



**BUREAU
VERITAS**

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MINERAL TESTING & LABORATORY SERVICES

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Reference: **aa036412.e**
Date Finished: 09/08/2018
Order: NC_016
Project: Arunta Project
Date Received: 12/07/2018
Type of Sample: Soil
Samples Analysed: **96**

FINAL ANALYSIS REPORT

Analysis of Mineral Samples

for

Northern Cobalt Ltd

67 Goodwood Road WAYVILLE SA 5034

Attention: Mr Duncan Chessell

Authorised By:

Vaughn Noble
Senior Chemist

Christopher Abbott
Senior Chemist

Jenet Hwende
Technical Quality
Manager



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Method	PF102	PF102	PF101	PF102	PF102	PF101	PF102	PF102
Result Name	Ag	As	Ba	Be	Bi	Ca	Cd	Co
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	5	5	5	1	1	1000	10	10
BLANK 1	<5	<5	<5	<1	<1	<1000	<10	<10
SA2300	<5	<5	405	1	<1	5600	<10	<10
SA2301	<5	5	285	1	<1	2900	<10	10
SA2302	<5	10	320	2	<1	1900	<10	<10
SA2303	<5	15	325	2	<1	2400	<10	<10
SA2304	<5	30	340	2	<1	2500	<10	<10
SA2305	<5	20	345	1	<1	2300	<10	<10
SA2305 Rpt	<5	10	345	1	<1	2300	<10	<10
SA2306	<5	20	340	1	<1	2300	<10	<10
SA2307	<5	20	300	<1	<1	1300	<10	<10
SA2308	<5	10	450	1	<1	3000	<10	<10
SA2309	<5	15	365	1	<1	2000	<10	<10
SA2310	<5	20	360	1	<1	2200	<10	<10
Std Nominal	<5	675	2.94%					730
Determined	<5	670	2.94%	<1	14	3.44%	<10	660
SA2311	<5	20	380	1	<1	2000	<10	<10
SA2312	<5	20	340	1	<1	1800	<10	<10
SA2313	<5	15	340	1	<1	1600	<10	<10
SA2314	<5	20	355	<1	<1	1700	<10	<10
SA2315	<5	10	345	2	<1	2000	<10	<10
Std Nominal	50	305		2	21	1.31%	<10	<10
Determined	55	305	3750	2	22	1.22%	<10	<10
SA2316	<5	15	335	2	<1	2000	<10	<10
SA2317	<5	5	330	1	<1	1800	<10	<10
SA2318	<5	25	315	3	<1	1700	<10	<10
SA2319	<5	25	340	1	<1	1600	<10	<10
SA2320	<5	15	315	1	<1	1900	<10	<10
SA2321	<5	20	305	2	<1	1600	<10	<10
SA2322	<5	10	280	2	<1	1500	<10	<10
SA2323	<5	15	290	1	<1	1600	<10	<10
SA2324	<5	<5	280	1	<1	1400	<10	<10
SA2325	<5	10	280	1	<1	1100	<10	<10
SA2326	<5	<5	295	1	<1	1700	<10	<10
SA2327	<5	<5	300	2	<1	1500	<10	<10
SA2327 Rpt	<5	<5	320	2	<1	1500	<10	<10
SA2328	<5	<5	365	1	<1	2000	<10	<10
SA2329	<5	20	330	1	<1	1600	<10	<10
Std Nominal	<5	5	430	3	1	5600		10
Determined	<5	<5	425	3	2	5800	<10	10
SA2330	<5	<5	445	1	<1	1800	<10	<10
SA2331	<5	<5	345	2	<1	1600	<10	<10



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Method	PF102	PF102	PF101	PF102	PF102	PF101	PF102	PF102
Result Name	Ag	As	Ba	Be	Bi	Ca	Cd	Co
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	5	5	5	1	1	1000	10	10
SA2332	<5	10	450	3	<1	2100	<10	<10
SA2333	<5	<5	420	2	<1	1700	<10	<10
SA2334	<5	10	360	2	<1	1900	<10	<10
Std Nominal	<5	10	710	2	5	2.74%	<10	20
Determined	<5	25	720	2	5	2.74%	<10	20
SA2335	<5	10	390	3	<1	2400	<10	<10
SA2336	<5	25	425	2	<1	2400	<10	10
SA2337	<5	20	420	3	<1	2100	<10	10
SA2338	<5	25	585	3	<1	3100	<10	10
SA2339	<5	15	430	2	<1	1900	<10	<10
SA2340	<5	10	430	2	<1	2200	<10	<10
SA2341	<5	<5	440	1	<1	1800	<10	<10
SA2342	<5	<5	590	2	<1	2900	<10	<10
SA2343	<5	<5	570	1	1	2400	<10	<10
SA2344	<5	<5	555	2	<1	2300	<10	<10
SA2345	<5	15	520	2	<1	2400	<10	<10
SA2346	<5	20	330	2	<1	3400	<10	<10
SA2347	<5	15	345	2	<1	2500	<10	<10
SA2348	<5	10	315	2	<1	2100	<10	<10
BLANK 2	<5	<5	<5	<1	<1	<1000	<10	<10
SA2349	<5	<5	355	3	<1	3500	<10	<10
SA2349DUP	<5	15	355	3	<1	3600	<10	20
SA2350	<5	10	340	3	<1	2800	<10	10
SA2351	<5	15	345	2	<1	1700	<10	<10
SA2352	<5	<5	355	2	<1	2700	<10	<10
Std Nominal	<5	675	2.94%					730
Determined	<5	665	2.94%	<1	16	3.44%	<10	800
SA2353	<5	<5	365	2	<1	2200	<10	<10
SA2354	<5	<5	330	2	<1	1400	<10	<10
SA2355	<5	<5	360	2	<1	1900	<10	<10
SA2356	<5	15	380	2	<1	1700	<10	<10
SA2357	<5	<5	475	1	<1	1900	<10	<10
SA2358	<5	<5	495	4	<1	2400	<10	10
Std Nominal	50	305		2	21	1.31%	<10	<10
Determined	50	310	4020	2	20	1.28%	<10	<10
SA2359	<5	<5	575	3	<1	3700	<10	10
SA2360	<5	<5	550	3	<1	4300	<10	<10
SA2360 Rpt	<5	<5	550	2	<1	4200	<10	<10
SA2361	<5	<5	490	3	<1	5800	<10	<10
SA2362	<5	<5	500	2	<1	3500	<10	<10
SA2363	<5	<5	450	1	<1	2800	<10	<10



Reference: aa036412.e Order Number: NC_016 Page 3 of 22

Method	PF102	PF102	PF101	PF102	PF102	PF101	PF102	PF102
Result Name	Ag	As	Ba	Be	Bi	Ca	Cd	Co
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	5	5	5	1	1	1000	10	10
SA2364	<5	<5	495	3	<1	3500	<10	<10
SA2365	<5	<5	530	1	<1	3000	<10	<10
SA2366	<5	10	510	1	<1	3700	<10	10
SA2367	<5	<5	545	2	<1	3200	<10	<10
SA2368	<5	<5	460	2	<1	2900	<10	<10
SA2369	<5	<5	485	2	<1	2200	<10	<10
SA2370	<5	<5	450	1	<1	2300	<10	<10
SA2371	<5	<5	385	1	<1	3200	<10	<10
SA2372	<5	<5	350	1	<1	1600	<10	<10
SA2373	<5	<5	360	2	<1	1700	<10	<10
SA2374	<5	10	370	2	<1	1200	<10	<10
Std Nominal	<5	5	430	3	1	5600		10
Determined	<5	<5	420	3	1	5500	<10	10
SA2375	<5	<5	370	2	<1	1800	<10	<10
SA2376	<5	<5	325	2	<1	1600	<10	<10
SA2376 Rpt	<5	<5	330	2	<1	1600	<10	<10
SA2377	<5	10	340	2	<1	1800	<10	<10
SA2378	<5	<5	320	1	<1	1600	<10	<10
SA2379	<5	<5	315	2	<1	1600	<10	<10
SA2380	<5	<5	315	1	<1	1600	<10	<10
SA2381	<5	<5	305	2	<1	1700	<10	<10
SA2382	<5	<5	305	2	<1	1600	<10	<10
SA2383	<5	<5	320	1	<1	1800	<10	<10
SA2384	<5	<5	330	1	<1	1600	<10	<10
Std Nominal	<5	10	710	2	5	2.74%	<10	20
Determined	<5	10	720	2	5	2.79%	<10	20
SA2385	<5	<5	325	<1	<1	1500	<10	<10
SA2386	<5	<5	325	1	<1	1500	<10	<10
SA2387	<5	<5	365	2	<1	2600	<10	<10
SA2388	<5	<5	365	2	<1	3100	<10	<10
SA2389	<5	10	380	1	<1	2900	<10	<10
SA2390	<5	<5	375	4	<1	2900	<10	<10
SA2391	<5	<5	435	1	<1	3000	<10	<10
SA2392	<5	<5	440	1	<1	3000	<10	<10
SA2393	<5	<5	425	1	<1	3000	<10	<10
SA2394	<5	<5	405	1	<1	3800	<10	<10



