(0.030)	.	2.23	.	.	(0.24)	.	ZrO_2:(0.12)	Nb:(0.0576)	100 g	Density: 4.63
NCS DC28137	0.0084	0.117	.	1.52	9.21	.	.	0.068	0.014	.	Cu:0.022	50 g	
NCS DC28143	0.011	0.476	.	2.76	10.41	.	.	0.505	0.016	.	Cu:0.027	50 g	
NCS DC19018	.	0.558	.	0.028	11.73	.	.	0.101	.	.	.	100 g	
NCS DC28136	0.013	1.07	.	4.77	14.41	.	.	0.066	0.015	.	Cu:0.038	50 g	
CGL 129	0.0306	.	0.022	.	7.77	0.0152	0.02818	.	0.0575	0.00354	(-0.25)	150 g	
NCS DC28134	0.0037	0.883	.	0.196	38.43	.	.	0.062	0.019	.	Cu:0.0082	50 g	
NCS DC28135	0.0098	0.232	.	0.021	42.61	.	.	0.092	0.018	.	Cu:0.016	50 g	

* AMIS 0454 certifies Fe by XRF 36.50%, Titration 37.14%, and M/ICP 36.37%.

Special Note: more Titanium Powders are in our "Other Chips & Powders Catalog."

RM ILMENITE

typical analysis listed in mass % 100 g

Number	TiO_2	Al_2O_3	C	CaO	Co_3O_4	Cr_2O_3	CuO	Fe	K_2O	MgO	Mn	NiO	P_2O_3	S	SiO_2	SrO	V_2O_5	ZnO	ZrO_2
DH 6706	32.37	4.46	0.044	1.179	0.024	0.143	0.017	36.83	0.118	2.82	0.094	0.049	0.017	0.288	7.31	0.016	0.285	0.020	0.044

CRM TUNGSTEN ORE

analysis listed in mass % except * which is mg/kg CAN: 200 g GW: 10 g IGS: 65 g NCS: 50 g all others: 100 g

Number	W	WO_3	Ag*	As	Be	Bi	Cu	Fe	Ge*	Mo	Nb	P	Pb	S	SiO_2	Sn	Other
VS 1710-79	.	71.96	.	.	.	0.146	.	.	.	.	.	.	.	.	.	.	
NCS DC35018	.	70.50	.	0.028	.	Ca:4.93	0.019	.	.	0.011	.	0.038	.	0.72	1.94	0.020	
SRM 2430	.	70.26	.	0.002	.	0.078	.	.	.	0.22	.	0.017	.	0.26	.	.	
NCS DC35019	.	69.19	.	0.052	.	Ca:1.94	0.038	.	.	0.010	.	0.021	.	0.21	1.70	0.13	
NCS DC35021	.	69.13	.	.	.	.	0.065	.	Mn:0.042	0.031	.	0.044	.	0.73	.	.	
SRM 277	.	67.50	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
NCS DC35020	.	67.18	.	0.083	.	Ca:1.62	0.044	.	.	0.012	.	0.024	.	0.25	1.98	0.14	
NCS DC35022	.	66.02	.	.	.	.	0.0034	.	Mn:0.029	0.073	.	0.0079	.	0.35	.	.	
NCS DC35023	.	57.01	.	.	.	.	0.13	.	Mn:0.12	0.012	.	0.091	.	1.24	.	.	
CAN CT-1	1.04	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
CAN BH-1	0.422	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
KZ 7027-93	0.17	.	.	.	.	0.015	.	.	.	0.0093	0.0014	.	.	.	.	.	Zr: 0.013
GW-03	0.1744	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
GW-02	0.1231	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
KZ 7026-93	0.11	1.2	.	.	0.0022	0.018	0.052	.	3.6	0.00098	0.0015	.	.	Sr:0.017	.	.	Sr: 0.017
CAN TLG-1	0.083	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
IGS 27	0.036	.	.	.	.	.	.	1.76	.	0.276	.	.	.	.	.	.	
VS 1714-79	.	1.04	10.3	.	.	0.089	.	.	.	0.041	.	.	.	.	.	0.113	last
VS 1715-79	.	0.60	.	.	0.013	0.054	0.020	.	3.1	0.026	.	.	0.049	.	.	0.068	last Zn: 0.038
VS 2040-81	.	0.49	.	.	.	0.0058	0.053	0.94	.	0.016	.	.	.	.	.	.	
VS 2042-81	.	0.38	.	.	.	0.0032	0.105	4.17	.	0.039	.	.	.	.	.	.	last
VS 2039-81	.	0.22	.	.	.	0.023	0.27	2.47	.	0.0026	.	.	.	.	.	.	
VS 1713-79	.	0.17	5.5	.	0.0058	0.015	.	.	2.9	0.011	.	.	.	.	.	0.028	last
VS 1711-79	.	0.036	.	.	0.0022	0.0044	.	.	.	0.0026	.	.	.	.	.	0.0071	last

