

**YMIP Grant 12-020**

**A Summary Technical Report on the Lake Project  
A Focused Regional Module, Hard Rock Type**

**A Geochemical/Geological Report**

**No claims staked under this grant.**

**Location**

**115P06,**

**Camp at 379,950E, 7,027,035N, Elev 970 m**

**UTM NAD 83, Zone 8**

**Grant awarded to Jeff Mieras**

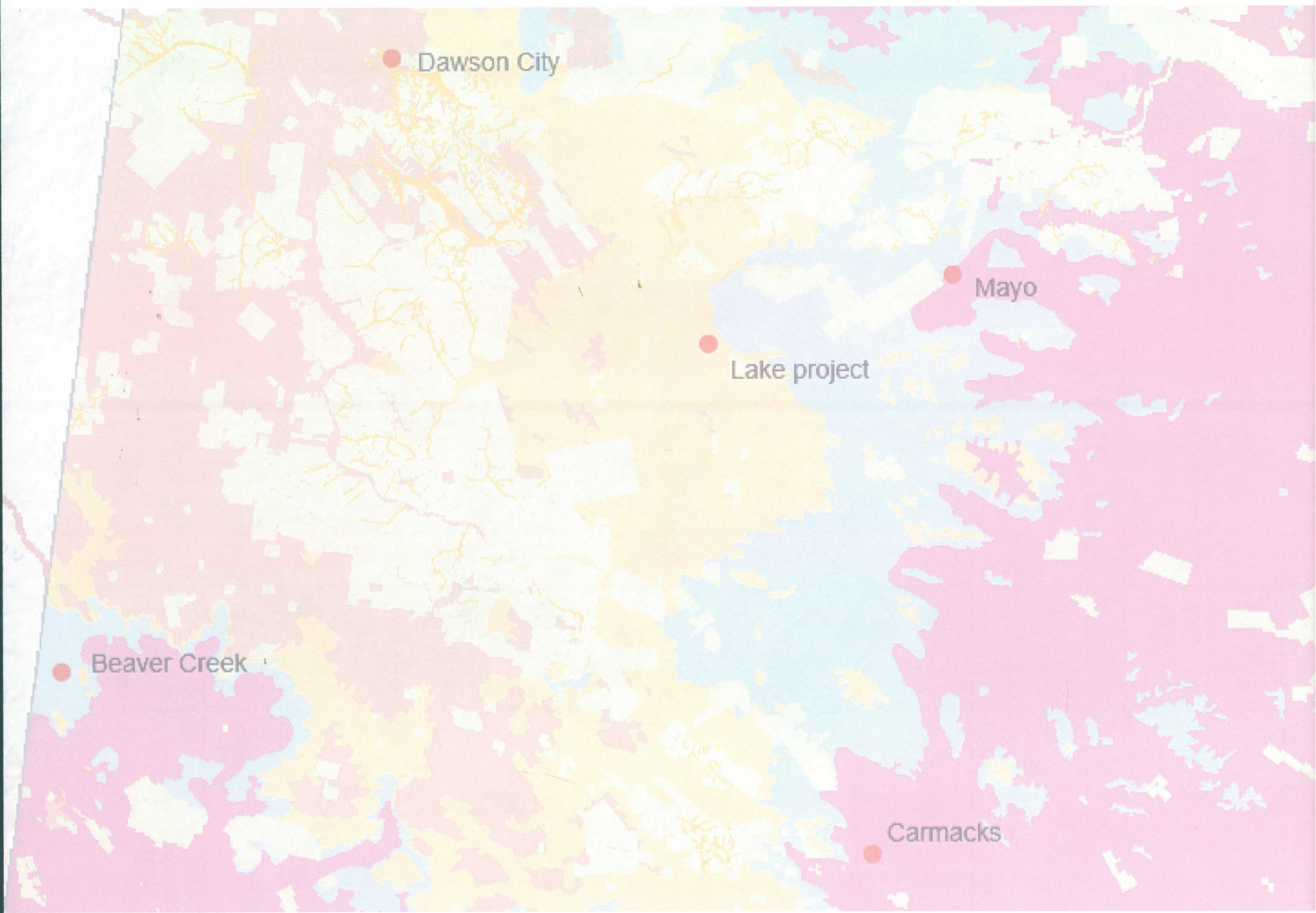
**Work performed by Gordon Richards & Jeff Mieras**