Reference: aa036412.e Order Number: NC_016 Page 4 of 22

Method	PF101	PF102	PF102	PF101	PF102	PF102	PF102	PF101
Result Name	Cr	Cs	Cu	Fe	Ge	Hf	In	K
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	10	1	10	100	20	2	0.2	1000
BLANK 1	<10	<1	<10	<100	<20	<2	<0.2	<1000
SA2300	80	5	<10	3.05%	<20	12	<0.2	2.30%
SA2301	100	4	20	2.43%	<20	8	<0.2	2.30%
SA2302	80	4	20	2.28%	<20	12	<0.2	2.50%
SA2303	80	4	20	2.56%	<20	10	<0.2	2.40%
SA2304	80	4	20	2.49%	<20	14	<0.2	2.40%
SA2305	40	4	20	2.24%	<20	12	<0.2	2.40%
SA2305 Rpt	40	3	20	2.29%	<20	12	<0.2	2.30%
SA2306	60	3	20	2.35%	<20	12	<0.2	2.40%
SA2307	60	4	20	1.93%	<20	12	0.4	2.50%
SA2308	100	2	20	2.11%	<20	20	<0.2	2.70%
SA2309	60	2	20	1.78%	<20	10	<0.2	2.40%
SA2310	80	2	20	2.16%	<20	10	<0.2	2.20%
Std Nominal	30	<1	2.53%			2	0.6	2.50%
Determined	20	<1	2.31%	30.0%	<20	2	0.4	2.60%
SA2311	80	2	20	2.09%	<20	8	<0.2	2.40%
SA2312	80	2	30	1.89%	<20	12	<0.2	2.30%
SA2313	40	2	20	1.89%	<20	10	<0.2	2.40%
SA2314	80	2	20	1.80%	<20	10	<0.2	2.40%
SA2315	60	3	20	2.13%	<20	8	<0.2	2.20%
Std Nominal	40	7	1010	2.48%	<20	4	1.8	2.10%
Determined	60	7	960	2.42%	<20	4	1.6	2.00%
SA2316	80	3	20	2.03%	<20	10	<0.2	2.00%
SA2317	60	3	20	2.28%	<20	10	<0.2	2.00%
SA2318	80	3	20	2.15%	<20	10	<0.2	2.00%
SA2319	60	2	20	2.33%	<20	10	<0.2	2.10%
SA2320	80	3	20	2.54%	<20	10	<0.2	2.20%
SA2321	40	3	20	2.43%	<20	10	<0.2	2.20%
SA2322	60	3	20	2.49%	<20	10	<0.2	2.30%
SA2323	60	4	20	2.71%	<20	12	<0.2	2.30%
SA2324	60	4	20	2.55%	<20	12	<0.2	2.50%
SA2325	60	3	20	2.27%	<20	14	<0.2	2.50%
SA2326	60	3	20	2.38%	<20	12	<0.2	2.50%
SA2327	40	3	20	2.60%	<20	16	<0.2	2.40%
SA2327 Rpt	40	3	20	2.66%	<20	16	<0.2	2.50%
SA2328	60	3	20	2.33%	<20	12	<0.2	2.70%
SA2329	60	3	20	2.46%	<20	12	<0.2	2.70%
Std Nominal	100	6	260	4.34%		4		2.90%
Determined	80	7	280	4.21%	<20	4	<0.2	2.80%
SA2330	60	3	20	2.74%	<20	14	<0.2	2.70%
SA2331	240	3	20	2.78%	<20	14	<0.2	3.10%



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Method	PF101	PF102	PF102	PF101	PF102	PF102	PF102	PF101
Result Name	Cr	Cs	Cu	Fe	Ge	Hf	In	K
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	10	1	10	100	20	2	0.2	1000
SA2332	220	3	20	2.90%	<20	16	<0.2	3.10%
SA2333	40	3	20	2.56%	<20	16	<0.2	3.30%
SA2334	100	3	30	2.76%	<20	14	<0.2	3.50%
Std Nominal	70	5	1.11%	7.33%		<2	0.8	2.90%
Determined	80	5	1.08%	7.55%	<20	2	0.6	3.00%
SA2335	60	3	30	3.16%	<20	14	<0.2	3.10%
SA2336	100	3	30	2.76%	<20	12	<0.2	3.50%
SA2337	60	3	30	2.59%	<20	12	<0.2	3.00%
SA2338	60	3	30	3.21%	<20	8	<0.2	2.60%
SA2339	60	3	20	2.32%	<20	10	<0.2	2.80%
SA2340	80	2	20	2.43%	<20	12	<0.2	2.30%
SA2341	180	3	20	2.71%	<20	10	<0.2	2.30%
SA2342	80	3	20	2.49%	<20	12	<0.2	3.00%
SA2343	80	2	20	2.33%	<20	14	<0.2	2.70%
SA2344	120	2	20	2.32%	<20	12	<0.2	2.70%
SA2345	60	3	20	2.59%	<20	14	<0.2	2.40%
SA2346	60	4	30	3.05%	<20	10	0.4	1.60%
SA2347	60	3	20	2.52%	<20	12	<0.2	1.50%
SA2348	60	3	20	3.03%	<20	12	<0.2	1.60%
BLANK 2	<10	<1	<10	<100	<20	<2	<0.2	<1000
SA2349	60	4	30	3.40%	<20	10	<0.2	1.80%
SA2349DUP	60	4	40	3.44%	<20	10	<0.2	1.70%
SA2350	60	3	40	2.82%	<20	10	<0.2	1.70%
SA2351	100	2	20	2.64%	<20	8	<0.2	1.80%
SA2352	40	3	30	3.24%	<20	10	<0.2	1.90%
Std Nominal	30	<1	2.53%			2	0.6	2.50%
Determined	20	<1	2.71%	28.9%	<20	2	0.4	2.60%
SA2353	120	2	30	1.99%	<20	10	<0.2	1.70%
SA2354	40	3	30	2.71%	<20	10	<0.2	2.10%
SA2355	100	3	20	2.51%	<20	10	<0.2	2.50%
SA2356	60	3	20	2.74%	<20	8	<0.2	3.10%
SA2357	100	3	20	2.70%	<20	14	<0.2	2.90%
SA2358	40	3	20	3.58%	<20	16	<0.2	2.60%
Std Nominal	40	7	1010	2.48%	<20	4	1.8	2.10%
Determined	60	6	1040	2.50%	<20	6	1.6	2.00%
SA2359	80	3	20	4.03%	<20	12	<0.2	3.00%
SA2360	40	3	20	3.44%	<20	12	<0.2	3.20%
SA2360 Rpt	40	3	20	3.42%	<20	10	<0.2	3.20%
SA2361	40	4	20	4.02%	<20	10	<0.2	2.90%
SA2362	60	3	20	3.02%	<20	8	<0.2	3.30%
SA2363	100	2	20	2.50%	<20	10	<0.2	3.30%