CRM TUNGSTEN ORE

analysis listed in mass % T = Total GBW: 50 g USZ: 100 g units

Number	WO_3	Al_2O_3	As	Bi	CaO	Cy	F	FeO	Fe_2O_3	K_2O	MgO	MnO	Mo	Na_2O	Pb	Rb	S	SiO_2
USZ 26-99	0.41	14.14	0.09	0.0067	1.95	.	.	3.72	5.59T	4.32	2.04	0.12	0.079	2.13	0.0076	0.106	.	64.87
GBW 07241	.	11.15	.	0.068	4.17	0.096	4.84	.	5.60	1.58	0.14	0.090	0.098	0.12	.	(0.05)	1.90	71.27
GBW 07240	.	8.24	0.18	0.011	37.73	0.79	9.91	.	7.79	1.94	1.45	0.97	.	0.16	0.26	(0.08)	3.12	13.27

analysis listed in mass % analysis listed in mg/kg except % which is mass %

Number	Sn	TiO_2	Zn	Ag	As	Cd	Ce	Co	Cu%	Dy	Eu	Er	Ga	Gd	Ge	Ho	In	La
USZ 26-99	(0.016)	0.82	0.017	.	.	.	.	11	0.022	.	.	.	.	.	.	.	.	.
GBW 07241	0.17	0.044	0.010	1.8	69.6	0.94	60.3	.	.	20.7	0.17	13.1	16.5	14.8	11.2	4.5	1.3	1.8
GBW 07240	0.14	0.079	0.29	8.3	.	26.1	10.0	.	.	0.46	0.15	0.23	17.8	0.64	2.5	0.11	8.7	5.0

analysis listed in mg/kg except % which is mass %

Number	Lu	Mo	Nd	Ni	Pb	Pr	Sb	Sc	Se	Sm	Sr	Tb	Te	Th	Tl	Tm	Y	V%	Yb	Zr%
USZ 26-99	.	.	.	35	.	.	(20)	.	.	.	78	.	.	.	.	.	.	0.010	.	0.017
GBW 07241	2.4	.	32.9	2.8	81.2	7.9	3.1	5.4	0.96	12.5	.	3.3	2.9	28.3	1.8	2.2	128	.	14.9	.
GBW 07240	0.06	4.2	4.0	4.1	.	1.1	5.1	1.8	0.39	0.79	.	0.15	0.66	2.2	5.0	0.04	2.8	.	0.28	.

CRM TUNGSTEN ORE

analysis in mass % except * is mg/kg more information on certificates 10g, 60g, 500g, or 1 kg units

Number	W	WO_3	Au*	Cu	Fe	FeO	Fe_3O_4	Mo	SiO_2	Sn	Mass Recovered
OREAS 701	2.43	3.07	1.11	0.491	23.98	17.35	17.95	0.0254	33.95	0.0197	20.80
OREAS 700	1.13	1.42	0.506	0.202	16.06	12.07	10.91	0.0081	47.30	0.0182	11.28

