

Report: A08-3178  
 Report Date: 7/9/2008

**Final Report**  
**Activation Laboratories**

Analyte Symbol	Au	As	Br	Cr	Fe	Ir	Na	Sb	Sc	Se	Ta	U	Mass	V	Cr	Co	Ni	Cu	Zn	Ga	Ge	As
Unit Symbol	ppb	ppm	ppm	ppm	%	ppb	%	ppm	ppm	ppm	ppm	ppm	g	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	2	0.5	0.5	5	0.01	5	0.01	0.2	0.1	3	0.5	0.5		5	20	1	20	10	30	1	1	5
Analysis Method	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
1	<2	4	<0.5	<5	4.76	44	1.29	0.6	2.7	4	149	157	1.56	9	20	6	60	20	50	29	<1	<5
2	<2	<0.5	<0.5	29	3.45	43	0.7	0.4	1.8	<3	153	129	1.68	6	20	5	<20	20	60	30	<1	<5
3	<2	<0.5	<0.5	32	3.06	52	0.49	0.5	1.9	<3	134	108	1.51	<5	20	4	<20	20	80	31	<1	<5
4	<2	2.3	<0.5	53	7.56	38	2.02	<0.2	5.2	<3	131	125	1.59	15	20	10	<20	20	130	27	1	<5
5	<2	3.1	<0.5	32	3.17	54	0.28	0.6	1.3	5	137	91.8	1.27	<5	30	24	<20	50	70	31	<1	<5
6														15	<20	14	<20	30	110	27	<1	<5
7														19	<20	7	<20	20	210	26	1	6
8														15	<20	2	<20	10	<30	25	1	6
9A														<5	<20	7	<20	20	30	29	<1	<5
10														23	<20	15	<20	30	200	24	1	6
11														18	<20	13	<20	30	240	21	1	<5
12														15	<20	9	<20	20	160	26	<1	7
13														13	<20	11	<20	30	220	21	1	6
14														14	<20	10	<20	30	230	25	1	<5
15														31	20	9	<20	20	200	29	<1	<5

**Final Report**  
**Activation Laboratories**

Analyte Symbol	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	2	2	1	5	1	2	0.5	0.2	1	0.5	0.5	3	0.1	0.1	0.05	0.1	0.1	0.05
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
1	339	1050	18	1180	> 1000	3	< 0.5	< 0.2	11	< 0.5	1	1270	118	227	23.3	61	9.2	2.45
2	401	887	23	712	> 1000	4	0.7	< 0.2	7	< 0.5	1.3	2000	71.6	152	16.3	45.2	8	2.4
3	407	674	20	1230	> 1000	3	< 0.5	< 0.2	5	< 0.5	1.3	3040	86.4	180	19	53.8	8.6	2.45
4	246	1350	18	1370	> 1000	2	< 0.5	< 0.2	19	< 0.5	1.6	1060	77.7	175	19.7	54.8	9.6	2.75
5	468	546	16	1330	> 1000	< 2	0.6	< 0.2	2	< 0.5	2.4	1970	100	174	17	47.2	7.4	2.15
6	268	864	15	1360	> 1000	2	< 0.5	< 0.2	20	< 0.5	1.4	1040	62.1	132	14.4	42.5	7.4	2.15
7	223	1420	36	1610	> 1000	2	< 0.5	< 0.2	24	< 0.5	0.9	657	108	252	30.6	102	19.4	5.59
8	277	1040	80	1750	> 1000	< 2	< 0.5	< 0.2	17	< 0.5	< 0.5	670	220	513	55.3	184	35.4	10.5
9A	433	884	22	2190	> 1000	< 2	< 0.5	< 0.2	3	< 0.5	1.1	2610	110	208	21	52.1	8.5	2.3
10	160	1320	24	1190	> 1000	3	< 0.5	< 0.2	24	< 0.5	1.3	761	68.2	165	18.7	55.5	10	2.96
11	152	1440	17	1660	> 1000	< 2	0.6	< 0.2	20	< 0.5	0.7	918	69	161	17.8	51.4	8.7	2.55
12	192	1650	16	1370	> 1000	2	1.2	< 0.2	22	< 0.5	1.6	1700	65.7	154	17.1	49.9	8.4	2.41
13	176	859	13	1430	> 1000	< 2	< 0.5	< 0.2	24	< 0.5	1.9	1020	43	110	12.7	38.6	6.8	1.99
14	160	972	17	833	> 1000	3	0.8	< 0.2	22	< 0.5	1.1	919	51.4	134	15.4	45.9	8.2	2.38
15	343	429	10	1850	> 1000	< 2	< 0.5	< 0.2	10	< 0.5	2.7	1720	30.9	77.3	8.56	25.8	4.5	1.29