**Report written by Gordon Richards**

**January 15, 2013**

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● Dawson City

● Mayo

● Lake project

● Beaver Creek

● Carmacks

MMI Lake Response Ratios 2012 (response ratios are multiples of background)																												
ID	gold pathfinders							Zn	porphyry				alteration				mafic				Ti	rare earth elements						
	Ag	As	Au	Ba	Hg	Sb	Pb		Cu	Co	Mo	Fe	Mn	Ca	K	Rb	Mg	Ni	U	Ce		La	Nd	Sc	Sm	Tb	Y	
M126	7	4	8	2	1	1	3	4	4	8	1	3	4	4	4	5	4	6	16	25	13	13	22	7	21	17	12	
M128	7	4	4	1	1	1	3	8	5	4	1	10	3	1	5	7	1	3	5	85	2	2	2	3	2	2	3	
M129	1	4	8	3	1	1	2	3	3	4	1	2	5	4	5	12	4	3	6	34	9	13	19	2	13	7	5	
M141	8	1	4	1	1	1	2	7	10	12	3	3	30	6	1	1	3	12	28	3	2	2	3	2	3	4	4	
M132	11	4	6	1	1	2	9	4	2	1	1	3	3	1	2	3	1	1	4	89	6	8	12	3	11	10	8	
M133	1	4	1	2	1	2	6	15	1	1	2	3	5	1	2	8	1	1	1	29	3	3	3	1	3	3	3	
M134	1	6	1	1	1	2	7	9	1	2	1	7	7	1	2	11	0	1	2	43	2	2	2	2	3	2	2	
M135	5	4	6	2	1	1	15	1	3	1	1	1	1	2	2	5	3	1	7	30	11	16	17	8	14	20	20	
M136	6	6	1	1	1	2	8	13	1	4	1	6	7	1	1	7	1	2	2	103	2	1	2	2	2	2	3	
M137	3	8	4	2	1	4	4	11	5	4	1	7	4	2	1	5	2	4	7	57	7	7	9	4	8	8	6	
M138	7	4	4	2	1	2	3	28	10	8	2	5	28	5	1	2	4	24	37	11	4	3	7	3	7	7	6	
M143	7	4	2	1	1	1	4	3	2	1	1	4	2	2	11	16	1	1	3	82	5	7	8	2	7	4	4	
M144	6	1	1	1	1	1	2	2	1	1	1	3	4	1	15	22	1	0	1	52	2	2	1	1	1	1	1	
M145	7	1	2	2	1	1	1	1	8	2	1	2	7	6	5	8	4	5	5	6	2	3	5	2	6	5	5	
M146	4	1	4	3	1	1	3	1	2	4	1	1	3	6	4	2	6	7	5	1	7	7	13	2	11	8	7	
M147	4	1	4	3	2	1	1	1	3	4	1	1	14	9	5	0	9	14	7	0	8	3	9	2	13	14	12	
M148	6	1	8	3	1	1	4	1	5	1	1	1	1	5	1	5	4	5	11	1	1	2	4	5	5	7	6	
M149	1	4	4	4	1	4	4	3	1	5	1	3	10	2	1	7	2	2	3	123	5	6	8	4	8	7	5	
M151	3	4	10	2	1	2	13	2	3	2	1	2	1	1	1	8	1	1	6	56	7	14	11	6	9	9	14	
M152	3	4	1	1	1	2	7	3	1	2	1	3	1	2	2	10	1	1	1	56	1	1	2	2	2	2	2	
M153	1	6	1	1	1	2	4	3	1	2	1	3	3	2	2	9	1	2	1	68	1	2	2	2	2	2	2	
M154	4	4	6	1	1	2	2	21	9	8	1	11	7	2	2	3	2	9	6	29	1	1	1	4	2	3	4	
M155	1	6	6	2	1	2	4	2	3	3	1	2	4	2	2	5	2	4	4	78	8	7	15	10	17	18	14	