RM ULTRAMAFIC ROCK - KOMATIITE

analysis listed in mass %

Number	Al_2O_3	CaO	$T.Fe_2O_3$	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI
IAG OKUM	7.97	7.85	11.81	0.044	21.2	0.188	1.13	0.026	44.1	0.380	(4.49)

continued analysis listed in mg/kg

Number	Ba	Be	Ce	Co	Cr	Cs	Cu
IAG OKUM	(6.2)	(0.065)	1.27	88	2460	0.184	43

continued analysis listed in mg/kg

Number	Dy	Er	Eu	Ga	Gd	Hf	Ho	La	Li	Lu	Nb	Nd	Ni	Pb	Pr	Rb
IAG OKUM	1.61	1.04	0.300	8.7	(1.17)	0.55	0.355	0.41	(4.4)	0.148	0.37	1.49	88	(0.26)	0.235	0.96

Number	Sb	Sc	Sm	Sn	Sr	Ta	Tb	Th	Tm	U	V	Y	Yb	Zn	Zr	Units
IAG OKUM	(0.079)	27	0.71	(0.25)	16	0.026	(0.229)	0.031	(0.155)	(0.012)	167	9.0	1.00	61	17	100 g

CRM URANIUM ORE

analysis listed in mass % powder 10 g

Number	U	Cu	Fe
GU-10	0.1876	.	.
GU-09	0.1134	.	.
GU-08	0.03124	.	.
GU-07	0.02429	.	.
GU-11	0.003467	.	.
GU-03	0.00048	0.00210	3.5
GU-04	0.00042	.	.
GU-06	0.000382	.	.
GU-05	0.000356	.	.

CRM URTITE

analysis listed in mass % 40 g units

Number	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	MnO	MgO	CaO	Na_2O	K_2O	FeO	P_2O_5	Ba	Sr
VS 2123-81	42.80	1.79	26.47	2.67	0.084	0.14	3.73	13.33	5.16	1.40	0.388	0.035	0.100

continued analysis listed in mg/kg

Number	Be	Co	Cr	Cu	Ga	La	Li	Mo	Nb	Ni	Pb	Rb	Sn	V	Y	Yb	Zn	Zr
VS 2123-81	5.1	8.1	9.7	24	48	100	8.9	2.3	97	6.5	5.8	79	3.4	86	26	1.7	44	220

CRM VANADIUM ORE

analysis listed in mass % 10 g units

Number	V_2O_5	Al_2O_3	CaO	Cr_2O_3	Fe	K_2O	MgO	MnO	Na_2O	SiO_2	TiO_2	Co	Cu	Ni	P	S	Zn	LOI
GV-01	1.233	5.57	0.079	0.721	48.95	0.010	1.30	0.148	0.015	4.27	14.104	0.019	0.022	0.067	0.005	0.067	0.037	2.07
GV-02	0.790	11.24	2.484	0.560	34.41	0.080	2.80	0.161	0.573	19.76	9.174	0.017	0.033	0.061	0.018	0.220	0.030	2.76
GV-06	0.343	7.18	6.204	0.007	25.93	0.464	9.73	0.326	0.627	30.57	6.549	0.014	0.007	0.016	0.102	0.018	0.027	0.91
GV-03	0.327	16.78	2.966	0.044	20.24	0.183	3.59	0.176	0.843	33.96	4.302	0.013	0.013	0.048	0.023	0.073	0.016	7.44
GV-05	0.223	7.53	4.004	0.008	23.97	0.440	14.33	0.350	1.272	34.61	4.121	0.017	0.006	0.022	0.099	0.013	0.024	-1.28
GV-04	0.089	11.93	8.822	<0.01	13.15	1.809	4.21	0.263	3.008	45.99	3.568	0.005	0.013	0.004	0.348	0.086	0.020	0.47

RM VOLCANIC TUFF WITH EXTENSIVE ANALYSIS

analysis listed in mass % ~35 g units

Number	Al_2O_3	Ba	CaO	FeO	$T.Fe_2O_3$	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	Sr	TiO_2	V	LOI
IAG OU-1	15.136	0.01314	6.488	4.995	8.987	0.215	4.727	0.129	2.463	0.050	58.247	0.010476	0.440	0.022223	3.058

continued analysis listed in mg/kg

Number	As	Be	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Hf	Ho	La	Li
IAG OU-1	8.221	0.43	0.17	12.49	24.41	27.65	0.14	61.55	3.40	2.40	0.52	13.63	2.78	1.65	0.80	5.60	20.35