Reference: aa036412.e Order Number: NC_016 Page 6 of 22

Method	PF101	PF102	PF102	PF101	PF102	PF102	PF102	PF101
Result Name	Cr	Cs	Cu	Fe	Ge	Hf	In	K
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	10	1	10	100	20	2	0.2	1000
SA2364	60	3	20	3.40%	<20	10	<0.2	3.10%
SA2365	140	3	20	3.06%	<20	10	<0.2	3.20%
SA2366	60	3	20	3.66%	<20	12	<0.2	3.00%
SA2367	140	3	30	3.38%	<20	12	<0.2	3.20%
SA2368	60	3	20	3.36%	<20	12	<0.2	2.90%
SA2369	100	2	20	2.81%	<20	12	<0.2	3.20%
SA2370	80	2	20	2.85%	<20	14	<0.2	3.10%
SA2371	140	2	20	2.46%	<20	14	<0.2	2.70%
SA2372	60	3	20	2.77%	<20	14	<0.2	2.20%
SA2373	100	3	20	2.77%	<20	14	<0.2	2.10%
SA2374	60	2	30	2.43%	<20	12	<0.2	2.30%
Std Nominal	100	6	260	4.34%		4		2.90%
Determined	80	7	270	4.15%	<20	4	<0.2	2.90%
SA2375	120	2	20	2.33%	<20	12	<0.2	2.40%
SA2376	80	3	20	2.45%	<20	12	<0.2	2.70%
SA2376 Rpt	80	3	20	2.46%	<20	12	<0.2	2.80%
SA2377	80	3	20	2.73%	<20	12	<0.2	2.40%
SA2378	60	3	20	2.53%	<20	14	<0.2	2.40%
SA2379	100	3	20	2.45%	<20	14	<0.2	2.30%
SA2380	60	2	20	2.08%	<20	12	<0.2	2.50%
SA2381	100	2	20	2.26%	<20	16	<0.2	2.50%
SA2382	220	2	20	2.39%	<20	16	<0.2	2.30%
SA2383	100	2	20	2.27%	<20	14	<0.2	2.30%
SA2384	60	2	20	2.29%	<20	14	<0.2	2.30%
Std Nominal	70	5	1.11%	7.33%		<2	0.8	2.90%
Determined	80	5	1.09%	7.58%	<20	2	0.8	3.00%
SA2385	100	2	20	2.37%	<20	12	0.8	2.50%
SA2386	60	3	20	2.38%	<20	12	<0.2	2.20%
SA2387	140	2	20	2.08%	<20	14	<0.2	2.10%
SA2388	80	2	20	2.35%	<20	16	<0.2	2.30%
SA2389	140	2	20	2.47%	<20	12	<0.2	2.30%
SA2390	100	2	20	2.18%	<20	14	<0.2	2.30%
SA2391	160	2	40	2.62%	<20	12	<0.2	2.50%
SA2392	80	2	20	2.68%	<20	12	<0.2	2.40%
SA2393	120	2	20	2.79%	<20	12	<0.2	2.30%
SA2394	60	2	20	3.14%	<20	14	<0.2	2.30%



Reference: aa036412.e Order Number: NC_016 Page 7 of 22

Method	PF101	PF101	PF101	PF102	PF102	PF102	PF101	PF102
Result Name	Li	Mg	Mn	Mo	Nb	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	10	100	10	5	5	20	100	10
BLANK 1	<10	<100	<10	<5	<5	<20	100	<10
SA2300	50	4800	390	<5	10	20	300	30
SA2301	10	2700	350	<5	10	40	300	30
SA2302	<10	1800	250	<5	15	20	100	30
SA2303	10	2300	300	<5	15	40	200	30
SA2304	<10	2400	310	<5	15	40	300	30
SA2305	<10	2200	310	<5	15	40	200	30
SA2305 Rpt	<10	2100	310	<5	15	40	200	30
SA2306	<10	2100	260	<5	15	40	100	30
SA2307	<10	1600	120	<5	15	20	200	30
SA2308	10	1800	290	<5	15	20	300	20
SA2309	<10	1500	230	<5	10	20	100	20
SA2310	<10	2300	320	<5	10	20	100	20
Std Nominal				390	5	80	1000	40
Determined	10	1.07%	4520	370	5	80	1200	40
SA2311	<10	1800	250	<5	10	20	100	20
SA2312	<10	1700	250	<5	10	20	300	20
SA2313	<10	1800	230	<5	10	20	200	20
SA2314	<10	1900	220	<5	10	40	200	20
SA2315	<10	2400	310	<5	10	20	200	20
Std Nominal	20	3900	480	<5	15	20	500	330
Determined	20	3700	510	5	15	40	600	330
SA2316	20	2200	290	<5	10	20	200	20
SA2317	<10	2000	360	<5	10	40	300	20
SA2318	10	2100	310	<5	10	20	300	30
SA2319	<10	2000	320	<5	15	20	200	20
SA2320	<10	2000	330	<5	15	20	200	30
SA2321	20	1900	290	<5	15	20	200	30
SA2322	<10	1900	260	<5	15	20	200	30
SA2323	<10	2000	330	<5	15	40	300	30
SA2324	<10	1800	290	<5	15	20	100	30
SA2325	<10	1500	200	<5	15	20	300	30
SA2326	<10	1800	350	<5	15	20	100	30
SA2327	<10	1800	330	<5	20	20	100	30
SA2327 Rpt	<10	1700	340	<5	20	20	300	30
SA2328	<10	2100	360	<5	15	20	200	30
SA2329	<10	1900	230	<5	15	20	200	30
Std Nominal	30	1.57%	700		15	40	700	<10
Determined	20	1.51%	670	<5	20	40	700	<10
SA2330	<10	2000	280	<5	15	20	200	30
SA2331	<10	1900	200	<5	20	20	200	60



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Method	PF101	PF101	PF101	PF102	PF102	PF102	PF101	PF102
Result Name	Li	Mg	Mn	Mo	Nb	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	10	100	10	5	5	20	100	10
SA2332	<10	2600	380	<5	20	20	300	230
SA2333	20	2000	150	<5	15	20	300	40
SA2334	<10	2200	280	<5	15	20	200	30
Std Nominal	20	1.66%	540	500	10	40	1000	30
Determined	10	1.72%	560	495	10	40	900	20
SA2335	<10	2700	450	<5	15	20	300	30
SA2336	<10	2500	370	<5	15	40	100	20
SA2337	10	2200	320	<5	15	40	200	20
SA2338	10	5700	510	<5	10	40	200	20
SA2339	10	2100	280	<5	10	40	200	20
SA2340	<10	2200	320	<5	10	40	200	20
SA2341	<10	2200	360	<5	10	40	300	20
SA2342	10	3100	490	<5	15	40	300	20
SA2343	<10	2200	440	<5	15	20	100	20
SA2344	10	2200	350	<5	15	20	200	20
SA2345	<10	2900	390	<5	15	20	200	20
SA2346	30	5300	360	<5	10	40	200	20
SA2347	<10	3500	510	<5	10	40	300	20
SA2348	10	2700	360	<5	15	40	200	20
BLANK 2	<10	<100	<10	<5	<5	<20	<100	<10
SA2349	20	4100	560	<5	10	40	300	20
SA2349DUP	20	4100	550	<5	15	20	300	20
SA2350	10	3600	370	<5	10	40	200	20
SA2351	<10	2100	350	<5	10	40	300	10
SA2352	10	3400	390	<5	15	40	200	20
Std Nominal				390	5	80	1000	40
Determined	20	1.00%	4740	385	5	80	900	40
SA2353	<10	1600	240	<5	10	20	300	10
SA2354	<10	1800	350	<5	10	20	200	20
SA2355	<10	2400	330	<5	10	20	100	20
SA2356	10	2600	360	<5	10	20	200	20
SA2357	20	2300	490	<5	15	20	200	20
SA2358	10	2800	600	<5	15	40	300	30
Std Nominal	20	3900	480	<5	15	20	500	330
Determined	<10	4000	490	5	15	40	500	320
SA2359	<10	3200	570	<5	20	20	300	20
SA2360	<10	2600	510	<5	15	20	200	20
SA2360 Rpt	<10	2500	500	<5	15	20	200	20
SA2361	20	3600	510	<5	15	20	100	20
SA2362	10	2200	410	<5	15	20	200	20
SA2363	<10	1500	340	<5	15	20	200	20