Report: A08-3178  
 Report Date: 7/9

**Final Report**  
**Activation Laboratories**

Analyte Symbol											Equivalent	Equivalent	Equivalent				
	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Nb	Nb2O5	Nb2O5	Ta	Ta2O5	W	Tl	Pb
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.04	0.2	1			0.1		1	0.1	5
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	PPXRF	Calculated		FUS-MS		FUS-MS	FUS-MS	FUS-MS
1	5	0.6	3.3	0.6	2	0.36	2.7	0.49	12.6	3670	5243	0.52%	157	192	2	0.4	65
2	5.2	0.7	4	0.8	2.6	0.46	3.3	0.53	8.5	2800	4000	0.40%	153	187	1	0.6	124
3	5.2	0.7	3.5	0.7	2.3	0.39	2.8	0.42	13.3	2480	3543	0.35%	137	167	< 1	0.5	130
4	5.8	0.7	3.7	0.7	2.2	0.41	3.5	0.72	11.1	3590	5129	0.51%	134	164	< 1	0.3	66
5	4.4	0.6	3	0.6	1.8	0.31	2.3	0.42	12.5	2380	3400	0.34%	137	167	4	0.6	40
6	4.5	0.6	2.9	0.6	1.8	0.35	3.2	0.71	15.5	4910	7014	0.70%	167	204	1	0.3	74
7	12.9	1.6	7.4	1.3	3.9	0.63	4.8	0.86	16	4170	5957	0.60%	141	172	2	0.3	88
8	24.1	3.2	16	3	8.7	1.27	8.2	1.17	18.1	1500	2143	0.21%	71.1	87	5	0.4	39
9A	4.9	0.7	3.5	0.8	2.7	0.52	3.9	0.67	20.9	2360	3371	0.34%	132	161	2	0.8	66
10	6.5	0.9	4.5	0.9	3	0.65	6.2	1.35	8.1	5820	8314	0.83%	168	205	< 1	0.2	72
11	5.2	0.7	3.4	0.7	2.3	0.54	5.6	1.27	14	4620	6600	0.66%	193	236	< 1	0.2	115
12	5.2	0.6	3.1	0.6	2.1	0.44	4.4	0.97	13.8	3930	5614	0.56%	161	197	< 1	0.3	88
13	4.2	0.5	2.7	0.6	1.9	0.46	4.8	1.11	10.9	4040	5771	0.58%	161	197	< 1	0.2	101
14	5	0.7	3.3	0.7	2.3	0.57	5.7	1.27	6.2	5110	7300	0.73%	166	203	< 1	0.3	105
15	2.8	0.4	1.9	0.4	1.3	0.24	2	0.38	19.9	2710	3871	0.39%	151	184	< 1	0.3	43

Report: A08-3178  
Report Date: 7/9

## Final Report Activation Laboratories

Analyte Symbol	Bi	Th	U
Unit Symbol	ppm	ppm	ppm
Detection Limit	0.4	0.1	0.1
Analysis Method	FUS-MS	FUS-MS	FUS-MS
1	0.5	186	139
2	< 0.4	124	110
3	< 0.4	143	90.3
4	< 0.4	151	102
5	< 0.4	114	72.5
6	0.6	251	158
7	1	244	132
8	< 0.4	107	63.7
9A	< 0.4	103	73.7
10	0.8	374	166
11	0.4	403	170
12	0.8	347	143
13	< 0.4	251	177
14	0.6	380	146
15	< 0.4	158	95.2