Number	Lu	Nb	Nd	Ni	Rb	Sb	Sc	Sm	Ta	Tb	Th	Tm	U	Y	Yb	Zn	Zr
IAG OU-1	0.39	2.3	7.32	13.00	2.05	0.22	32.69	2.13	0.15	0.49	1.68	0.37	0.40	21.63	2.49	74.40	55.00

CRM WOLLASTONITE

analysis listed in mass % 50 g units

Number	Al_2O_3	CaO	FeO	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	S	SiO_2	TiO_2	LOI
GBW 03123	0.39	40.39	0.28	0.10	0.14	0.95	0.096	0.052	0.052	(0.010)	50.50	0.022	6.93

CRM ZEOLITE WITH EXTENSIVE ANALYSIS

analysis listed in mass % T = Total

Number	Al_2O_3	Ba	CaO	Fe_2O_3	H_2O-	K_2O	MgO	MnO	Na_2O	P_2O_5	Rb	SiO_2	Sr	TiO_2	Zr	LOI	Units
FLX CRM104	33.74	.	0.063	0.014	.	.	.	.	20.06	.	.	45.98	.	.	.	(22.64)	35 g
USZ 49-2009	12.98	0.0371	1.34	1.27T	.	3.19	0.573	0.033	3.44	0.032	0.0106	67.44	0.0635	0.158	0.0177	8.80	70 g
CGL 017	12.91	0.0383	1.30	0.802T	(4.17)	3.21	(0.55)	0.007	3.35	0.030	0.0107	67.64	0.0651	0.161	(0.0179)	(9.77)	70 g
NH Zeolite 1	12.21	0.0779	4.51	1.75T	.	2.19	1.41	0.045	0.612	0.055	0.00957	67.11	0.0617	0.190	0.0158	.	50 g

continued analysis listed in mg/kg

Number	As	Be	Bi	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Hf	Hg	Ho
FLX CRM104	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
USZ 49-2009	60.5	(2.75)	(11.7)	(7.85)	74.8	20.3	12.7	4.73	79.3	(3.46)	(1.83)	(0.50)	13.8	(3.81)	(5.38)	(1.85)	(0.66)
CGL 017	(63)	(2.6)	.	.	(77)	(0.94)	(7.9)	.	(2.9)	(3.5)	(1.91)	(0.49)	14.84	(4.3)	(7.9)	.	(0.67)
NH Zeolite 1	1.96	1.96	.	.	52.3	.	.	3.88	5.12	.	.	.	13.9	.	.	0.329	.

Number	La	Li	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Sb	Sc	Sm	Sn	Ta	Tb	Th	Tm
FLX CRM104	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
USZ 49-2009	37.2	(6.07)	(0.27)	(0.43)	14.1	27.3	14.6	84.2	(7.97)	(50.9)	3.27	(4.82)	(2.27)	(1.16)	(5.9)	17.2	(0.27)
CGL 017	(39.5)	(6.4)	(0.28)	.	14.17	(27.5)	(2.2)	21.78	(8.4)	.	(3.6)	(5.1)	(2.6)	(1.26)	(0.63)	(17.3)	(0.29)
NH Zeolite 1	32.6	.	.	.	.	.	.	20.8	.	0.379	.	.	.	.	.	.	.

Number	U	V	W	Y	Yb	Zn
FLX CRM104	.	.	.	.	.	.
USZ 49-2009	3.09	42.3	(1.52)	18.6	(1.81)	79.3
CGL 017	(3.1)	(11.1)	.	20.36	(1.8)	25.37
NH Zeolite 1	.	12.6	.	21.8	.	38.2