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Method	PF101	PF101	PF101	PF102	PF102	PF102	PF101	PF102
Result Name	Li	Mg	Mn	Mo	Nb	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	10	100	10	5	5	20	100	10
SA2364	<10	1900	470	<5	15	20	200	20
SA2365	<10	1700	410	<5	15	40	100	20
SA2366	20	2800	560	<5	15	20	200	20
SA2367	10	3300	430	<5	15	20	200	20
SA2368	10	2600	480	<5	15	20	300	20
SA2369	<10	1700	360	<5	15	20	100	20
SA2370	<10	1600	420	<5	20	20	100	20
SA2371	<10	1800	330	<5	15	40	200	30
SA2372	10	1900	330	<5	15	20	200	20
SA2373	<10	2000	360	<5	15	200	200	20
SA2374	10	1700	340	<5	15	20	200	20
Std Nominal	30	1.57%	700		15	40	700	<10
Determined	10	1.46%	670	<5	15	60	600	<10
SA2375	20	1600	370	<5	15	20	200	20
SA2376	<10	1700	320	<5	15	20	200	30
SA2376 Rpt	10	1800	310	<5	15	20	<100	30
SA2377	<10	2000	310	<5	15	20	200	20
SA2378	<10	1900	380	<5	15	60	200	20
SA2379	<10	2000	300	<5	20	20	<100	30
SA2380	<10	1500	290	<5	20	20	200	20
SA2381	10	1500	290	<5	20	20	200	30
SA2382	<10	1700	300	<5	20	60	<100	20
SA2383	<10	1700	320	<5	15	20	100	20
SA2384	<10	1600	310	<5	15	20	200	20
Std Nominal	20	1.66%	540	500	10	40	1000	30
Determined	10	1.70%	560	470	10	40	900	20
SA2385	<10	1700	320	<5	15	20	200	20
SA2386	20	1900	260	<5	15	20	200	20
SA2387	<10	1800	280	<5	15	20	<100	20
SA2388	20	2100	330	<5	15	20	200	20
SA2389	<10	2200	400	<5	15	20	200	20
SA2390	<10	2100	320	<5	15	20	200	20
SA2391	20	1800	340	<5	20	20	200	20
SA2392	<10	2300	390	<5	15	20	200	20
SA2393	20	2000	400	<5	15	20	300	20
SA2394	<10	4200	390	<5	20	20	200	20



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Method	PF102	PF102	PF101	PF102	PF101	PF101	PF102	PF102
Result Name	Rb	Re	S	Sb	Sc	Si	Sn	Sr
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.5	1	100	10	10	100	10	1
BLANK 1	0.5	<1	<100	<10	<10	100	<10	<1
SA2300	147	<1	500	<10	<10	33.1%	<10	71
SA2301	157	<1	<100	<10	<10	29.2%	<10	60
SA2302	205	<1	<100	<10	<10	29.9%	<10	58
SA2303	198	<1	200	<10	<10	28.9%	<10	59
SA2304	203	<1	500	<10	<10	28.8%	<10	64
SA2305	185	<1	<100	<10	<10	32.0%	<10	60
SA2305 Rpt	184	<1	200	<10	<10	31.5%	<10	57
SA2306	187	<1	<100	<10	<10	31.0%	<10	65
SA2307	206	<1	<100	<10	<10	30.8%	<10	57
SA2308	158	<1	800	<10	<10	34.4%	<10	61
SA2309	167	<1	<100	<10	<10	31.2%	<10	63
SA2310	150	<1	<100	<10	<10	32.1%	<10	68
Std Nominal	67.0		5.58%		<10		10	287
Determined	60.5	<1	5.58%	10	10	12.9%	10	270
SA2311	167	<1	400	<10	<10	35.9%	<10	63
SA2312	152	<1	<100	<10	<10	33.9%	<10	61
SA2313	162	<1	200	<10	<10	34.4%	<10	63
SA2314	153	<1	200	<10	<10	33.5%	<10	60
SA2315	157	<1	200	<10	<10	33.4%	<10	65
Std Nominal	97.0	<1	1.07%	30	<10	32.4 %	<10	230
Determined	98.5	<1	1.07%	30	<10	31.6%	<10	243
SA2316	137	<1	400	<10	<10	32.1%	<10	70
SA2317	137	<1	<100	<10	<10	33.2%	<10	69
SA2318	152	<1	500	<10	<10	32.3%	<10	70
SA2319	141	<1	300	<10	<10	34.7%	<10	60
SA2320	170	<1	200	<10	<10	33.2%	<10	60
SA2321	185	<1	<100	<10	<10	33.2%	<10	61
SA2322	206	<1	<100	<10	<10	34.0%	<10	60
SA2323	200	<1	200	<10	<10	33.4%	<10	63
SA2324	210	<1	<100	<10	<10	31.8%	<10	58
SA2325	216	<1	500	<10	<10	33.6%	<10	57
SA2326	211	<1	<100	<10	<10	32.3%	<10	59
SA2327	204	<1	200	<10	<10	30.6%	<10	59
SA2327 Rpt	220	<1	300	<10	<10	31.0%	<10	63
SA2328	187	<1	<100	<10	<10	32.4%	<10	62
SA2329	195	<1	<100	<10	<10	35.3%	<10	59
Std Nominal	198		800	<10	10	31.6 %	<10	35
Determined	199	<1	1100	<10	10	31.3%	<10	42
SA2330	196	<1	<100	<10	<10	36.7%	<10	57
SA2331	245	<1	600	<10	<10	34.4%	<10	52



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Method	PF102	PF102	PF101	PF102	PF101	PF101	PF102	PF102
Result Name	Rb	Re	S	Sb	Sc	Si	Sn	Sr
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.5	1	100	10	10	100	10	1
SA2332	238	<1	200	<10	<10	34.7%	<10	66
SA2333	221	<1	300	<10	<10	36.2%	<10	67
SA2334	233	<1	400	<10	10	34.0%	<10	59
Std Nominal	106	<1	1.31%	<10			10	423
Determined	107	<1	1.31%	<10	10	27.1%	10	423
SA2335	222	<1	<100	<10	<10	34.0%	<10	68
SA2336	221	<1	<100	<10	<10	33.8%	<10	52
SA2337	158	<1	<100	<10	<10	36.9%	<10	58
SA2338	149	<1	<100	<10	10	31.3%	<10	86
SA2339	188	<1	200	<10	<10	32.7%	<10	83
SA2340	141	<1	<100	<10	<10	29.7%	<10	79
SA2341	133	<1	<100	<10	<10	36.0%	<10	78
SA2342	165	<1	<100	<10	<10	35.5%	<10	98
SA2343	153	<1	<100	<10	<10	36.2%	<10	90
SA2344	144	<1	200	<10	<10	30.8%	<10	89
SA2345	128	<1	<100	<10	<10	34.2%	<10	84
SA2346	101	<1	<100	<10	<10	33.4%	<10	101
SA2347	88.0	<1	200	<10	<10	34.4%	<10	77
SA2348	95.5	<1	400	<10	<10	32.5%	<10	78
BLANK 2	0.5	<1	200	<10	<10	<100	<10	1
SA2349	88.0	<1	400	<10	<10	33.3%	<10	72
SA2349DUP	91.0	<1	<100	<10	<10	34.6%	<10	76
SA2350	95.0	<1	<100	<10	<10	30.8%	<10	66
SA2351	114	<1	200	<10	<10	31.4%	<10	64
SA2352	122	<1	<100	<10	<10	32.9%	<10	75
Std Nominal	67.0		5.58%		<10		10	287
Determined	69.0	<1	5.62%	10	<10	12.5%	10	302
SA2353	90.5	<1	<100	<10	<10	34.7%	<10	59
SA2354	166	<1	400	<10	<10	33.5%	<10	61
SA2355	164	<1	<100	<10	<10	34.2%	<10	56
SA2356	225	<1	500	<10	<10	35.2%	<10	67
SA2357	181	<1	<100	<10	<10	36.4%	<10	66
SA2358	207	<1	<100	<10	10	35.0%	<10	81
Std Nominal	97.0	<1	1.07%	30	<10	32.4 %	<10	230
Determined	100	<1	1.06%	30	<10	32.6%	<10	248
SA2359	208	<1	<100	<10	10	35.0%	<10	88
SA2360	199	<1	<100	<10	<10	35.8%	<10	77
SA2360 Rpt	190	<1	<100	<10	<10	36.3%	<10	71
SA2361	188	<1	200	<10	10	34.0%	<10	74
SA2362	208	<1	<100	<10	<10	35.7%	<10	64
SA2363	213	<1	<100	<10	<10	36.0%	<10	54