17025

CRM ZINC ORE

analysis listed in mass % except * which is mg/kg T = Total

Number	Zn	S	Al_2O_3	Ca	CaO	Cd	Cu	Fe	Hg*	Mg	MgO	Ni	Pb	Sb	SiO_2
IMN TC/P10	60.6	3.07	0.14	.	2.54	.	.	6.7	.	.	1.38	.	2.31	.	0.56
CAN CZN-4	55.24	33.07	Al:0.0715	(0.0419)	.	0.2604	0.403	(9)	4.54	(0.0352)	.	(0.0016)	0.1861	(0.0010)	Si:0.295
BCS 520	52.50	31.78	0.334	.	0.125	.	0.568	9.88	.	.	0.266	.	0.820	.	1.78
NCS DC35017	46.93	.	.	.	2.65	0.199	.	0.432	.	.	1.46	.	1.69	.	6.65
GBM305-12	17.0581	.	.	.	.	.	0.0119	.	.	.	.	0.0042	0.4214	.	.
GBM310-13	10.8471	5.9	.	.	.	.	0.0334	.	.	.	.	0.0072	2.1599	.	.
GBM919-13	6.5874	5.78	.	.	.	.	1.6692	.	.	.	.	0.0056	0.3986	.	.
GBM916-11	6.0894	9.89	.	.	.	.	1.0864	.	.	.	.	0.0009	0.2843	.	.
IMN RG 8	5.4	0.57	0.9	.	26.45	0.047	.	6.34	.	.	12.16	.	0.84	.	2.64
GBM907-14	3.1882	2.90	.	.	.	.	0.8167	.	.	.	.	0.0061	0.1973	.	.
GBM311-11	3.1115	3.3	.	.	.	.	1.4504	.	.	.	.	0.0078	1.0730	.	.
IMN RB 7	3.07	(10.3)	.	.	24.35	0.033	.	8.28	.	.	15.26	.	(0.26)	.	(0.8)
GBM921-14	2.9758	4.13	.	.	.	.	0.5305	.	.	.	.	0.0025	0.2821	.	.
GBM916-9	2.9716	.	.	.	.	.	0.5257	.	.	.	.	0.0026	0.2710	.	.
GBM321-11	2.0664	2.17	.	.	.	.	0.6834	.	.	.	.	0.0031	0.6596	.	.
GBM921-8	2.0559	.	.	.	.	.	0.6823	.	.	.	.	0.0034	0.6515	.	.
GBM919-12	1.6668	23.18	.	.	.	.	0.7274	.	.	.	.	0.0048	0.0206	.	.
BCR 109	.	.	.	.	.	0.46	0.946	14.51	0.96	0.020	.	.	0.738	.	.

continued

Number	Ag*	As	Au*	Bi*	C	Cl	Co	F	In	Mn	PbO	Se*	Sn	ZnO	Units
IMN TC/P10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	240 g last
CAN CZN-4	51.4	0.0356	(0.04)	(10)	(0.09)	(0.003)	0.00935	(0.004)	(0.020)	(0.009)	.	86.7	(0.05)	.	200 g
BCS 520	36	0.0228	.	.	.	.	.	.	.	.	.	.	.	.	100 g
NCS DC35017	0.013	.	.	.	.	.	.	.	.	.	.	.	.	.	50 g
GBM305-12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	10 or 250 g
GBM310-13	30.8	.	.	.	.	.	.	.	.	.	.	.	.	.	10 or 250 g
GBM919-13	17.3	.	.	.	.	.	.	.	.	.	.	.	.	.	
GBM916-11	68.0	.	.	.	.	.	.	.	.	.	.	.	.	.	
IMN RG 8	.	.	.	.	.	.	.	.	.	.	(0.72)	.	.	(4.36)	130 g
GBM907-14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	10 or 250 g
GBM311-11	19.6	.	.	.	.	.	.	.	.	.	.	.	.	.	10 or 250 g
IMN RB 7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	170 g
GBM921-14	41.3	.	.	.	.	.	.	.	.	.	.	.	.	.	10 or 250 g
GBM916-9	40.6	0.0233	.	.	.	.	0.0044	.	.	.	.	.	.	.	
GBM321-11	45.2	.	.	.	.	.	.	.	.	.	.	.	.	.	10 or 250 g
GBM921-8	45.3	0.0077	.	.	.	.	0.0044	.	.	.	.	.	.	.	10 or 250 g
GBM919-12	5.3	.	.	.	.	.	.	.	.	.	.	.	.	.	
BCR 109	.	.	.	.	.	.	.	0.0081	.	.	.	.	.	.	10 or 250 g