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Method	PF102	PF102	PF101	PF102	PF101	PF101	PF102	PF102
Result Name	Rb	Re	S	Sb	Sc	Si	Sn	Sr
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.5	1	100	10	10	100	10	1
SA2364	191	<1	<100	<10	<10	36.3%	<10	66
SA2365	189	<1	<100	<10	<10	37.3%	<10	64
SA2366	175	<1	200	<10	<10	36.5%	<10	82
SA2367	194	<1	<100	<10	<10	38.3%	<10	67
SA2368	174	<1	<100	<10	10	37.3%	<10	68
SA2369	180	<1	<100	<10	<10	38.1%	<10	61
SA2370	196	<1	<100	<10	<10	37.6%	<10	66
SA2371	171	<1	<100	<10	<10	35.9%	<10	66
SA2372	172	<1	<100	<10	<10	34.4%	<10	61
SA2373	153	<1	<100	<10	<10	34.7%	<10	61
SA2374	162	<1	300	<10	<10	32.6%	<10	59
Std Nominal	198		800	<10	10	31.6 %	<10	35
Determined	195	<1	900	<10	10	30.8%	<10	38
SA2375	176	<1	400	<10	<10	33.7%	<10	60
SA2376	198	<1	<100	<10	<10	34.4%	<10	55
SA2376 Rpt	206	<1	<100	<10	<10	35.4%	<10	57
SA2377	187	<1	600	<10	<10	34.0%	<10	61
SA2378	209	<1	<100	<10	<10	32.9%	<10	63
SA2379	193	<1	<100	<10	<10	32.9%	<10	57
SA2380	222	<1	<100	<10	<10	33.4%	<10	57
SA2381	212	<1	<100	<10	<10	34.9%	<10	62
SA2382	194	<1	400	<10	<10	34.3%	<10	55
SA2383	194	<1	<100	<10	<10	33.3%	<10	56
SA2384	182	<1	<100	<10	<10	34.8%	<10	56
Std Nominal	106	<1	1.31%	<10			10	423
Determined	105	<1	1.27%	<10	20	26.4%	10	415
SA2385	161	<1	300	<10	<10	34.0%	<10	47
SA2386	175	<1	<100	<10	<10	34.3%	<10	62
SA2387	157	<1	400	<10	<10	32.5%	<10	59
SA2388	166	<1	400	<10	<10	33.1%	<10	57
SA2389	155	<1	<100	<10	<10	34.3%	<10	62
SA2390	181	<1	<100	<10	<10	35.5%	<10	63
SA2391	190	<1	<100	<10	<10	33.6%	<10	69
SA2392	169	<1	200	<10	<10	35.1%	<10	77
SA2393	158	<1	400	<10	<10	32.8%	<10	65
SA2394	156	<1	<100	<10	<10	34.7%	<10	67



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Method	PF102	PF102	PF101	PF102	PF102	PF101	PF102	PF102
Result Name	Ta	Th	Ti	Tl	U	V	W	Y
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.5	0.5	100	2	0.5	50	5	1
BLANK 1	<0.5	<0.5	<100	<2	<0.5	<50	<5	<1
SA2300	1.0	24.5	4300	<2	5.0	<50	<5	50
SA2301	1.0	17.0	3500	<2	6.0	100	<5	52
SA2302	1.0	33.0	3100	<2	12.0	50	<5	63
SA2303	1.0	38.0	3300	<2	9.0	100	<5	55
SA2304	1.5	39.0	3500	<2	8.5	100	<5	39
SA2305	1.0	37.5	3200	<2	7.0	50	<5	38
SA2305 Rpt	1.0	38.0	3200	<2	7.0	50	<5	38
SA2306	1.0	37.0	3300	<2	6.5	100	<5	46
SA2307	1.0	35.5	2700	<2	7.0	50	<5	47
SA2308	1.0	36.0	4200	<2	5.0	<50	<5	31
SA2309	0.5	23.5	2900	<2	4.0	50	<5	23
SA2310	1.0	19.0	3400	<2	3.5	50	<5	22
Std Nominal	0.5	8.0			59.0	100	175	17
Determined	<0.5	7.0	2900	<2	57.5	150	175	16
SA2311	0.5	17.5	2900	<2	3.5	50	<5	20
SA2312	1.0	20.0	3100	<2	4.0	50	<5	22
SA2313	0.5	19.0	3000	<2	3.5	50	<5	21
SA2314	0.5	19.5	3000	<2	4.5	50	<5	22
SA2315	0.5	18.5	3100	<2	5.5	50	<5	29
Std Nominal	1.0	11.5	1800	<2	4.0	<50	5	11
Determined	1.0	11.0	1700	<2	4.5	<50	<5	11
SA2316	0.5	16.0	3100	<2	4.5	50	<5	24
SA2317	1.0	21.0	3400	<2	4.0	100	<5	26
SA2318	1.0	22.0	3300	<2	5.0	50	<5	29
SA2319	1.0	27.5	3600	<2	5.0	50	<5	27
SA2320	1.0	27.0	3600	<2	6.0	50	<5	32
SA2321	1.0	41.0	3400	<2	6.0	100	<5	27
SA2322	1.0	36.5	3400	<2	7.0	50	<5	31
SA2323	1.0	37.0	3600	<2	6.5	100	<5	31
SA2324	1.0	38.5	3400	<2	6.5	50	<5	28
SA2325	1.0	43.0	3200	<2	7.0	50	<5	30
SA2326	1.0	58.5	3200	<2	9.0	50	<5	34
SA2327	1.0	53.0	3600	<2	10.5	50	<5	42
SA2327 Rpt	1.0	53.0	3600	<2	10.5	50	<5	45
SA2328	0.5	31.5	3400	<2	6.0	50	<5	32
SA2329	1.0	42.0	3500	<2	7.0	50	<5	28
Std Nominal	1.0	16.0	4400	<2	3.5		<5	26
Determined	1.5	18.0	4200	<2	4.0	100	<5	29
SA2330	1.0	53.0	3800	<2	9.0	50	<5	38
SA2331	1.0	97.0	3400	<2	15.0	50	<5	42



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Method	PF102	PF102	PF101	PF102	PF102	PF101	PF102	PF102
Result Name	Ta	Th	Ti	Tl	U	V	W	Y
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.5	0.5	100	2	0.5	50	5	1
SA2332	1.0	63.0	3900	<2	15.0	50	<5	100
SA2333	1.0	70.5	3700	<2	15.5	50	<5	54
SA2334	1.0	73.0	3700	<2	11.0	50	<5	42
Std Nominal	0.5	8.5	3600	<2	2.5	150	<5	18
Determined	0.5	8.0	3700	<2	3.0	150	<5	15
SA2335	1.0	79.0	4000	<2	10.0	50	<5	40
SA2336	1.0	56.0	3800	<2	7.0	50	<5	37
SA2337	0.5	34.0	3800	<2	4.5	50	<5	24
SA2338	0.5	22.0	3500	<2	4.0	100	<5	26
SA2339	0.5	25.5	3300	<2	4.0	50	<5	23
SA2340	0.5	22.0	3500	<2	3.5	50	<5	25
SA2341	1.0	22.5	4000	<2	3.0	50	<5	22
SA2342	1.0	27.0	3900	<2	3.5	50	<5	24
SA2343	1.0	26.0	4000	<2	4.0	50	<5	22
SA2344	1.0	24.0	4200	<2	3.5	50	<5	22
SA2345	1.0	22.5	4200	<2	2.0	50	<5	22
SA2346	1.0	14.0	4000	<2	3.0	100	<5	25
SA2347	1.0	15.0	3800	<2	3.0	50	<5	22
SA2348	1.0	16.0	4200	<2	3.5	100	<5	23
BLANK 2	<0.5	<0.5	<100	<2	<0.5	<50	<5	<1
SA2349	1.0	12.5	4400	<2	3.5	100	<5	24
SA2349DUP	1.0	12.5	4500	<2	3.5	100	<5	22
SA2350	1.0	14.5	3800	<2	3.5	100	<5	23
SA2351	1.0	13.5	3400	<2	2.0	50	<5	19
SA2352	1.0	17.5	4100	<2	3.0	100	<5	26
Std Nominal	0.5	8.0			59.0	100	175	17
Determined	<0.5	7.5	2900	<2	60.5	100	175	15
SA2353	0.5	12.5	3000	<2	2.0	50	<5	18
SA2354	1.0	19.0	3400	<2	4.0	50	<5	32
SA2355	1.0	17.5	3400	<2	3.5	50	<5	23
SA2356	1.0	20.0	3500	<2	4.5	50	<5	28
SA2357	1.0	19.5	4500	<2	4.5	50	<5	32
SA2358	1.5	21.5	5300	<2	5.5	50	<5	48
Std Nominal	1.0	11.5	1800	<2	4.0	<50	5	11
Determined	1.0	11.0	1700	<2	4.5	<50	<5	11
SA2359	1.5	22.0	5500	<2	4.0	100	<5	37
SA2360	1.5	19.0	4900	<2	3.5	50	<5	30
SA2360 Rpt	1.0	18.5	4900	<2	3.0	50	<5	28
SA2361	1.5	21.0	5200	<2	3.0	100	<5	32
SA2362	1.0	19.5	4200	<2	3.5	50	<5	25
SA2363	1.5	17.5	4400	<2	3.5	50	<5	17



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Method	PF102	PF102	PF101	PF102	PF102	PF101	PF102	PF102
Result Name	Ta	Th	Ti	Tl	U	V	W	Y
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.5	0.5	100	2	0.5	50	5	1
SA2364	1.5	17.5	4800	<2	3.5	<50	<5	28
SA2365	1.5	17.5	4800	<2	3.0	<50	<5	20
SA2366	1.0	20.0	5300	<2	3.5	<50	<5	25
SA2367	1.0	28.5	4900	<2	4.5	<50	<5	21
SA2368	1.5	36.5	4900	<2	5.0	<50	<5	32
SA2369	1.0	27.0	4700	<2	3.5	<50	<5	19
SA2370	1.5	33.0	5300	<2	4.5	<50	<5	21
SA2371	1.0	38.0	4200	<2	5.5	<50	<5	22
SA2372	1.0	54.5	4200	<2	8.5	50	<5	28
SA2373	1.5	44.5	4100	<2	6.5	50	<5	27
SA2374	1.0	35.5	3900	<2	5.0	50	<5	22
Std Nominal	1.0	16.0	4400	<2	3.5		<5	26
Determined	1.0	16.5	4300	<2	3.5	100	<5	27
SA2375	1.0	36.5	3700	<2	6.0	50	<5	24
SA2376	1.0	55.5	3500	<2	12.0	50	<5	31
SA2376 Rpt	1.0	59.0	3500	<2	13.0	50	<5	30
SA2377	1.0	48.0	3900	<2	11.0	50	<5	31
SA2378	1.0	50.5	3900	<2	10.5	50	<5	30
SA2379	1.0	51.0	3800	<2	12.0	50	<5	34
SA2380	1.5	40.5	3300	<2	9.5	50	<5	27
SA2381	2.0	62.0	3800	<2	14.5	50	<5	36
SA2382	1.5	43.0	3700	<2	11.0	50	<5	27
SA2383	1.0	38.0	3500	<2	9.5	50	<5	24
SA2384	1.0	30.0	3500	<2	6.5	50	<5	24
Std Nominal	0.5	8.5	3600	<2	2.5	150	<5	18
Determined	0.5	7.5	3800	<2	3.0	150	<5	16
SA2385	1.5	31.0	3700	<2	6.5	50	<5	26
SA2386	1.0	29.0	3700	<2	5.5	50	<5	23
SA2387	1.0	44.0	3400	<2	11.0	50	<5	25
SA2388	1.0	50.0	3900	<2	10.0	50	<5	29
SA2389	1.0	41.5	3700	<2	11.0	50	<5	29
SA2390	1.0	54.5	3700	<2	13.0	50	<5	30
SA2391	1.5	39.0	4300	<2	6.5	50	<5	29
SA2392	1.5	30.0	4400	<2	5.0	50	<5	25
SA2393	1.5	28.5	4400	<2	5.0	50	<5	25
SA2394	2.0	48.5	4700	<2	7.0	100	<5	33



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Method	PF102	PF102	PF102	PF102	PF102	PF102	PF102	PF102
Result Name	Zn	Zr	La	Ce	Pr	Nd	Sm	Eu
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	10	10	0.5	0.5	0.2	0.5	0.5	0.2
BLANK 1	<10	<10	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2
SA2300	40	420	71.5	178	17.6	62.5	12.0	1.6
SA2301	20	360	48.5	97.0	12.0	38.0	7.5	1.2
SA2302	20	420	91.5	184	19.6	73.0	13.5	1.6
SA2303	30	400	75.0	155	19.4	57.5	11.5	1.2
SA2304	30	490	69.0	140	15.2	53.5	10.0	1.2
SA2305	20	440	64.5	131	14.8	52.5	9.5	1.2
SA2305 Rpt	20	410	62.5	120	14.8	49.0	9.5	1.2
SA2306	30	430	64.5	131	16.6	51.5	9.5	1.2
SA2307	10	430	75.5	154	19.8	60.0	11.0	1.4
SA2308	30	720	50.5	100	11.0	40.0	7.0	1.0
SA2309	10	400	41.0	83.0	10.4	31.5	6.0	1.0
SA2310	30	420	36.0	75.5	7.8	30.5	5.5	1.0
Std Nominal	60	100	286	201	12.8	32.5	4.5	2.0
Determined	40	100	291	223	13.4	33.5	5.0	2.2
SA2311	30	410	32.5	66.0	8.0	25.5	4.5	0.8
SA2312	10	470	35.0	69.5	8.0	29.0	5.5	1.0
SA2313	20	400	38.0	75.5	9.2	29.5	5.5	1.0
SA2314	10	410	40.0	82.0	9.8	30.5	5.5	0.8
SA2315	20	350	42.5	90.0	10.6	34.5	6.5	1.0
Std Nominal	1330	160	31.0	63.0	7.6	27.0	5.0	1.2
Determined	1270	180	33.0	67.0	8.2	25.0	5.0	1.0
SA2316	20	370	38.5	77.5	9.8	31.0	6.0	1.0
SA2317	20	390	50.0	107	13.2	40.0	7.5	1.2
SA2318	30	440	54.5	119	13.8	43.0	8.0	1.2
SA2319	20	410	61.0	130	15.6	49.5	8.5	1.2
SA2320	20	380	70.0	125	17.8	56.5	10.0	1.2
SA2321	30	390	71.0	109	18.2	54.5	10.5	1.2
SA2322	20	410	70.5	137	18.2	55.5	11.0	1.2
SA2323	20	470	65.5	127	18.0	55.0	10.0	1.2
SA2324	30	440	63.0	123	16.0	51.0	9.0	1.0
SA2325	20	500	67.0	128	18.2	55.5	11.0	1.2
SA2326	20	490	81.0	155	20.0	61.0	12.0	1.0
SA2327	20	570	93.5	174	23.8	73.5	14.0	1.4
SA2327 Rpt	30	580	101	183	25.2	79.5	15.0	1.6
SA2328	30	450	75.5	131	18.6	54.5	10.0	1.2
SA2329	20	490	60.5	119	15.8	49.5	8.5	1.0
Std Nominal	70	210	44.0	89.0	10.2	37.0	7.0	1.2
Determined	70	220	47.0	95.5	11.2	40.0	7.5	1.4
SA2330	20	540	93.0	162	22.6	69.0	11.5	1.4
SA2331	30	530	189	307	44.4	122	19.5	1.8



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Method	PF102	PF102	PF102	PF102	PF102	PF102	PF102	PF102
Result Name	Zn	Zr	La	Ce	Pr	Nd	Sm	Eu
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	10	10	0.5	0.5	0.2	0.5	0.5	0.2
SA2332	50	670	185	429	42.6	127	23.0	2.4
SA2333	20	590	194	289	45.2	132	22.0	2.2
SA2334	30	490	128	244	30.4	88.0	14.5	1.6
Std Nominal	110	60	19.5	38.5	4.6	17.5	3.5	1.0
Determined	90	120	19.5	38.0	4.8	16.5	3.0	0.8
SA2335	40	490	116	212	27.6	82.0	13.5	1.4
SA2336	20	540	87.0	147	19.2	64.5	11.5	1.2
SA2337	30	580	57.5	111	13.6	40.5	8.0	1.0
SA2338	60	390	40.0	81.5	9.4	33.0	6.5	0.8
SA2339	20	460	40.5	80.5	10.2	31.5	5.5	1.0
SA2340	30	480	43.0	84.5	10.4	33.0	5.5	1.0
SA2341	40	470	44.0	86.0	10.6	32.0	6.0	1.0
SA2342	30	500	47.0	94.5	11.2	35.5	6.5	1.2
SA2343	20	530	37.0	80.0	8.8	30.0	6.0	0.8
SA2344	20	500	46.0	92.0	10.8	34.0	5.5	1.2
SA2345	20	490	46.5	89.0	10.6	34.0	5.5	1.0
SA2346	60	420	34.5	64.5	9.0	27.5	5.5	1.0
SA2347	60	480	31.0	64.5	7.8	26.0	5.0	0.8
SA2348	20	480	34.0	68.5	9.0	28.0	5.5	1.0
BLANK 2	<10	<10	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2
SA2349	40	430	34.0	67.5	8.6	28.0	5.5	1.0
SA2349DUP	40	370	33.0	69.0	8.4	28.0	5.5	1.0
SA2350	50	390	38.5	75.5	9.6	30.0	6.0	1.0
SA2351	40	340	25.0	51.5	6.6	21.5	4.5	0.8
SA2352	40	470	35.5	72.5	9.2	28.0	5.5	1.0
Std Nominal	60	100	286	201	12.8	32.5	4.5	2.0
Determined	70	110	265	189	12.2	27.5	3.5	2.2
SA2353	40	410	23.5	49.0	6.2	20.0	4.0	0.8
SA2354	30	350	35.5	61.0	8.8	28.5	5.5	1.2
SA2355	20	380	26.5	53.5	6.6	23.5	4.0	0.8
SA2356	30	350	32.0	65.0	8.0	28.0	5.5	1.0
SA2357	20	550	35.0	83.0	9.0	29.5	5.5	1.0
SA2358	50	580	40.0	84.5	10.4	34.5	7.5	1.4
Std Nominal	1330	160	31.0	63.0	7.6	27.0	5.0	1.2
Determined	1390	180	31.5	63.5	8.0	25.5	4.5	1.0
SA2359	50	490	42.5	85.5	10.4	35.0	7.5	1.2
SA2360	50	460	33.0	68.0	8.8	29.0	6.0	1.4
SA2360 Rpt	40	430	32.0	66.0	8.2	27.5	6.0	1.2
SA2361	40	400	35.5	72.0	9.6	31.5	6.5	1.2
SA2362	40	360	30.0	58.5	7.8	25.0	5.5	1.2
SA2363	50	410	21.0	42.0	5.2	18.5	4.0	0.8