CRM ZINC ORE WITH EXTENSIVE ANALYSIS

analysis listed in mass % T = Total * Provisional Analysis CGL: 200 g GBW: 50 g JZn-1: 100 g units

Number	Zn	Al_2O_3	CaO	T.C	Cu	F	Fe_2O_3	H_2O-	H_2O+	K_2O	MgO	MnO	Na_2O	P_2O_5	Pb	S	SiO_2	TiO_2	LOI
CGL 207	49.14	0.112	0.850	.	0.1940	.	10.45T	.	.	.	(0.068)	6.20	(0.016)	(0.026)	0.3407	31.12	(1.73)	.	.
GBW 07237	2.75	2.80	1.91	.	0.71	1.20	3.50	.	.	0.99	0.082	0.026	0.56	.	0.25	2.87	82.95	0.017	.
JZn-1 *	2.22	6.32	18.1	(1.28)	(0.0029)	.	11.8	(0.61)	(1.71)	0.83	1.94	1.49	0.45	.	0.161	(1.30T)	(43.95)	0.20	(6.61)

continued analysis listed in mg/kg

Number	Ag	As	Ba	Be	Bi	Cd	Ce	Co	Cr	Cs	Dy	Eu	Er	Ga	Gd	Ge	Ho	In	La	Li
CGL 207	33.43	167.7	(9.48)	(0.254)	309.6	910.5	(9.82)	424.4	(29.86)	(0.425)	.	.	.	(2.83)	.	(0.743)	.	152.9	(7.30)	.
GBW 07237	13.5	12.4	.	.	56.4	29.3	2.3	.	(62)	.	0.49	0.06	0.28	8.0	0.31	1.4	0.13	0.23	1.3	(86)
JZn-1 *	.	(99)	(208)	.	.	(114)	.	(24)	(21)	.	.	.	.	.	.	.	.	.	.	(19.5)

Number	Lu	Mo	Nd	Ni	Pr	Rb	Sb	Sc	Se	Sm	Sn	Sr	Tb	Te	Th	Tl	Tm	U	V	W	Y	Yb
CGL 207	.	255.6	.	11.18	(0.938)	.	(3.24)	.	.	.	.	(5.65)	.	.	(0.450)	.	.	7.86	(1.52)	.	.	.
GBW 07237	0.08	2.8	0.92	5.5	0.30	(73)	1.1	0.33	2.3	0.36	6.1	.	0.10	0.17	(1.1)	0.49	0.05	.	.	3.4	4.5	0.42
JZn-1 *	.	.		(6)	.	(42)	(31)	.	.	.	.	(358)	.	.	.	.	.	.	(24)	.	.	.

CRM ZINC ORE - EXTENSIVE ANALYSIS ON CERTIFICATE

analysis listed in mass % except * which is mg/kg

Number	Zn	Ag*	Au*	Cu	Pb	S	Units
OREAS 620	3.15	38.5	0.685	0.173	0.774	2.52	10 or 60 g

CRM ZIRCONIUM ORE

analysis listed in mass %

Number	ZrO_2	Al_2O_3	CaO	F	FeO	Fe_2O_3(T)	H_2O+	HfO_2	K_2O	MgO	MnO	Na_2O	P_2O_5	RE_xO_y*	SiO_2	TiO_2	LOI
NCS DC86316	4.68	(14.57)	0.63	0.027(F-)	0.10	0.38	0.49	0.084	3.90	0.079	0.021	4.20	0.040	0.0515	70.73	0.64	0.56
NCS DC86308	1.25	14.70	2.64	0.082	1.82	4.69	1.29	0.025	3.31	2.01	0.083	3.74	0.167	0.022	65.66	0.410	1.51
NCS DC86307	0.187	14.74	2.70	0.080	1.83	4.80	1.35	0.00421	3.37	2.10	0.085	3.83	0.163	0.018	66.02	0.420	1.55