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Method	PF102	PF102	PF102	PF102	PF102	PF102	PF102	PF102
Result Name	Zn	Zr	La	Ce	Pr	Nd	Sm	Eu
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	10	10	0.5	0.5	0.2	0.5	0.5	0.2
SA2364	40	400	32.0	60.5	8.2	27.5	6.0	1.2
SA2365	20	400	28.0	52.0	7.2	23.0	4.5	1.0
SA2366	30	430	32.5	68.0	8.2	28.5	5.5	1.2
SA2367	30	480	34.0	64.0	8.0	25.5	5.0	1.0
SA2368	30	460	47.5	100	11.8	36.0	7.5	1.0
SA2369	20	440	28.5	55.0	7.2	22.0	4.0	1.0
SA2370	30	530	31.5	63.5	8.0	26.0	4.5	1.0
SA2371	20	530	38.0	77.5	9.2	32.0	6.5	1.0
SA2372	70	520	59.5	106	14.2	42.5	7.5	1.0
SA2373	20	490	50.0	99.0	12.0	37.0	7.0	1.0
SA2374	30	500	38.5	77.0	9.6	29.0	6.0	1.0
Std Nominal	70	210	44.0	89.0	10.2	37.0	7.0	1.2
Determined	90	200	45.0	90.0	11.2	36.0	7.0	1.2
SA2375	20	410	44.0	80.5	10.6	34.5	6.5	1.0
SA2376	20	480	59.0	111	15.2	45.5	8.5	0.8
SA2376 Rpt	50	480	61.0	112	15.0	44.5	8.5	1.0
SA2377	30	490	54.5	97.0	13.8	41.0	8.0	1.0
SA2378	20	530	53.0	104	13.8	42.5	8.5	1.2
SA2379	60	510	52.0	97.0	13.2	42.5	8.5	0.8
SA2380	50	470	38.0	68.5	9.6	29.0	6.0	0.8
SA2381	20	590	51.5	108	14.0	41.5	8.5	0.8
SA2382	20	570	38.0	78.0	9.6	32.0	6.5	0.8
SA2383	20	520	38.5	75.5	10.2	32.0	6.5	1.0
SA2384	40	510	33.0	67.0	8.6	28.0	5.0	1.0
Std Nominal	110	60	19.5	38.5	4.6	17.5	3.5	1.0
Determined	100	130	18.5	39.5	4.8	18.0	3.5	0.8
SA2385	20	460	30.0	62.5	7.4	26.0	5.5	0.8
SA2386	20	510	30.5	63.0	7.8	25.0	5.5	1.0
SA2387	10	520	38.5	74.0	9.4	28.0	5.5	0.8
SA2388	30	580	42.5	85.5	10.8	32.0	6.0	0.8
SA2389	20	470	46.0	92.0	11.2	34.5	6.5	0.8
SA2390	30	570	44.0	89.5	10.8	33.0	7.0	0.8
SA2391	30	520	45.0	86.0	11.0	33.0	6.5	1.0
SA2392	20	490	36.5	75.5	9.2	29.5	5.0	1.0
SA2393	30	490	37.0	76.0	9.2	29.0	5.0	1.0
SA2394	30	550	55.0	108	13.6	40.5	8.0	1.0



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Method	PF102	PF102	PF102	PF102	PF102	PF102	PF102	PF102
Result Name	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	2	0.2	0.5	0.2	0.5	0.2	0.5	0.2
BLANK 1	<2	<0.2	0.0	<0.2	<0.5	<0.2	<0.5	<0.2
SA2300	12	1.8	10.5	2.0	6.0	0.6	6.0	0.8
SA2301	8	1.2	9.0	2.0	6.0	0.8	5.5	0.8
SA2302	14	1.8	12.0	2.2	7.0	0.8	5.5	0.8
SA2303	10	1.8	10.0	2.0	6.5	0.8	5.0	0.8
SA2304	8	1.2	7.5	1.6	4.0	0.6	4.0	0.6
SA2305	8	1.2	7.0	1.6	4.5	0.6	3.5	0.6
SA2305 Rpt	8	1.2	7.5	1.4	4.0	0.6	4.0	0.6
SA2306	10	1.4	8.5	1.8	5.5	0.8	4.5	0.8
SA2307	10	1.6	9.0	2.2	5.5	0.8	5.5	1.0
SA2308	6	1.0	5.5	1.2	3.5	0.6	3.5	0.6
SA2309	6	0.8	4.5	0.8	2.5	0.4	2.5	0.4
SA2310	6	0.8	4.5	0.8	2.5	0.4	2.5	0.4
Std Nominal	4	0.6	3.0	0.6	2.0		2.0	0.2
Determined	4	0.6	3.5	0.8	2.0	0.2	2.5	0.6
SA2311	4	0.6	3.5	0.8	2.0	0.2	2.0	0.2
SA2312	4	0.6	4.0	1.0	2.5	0.4	2.5	0.4
SA2313	4	0.6	4.0	0.8	2.5	0.4	2.0	0.4
SA2314	4	0.6	4.0	0.8	2.5	0.4	2.5	0.4
SA2315	6	1.0	5.5	1.2	3.5	0.4	3.0	0.4
Std Nominal	4	0.6	2.5	0.4	1.0	<0.2	0.5	<0.2
Determined	4	0.4	2.5	0.4	1.0	<0.2	1.0	<0.2
SA2316	6	0.8	4.5	1.0	2.5	0.4	2.5	0.4
SA2317	6	1.0	5.5	1.0	3.5	0.4	2.5	0.4
SA2318	6	1.0	6.0	1.2	3.0	0.4	3.0	0.4
SA2319	6	1.0	6.0	1.2	3.0	0.4	3.0	0.4
SA2320	8	1.2	6.5	1.4	3.5	0.6	3.5	0.4
SA2321	8	1.2	6.5	1.2	3.5	0.4	2.5	0.4
SA2322	8	1.2	6.5	1.4	3.5	0.6	3.0	0.4
SA2323	8	1.2	6.5	1.2	3.5	0.6	3.0	0.6
SA2324	8	1.2	6.0	1.2	3.5	0.4	3.0	0.4
SA2325	8	1.0	6.0	1.2	3.5	0.4	3.0	0.4
SA2326	10	1.2	7.0	1.4	4.0	0.6	3.5	0.4
SA2327	12	1.6	9.5	1.8	4.5	0.6	4.5	0.6
SA2327 Rpt	12	1.6	9.5	1.8	5.0	0.6	4.5	0.6
SA2328	8	1.2	6.5	1.4	3.5	0.6	3.0	0.6
SA2329	8	1.0	5.5	1.2	3.5	0.4	3.0	0.4
Std Nominal	6	0.8	5.0	1.0	3.0	0.4	2.5	0.4
Determined	6	0.8	5.5	1.2	3.0	0.4	3.0	0.6
SA2330	10	1.4	7.5	1.6	4.0	0.6	3.5	0.6
SA2331	12	1.8	9.0	1.8	5.0	0.6	4.5	0.6



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Method	PF102	PF102	PF102	PF102	PF102	PF102	PF102	PF102
Result Name	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	2	0.2	0.5	0.2	0.5	0.2	0.5	0.2
SA2332	20	2.8	17.0	3.4	10.0	1.4	8.5	1.2
SA2333	16	2.2	11.5	2.2	6.0	0.8	4.5	0.6
SA2334	12	1.6	8.5	1.8	4.5	0.8	4.5	0.6
Std Nominal	4	0.6	3.5	0.6	2.0	0.2	2.0	0.2
Determined	4	0.6	3.0	0.6	2.0	0.2	1.5	0.2
SA2335	10	1.4	7.5	1.4	4.5	0.6	3.5	0.6
SA2336	10	1.4	7.5	1.6	4.5	0.6	4.0	0.6
SA2337	6	0.8	5.0	1.2	3.0	0.4	2.5	0.4
SA2338	6	0.8	4.5	1.0	3.0	0.4	2.5	0.4
SA2339	4	0.6	4.0	0.8	2.5	0.4	2.5	0.4
SA2340	6	0.8	4.5	1.0	3.0	0.4	2.5	0.4
SA2341	4	0.8	4.0	0.8	2.5	0.4	2.5	0.4
SA2342	4	0.8	4.5	1.0	3.0	0.4	3.0	0.4
SA2343	4	0.8	4.0	0.8	2.5	0.4	2.5	0.4
SA2344	4	0.8	4.0	1.0	2.5	0.4	2.5	0.4
SA2345	4	0.6	4.5	0.8	2.5	0.4	2.5	0.4
SA2346	6	0.8	4.5	1.2	3.0	0.6	3.0	0.6
SA2347	4	0.6	4.0	0.8	2.5	0.4	2.5	0.4
SA2348	6	0.8	4.5	1.0	3.0	0.4	3.0	0.4
BLANK 2	<2	<0.2	0.0	<0.2	<0.5	<0.2	<0.5	<0.2
SA2349	6	0.8	4.5	1.0	2.5	0.4	3.0	0.4
SA2349DUP	6	0.8	4.5	1.0	2.5	0.4	3.0	0.4
SA2350	6	0.8	5.0	1.0	3.0	0.4	2.5	0.4
SA2351	4	0.6	3.5	0.8	2.0	0.4	2.0	0.4
SA2352	6	0.8	4.5	1.0	3.0	0.4	3.0	0.4
Std Nominal	4	0.6	3.0	0.6	2.0		2.0	0.2
Determined	2	0.4	2.5	0.6	2.0	0.2	2.0	0.4
SA2353	4	0.6	3.0	0.8	2.0	0.4	2.0	0.4
SA2354	6	0.8	5.0	1.2	3.5	0.4	4.0	0.6
SA2355	4	0.6	4.0	1.0	2.5	0.4	3.0	0.4
SA2356	6	0.8	5.0	1.2	3.5	0.6	3.5	0.6
SA2357	6	0.8	5.5	1.2	4.0	0.6	4.0	0.6
SA2358	8	1.2	8.0	1.8	5.0	0.8	5.0	0.8
Std Nominal	4	0.6	2.5	0.4	1.0	<0.2	0.5	<0.2
Determined	4	0.6	2.5	0.4	1.0	<0.2	0.5	<0.2
SA2359	8	1.2	6.5	1.4	4.0	0.6	3.5	0.6
SA2360	6	0.8	5.5	1.2	3.5	0.6	3.5	0.6
SA2360 Rpt	6	0.8	5.0	1.0	3.0	0.4	3.0	0.4
SA2361	6	1.0	6.0	1.2	3.5	0.6	4.0	0.6
SA2362	4	0.8	4.5	1.0	3.0	0.4	3.0	0.4
SA2363	4	0.6	4.0	0.8	2.5	0.4	2.5	0.4



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Method	PF102	PF102	PF102	PF102	PF102	PF102	PF102	PF102
Result Name	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	2	0.2	0.5	0.2	0.5	0.2	0.5	0.2
SA2364	6	0.8	5.0	1.0	3.5	0.4	3.0	0.4
SA2365	4	0.6	4.0	0.8	2.5	0.4	2.5	0.4
SA2366	6	0.8	5.0	1.0	3.0	0.4	2.5	0.4
SA2367	4	0.8	4.0	0.8	2.5	0.4	2.5	0.4
SA2368	6	1.0	7.0	1.2	4.0	0.6	3.5	0.6
SA2369	4	0.6	3.5	0.8	2.0	0.4	2.5	0.4
SA2370	4	0.6	4.0	0.8	2.5	0.4	3.0	0.4
SA2371	6	0.8	5.0	1.0	3.0	0.4	3.0	0.4
SA2372	6	0.8	5.5	1.0	3.5	0.4	3.0	0.4
SA2373	6	0.8	5.5	1.2	3.5	0.4	3.5	0.6
SA2374	6	0.8	4.5	0.8	3.0	0.4	3.0	0.4
Std Nominal	6	0.8	5.0	1.0	3.0	0.4	2.5	0.4
Determined	6	0.8	5.5	1.0	3.0	0.4	2.5	0.4
SA2375	6	0.8	4.5	1.0	2.5	0.4	2.5	0.4
SA2376	6	1.0	6.0	1.2	3.5	0.4	3.0	0.4
SA2376 Rpt	6	1.0	5.5	1.2	3.5	0.6	3.0	0.4
SA2377	6	1.0	6.0	1.2	3.5	0.6	3.5	0.4
SA2378	6	1.0	6.0	1.2	3.5	0.6	3.0	0.4
SA2379	8	1.0	7.0	1.4	4.5	0.6	4.0	0.6
SA2380	4	0.8	5.0	1.2	3.5	0.4	3.5	0.4
SA2381	8	1.2	7.0	1.4	4.5	0.6	4.0	0.6
SA2382	6	0.8	5.5	1.2	3.5	0.4	3.0	0.6
SA2383	6	1.0	5.0	1.0	3.0	0.4	3.0	0.4
SA2384	6	0.8	5.0	1.0	3.0	0.4	3.0	0.4
Std Nominal	4	0.6	3.5	0.6	2.0	0.2	2.0	0.2
Determined	4	0.6	3.0	0.6	2.0	0.2	1.5	0.2
SA2385	4	0.8	4.5	1.0	3.0	0.4	3.0	0.4
SA2386	4	0.8	4.5	1.0	3.0	0.4	3.0	0.4
SA2387	6	0.8	5.0	1.0	3.0	0.4	3.0	0.4
SA2388	6	0.8	5.5	1.2	3.5	0.4	3.5	0.6
SA2389	6	1.0	6.0	1.2	3.5	0.6	3.5	0.6
SA2390	6	1.0	5.5	1.2	3.5	0.6	3.5	0.6
SA2391	6	1.0	5.5	1.0	3.5	0.6	3.5	0.6
SA2392	4	0.8	5.0	1.0	3.0	0.4	3.0	0.4
SA2393	6	0.8	5.0	1.0	3.0	0.4	3.5	0.4
SA2394	6	1.0	7.0	1.4	4.0	0.6	4.5	0.6



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These results pertain to the samples as received at this laboratory.

Where standards are reported, the nominal value for the element is reported above the result found.

"%" Implies this result reported in %

Sample Storage

The excess material (Residue) will be held after 30 days

The pulp samples (Pulp) will be held after 60 days as per instructions.

Sample Preparation

Samples are dried and then the whole pulverised.

Digest and Analysis:

The samples have been fused with Sodium Peroxide and subsequently the melt has been dissolved in dilute Hydrochloric acid for analysis. Because of the high furnace temperatures, volatile elements are lost. This procedure is particularly efficient for determination of Major element composition (including Silica) in the samples or for the determination of refractory mineral species.

Ba,Ca,Cr,Fe,K,Li,Mg,Mn,P,S,Sc,Si,Ti,V

have been determined by Inductively Coupled Plasma (ICP) Optical Emission Spectrometry.

Ag,As,Be,Bi,Cd,Ce,Co,Cs,Cu,Dy,Er,Eu,Gd,Ge,Hf,Ho,In,La,Lu,Mo,Nb,Nd,Ni,Pb,Pr,Rb,Re,Sb,Sm,Sn,Sr,Ta,Tb,Th,Tl,Tm,U,W,Y,Yb,Zn,Zr

have been determined by Inductively Coupled Plasma (ICP) Mass Spectrometry.