* RE_xO_y: Rare Earth Oxide

continued analysis listed in mg/kg

Number	CeO_2	Dy_2O_3	Er_2O_3	Eu_2O_3	Gd_2O_3	Ho_2O_3	La_2O_3	Lu_2O_3	Nd_2O_3	Pr_6O_{11}	Sc_2O_3	Sm_2O_3	Tb_4O_7	Th	Tm_2O_3	W	Y_2O_3	Yb_2O_3	Units
NCS DC86316	146	14.9	16.4	0.55	9.92	3.66	69.2	6.11	53.4	15.7	10.7	10.1	2.02	202	2.84	5.01	142	25.9	70 g
NCS DC86308	74.4	4.6	4.6	1.2	(4.1)	1.3	37.9	1.5	26.9	7.8	14.8	4.9	0.74	15.2	0.92	.	41.9	7.8	70 g
NCS DC86307	70.7	2.8	1.8	1.2	3.4	0.59	36.6	0.38	27.5	7.7	14.1	4.7	0.53	7.8	0.31	.	19.5	2.2	70 g

ZIRCONIUM MATERIALS

CERAM: 25 or 100 g IGS: 50 g NCS: 20 g all others: 100 g units

Number	ZrO_2	HfO_2	ZrO_2 + HfO_2	Al_2O_3	CaO	Fe_2O_3	K_2O	MgO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI	Other
CRM														
NCS HC26618	.	.	99.48	0.009	0.17	0.054	.	0.093	.	.	0.11	.	.	
BCS 358	92.70	1.63	.	0.08	1.50	0.065	.	3.42	.	.	0.21	0.20	0.08	BaO: 0.10 SrO: 0.07
VS K7/3	.	.	92.2	(0.1)	5.39	0.73	.	.	.	.	0.65	.	.	
VS K8/2	65.9	.	.	1.16	.	0.081	.	.	.	0.110	32.3	0.163	.	S: 0.0064
IGS 35	65.86	1.368	.	.	.	.	.	.	.	.	.	0.27	.	
BCS 388	(64.9)	1.28	66.2	0.291	.	0.049	.	.	.	0.122	32.7	0.232	.	ThO_2:0.019 U_3O_8:0.034 Y_2O_3: 0.136
SARM 13	64.01	1.29	.	0.61	(0.14)	0.187	.	(0.0440)	.	0.23	32.56	0.295	.	Th: (0.0300) U:(0.0328)
RM														
CERAM 2CAS15	(63.6)	(1.28)	65.0	0.38	0.28	0.07	0.01	0.07	0.02	.	33.9	0.20	0.23	
CERAM AN46	15.41	0.32	15.68	30.52	0.20	0.85	1.03	5.34	0.15	.	45.46	0.48	0.08	Li_2O: 0.02
BCS 204A	.	.	53.8	0.74	0.15	0.18	0.017	0.012	0.014	0.77	37.6	2.22	0.50	SnO_2: 1.69

CRM ISO 17025 / 17034 ACCREDITED GEOLOGICAL SAMPLES

analysis in mass %

Number	Type	Al	Al_2O_3	Ca	CaO	Fe	$T.Fe_2O_3$	K	K_2O	Mg	MgO	Mn	MnO	Na	Na_2O	P_2O_5	Si	SiO_2
MBH-ASC-21-P	ANORTHOSITE	16.1	30.5	11.0	15.4	1.04	1.48	0.064	0.077	0.78	1.29	0.0167	0.0216	1.57	2.12	.	22.2	47.4
MBH-AU-ORE1-21-P	GOLD ORE	2.90	5.48	2.39	3.35	1.64	2.35	0.60	0.72	0.85	1.41	0.0066	0.0085	(0.0400)	.	0.143	36.8	78.8
MBH-BAS-MC-22-P	BASALT	8.84	16.7	7.05	9.87	8.6	12.3	0.69	0.83	4.80	7.96	0.145	0.187	2.49	3.36	0.722	21.8	46.6
MBH-FCT-21-P	DACITE	8.52	16.1	2.55	3.57	3.32	4.74	3.20	3.86	0.84	1.40	0.081	0.104	2.72	3.67	0.225	30.1	64.4
MBH-NSC-21-P	NORITE	13.4	25.4	10.0	14.0	2.34	3.34	0.041	0.049	4.08	6.77	0.046	0.059	0.91	1.23	.	22.5	48.1

continued analysis in mass %

Number	Ti	TiO_2	LOI
MBH-ASC-21-P	0.035	0.058	(1.34)
MBH-AU-ORE1-21-P	0.167	0.278	(6.3)
MBH-BAS-MC-22-P	1.12	1.86	(0.6)
MBH-FCT-21-P	0.344	0.573	(1.2)
MBH-NSC-21-P	0.038	0.064	(0.78)

remainder analysis in mg/gkg except as noted

Number	Ag	As	Au	Ba	Bi	C%	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu
MBH-ASC-21-P	.	.	.	32	.	.	(0.03)	1.56	6.2	56	.	17.4	0.206	(0.1)	0.22
MBH-AU-ORE1-21-P	0.21	1079	8.9	2311	0.199	(1.03)	0.96	41	4.5	45	3.76	29.9	2.47	1.34	0.7
MBH-BAS-MC-22-P	.	(3.6)	.	836	.	.	(0.09)	104	50	86	0.22	55	4.8	2.3	2.4
MBH-FCT-21-P	(0.05)	3.3	.	924	(0.1)	.	(0.07)	84	10.3	(5)	.	9	3.9	2.22	1.33
MBH-NSC-21-P	.	.	.	16.3	.	.	.	(1)	21.8	586	.	11.4	0.22	0.18	0.134

Number	Ga	Gd	Ge	Hf	Hg	Ho	La	Li	Lu	Mo	Nb	Nd	Ni	P	Pb	Pr	Rb	Re	S
MBH-ASC-21-P	15.7	(0.2)	.	0.07	.	(0.04)	(0.9)	2	(0.02)	(0.1)	.	(0.7)	36	(30)	(0.6)	(0.2)	0.93	.	.
MBH-AU-ORE1-21-P	6.4	3.1	(0.1)	3.9	11.4	0.47	23.7	30.5	0.19	10.4	5.5	19.5	30	620	6.9	5.2	33.6	(0.008)	1.65
MBH-BAS-MC-22-P	20	(6.2)	(0.6)	3.6	.	0.9	53.5	(7.6)	(0.31)	1.6	42	47	91	3150	5.7	12	9.1	.	(140)
MBH-FCT-21-P	18.5	4.6	.	5.6	.	0.74	44.2	19.5	0.33	(0.7)	15.2	34.7	(4)	980	16	9.5	104	.	.
MBH-NSC-21-P	12.1	0.19	.	(0.1)	.	(0.05)	0.52	1.4	(0.05)	.	(0.2)	(0.5)	158	(30)	(0.3)	(0.1)	0.86	.	.

Number	Sb	Sc	Sm	Sn	Sr	Ta	Tb	Te	Th	Tl	U	V	W	Y	Yb	Zn	Zr	Units
MBH-ASC-21-P	.	4.4	(0.2)	.	151	.	(0.03)	.	.	.	.	24	.	1.18	(0.1)	9.5	(2.3)	75 g
MBH-AU-ORE1-21-P	106	4.3	3.6	2.6	35	0.38	0.43	0.29	5.6	17.7	4.9	136	32	15.1	1.23	90	153	200 g
MBH-BAS-MC-22-P	(0.08)	27.1	7.8	(1.3)	978	2.13	0.85	.	6	.	1.4	247	(0.32)	24.4	2	102	158	75 g
MBH-FCT-21-P	(0.3)	8.1	6	1.7	526	1.02	0.66	.	10.8	(0.4)	3.6	69	(0.6)	21.8	2.2	68	209	75 g
MBH-NSC-21-P	.	11	0.13	.	97	.	(0.03)	.	(0.09)	.	(0.04)	44	.	1.37	(0.2)	17.9	2.8	75 g