M156	2	2	10	3	1	1	4	1	4	2	1	1	2	3	1	4	3	3	8	12	18	18	19	10	20	17	15	
M157	1	6	1	1	1	1	2	3	1	2	1	4	2	1	3	4	1	1	2	88	1	1	1	1	1	1	1	
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M159	1	6	1	1	1	2	3	3	2	3	1	4	2	2	3	7	1	2	3	90	3	3	4	2	3	3	3	
M160	1	1	8	2	1	1	2	1	5	2	1	1	1	4	1	3	4	5	11	2	7	7	19	10	24	25	19	
M161	1	4	4	2	1	1	1	3	2	1	1	2	3	3	2	3	2	2	2	42	4	3	7	2	7	7	6	
M162	1	1	2	2	1	1	2	1	2	2	1	1	2	2	1	6	2	1	2	20	3	4	5	3	5	5	5	
M163	2	1	2	2	1	1	2	1	1	4	1	1	4	4	3	5	3	2	2	32	4	4	7	3	8	7	5	
M164	1	4	1	1	1	4	2	2	2	1	1	3	1	2	2	8	2	1	1	129	1	3	1	1	1	1	1	
M165	1	1	4	3	1	1	1	1	2	2	1	0	1	6	1	2	7	5	7	1	5	4	13	4	16	16	12	
M166	2	2	1	2	1	1	4	2	2	3	1	2	0	3	1	6	4	2	1	82	1	2	1	1	1	1	1	
M167	3	6	2	1	1	4	3	4	2	3	1	4	2	2	2	7	2	2	1	151	2	2	1	2	1	1	1	
M168	2	6	6	2	1	4	5	3	3	4	1	3	2	3	2	4	3	4	5	99	8	7	16	12	19	20	18	
M169	2	6	1	2	1	2	2	3	1	1	1	4	2	2	4	7	2	1	1	115	2	3	3	2	2	2	2	
M170	0	1	4	2	1	1	0	1	2	0	1	0	1	4	2	1	3	2	1	8	5	5	12	2	14	13	10	
M171	0	4	1	1	1	1	1	1	1	2	1	3	2	1	3	8	1	1	1	65	2	2	1	1	1	1	1	
M172	0	4	1	1	1	2	1	1	2	3	1	3	5	1	2	4	1	2	1	77	2	2	1	1	1	1	1	
M173	1	6	1	2	1	4	2	2	2	2	1	4	3	2	2	6	1	2	2	84	3	3	5	3	5	5	5	
M174	4	1	14	4	4	1	1	1	9	1	1	1	0	5	1	2	5	6	27	0	3	4	8	5	13	16	15	
M176	1	1	1	3	1	1	2	2	1	2	1	1	2	1	3	15	1	0	1	141	2	2	1	1	1	1	2	
M177	11	4	1	1	1	1	5	2	2	1	1	2	1	0	3	12	0	0	1	69	1	1	1	2	1	1	1	

MMI Lake Response Ratios 2012 (response ratios are multiples of background)																											
ID	gold pathfinders							porphyry				alteration				mafic				rare earth elements							
	Ag	As	Au	Ba	Hg	Sb	Pb	Zn	Cu	Co	Mo	Fe	Mn	Ca	K	Rb	Mg	Ni	U	Ti	Ce	La	Nd	Sc	Sm	Tb	Y
M178	0	4	1	1	1	2	3	4	1	1	1	4	2	1	2	14	1	1	1	150	1	1	1	1	1	1	1
M179	2	2	12	1	1	1	5	4	1	2	1	4	2	1	3	13	1	2	1	34	1	2	1	1	1	1	1
M180	2	6	1	1	1	2	4	4	1	2	1	7	2	1	2	9	1	1	2	114	2	2	1	2	1	1	1
M181	3	2	6	3	1	1	5	8	3	5	1	2	3	5	1	2	5	4	9	19	11	12	18	7	15	11	9
M182	3	4	8	2	4	1	10	3	6	4	1	1	1	4	2	5	4	4	23	5	13	13	25	30	49	52	43
M184	8	1	4	2	1	1	2	1	8	2	1	3	5	6	2	2	6	21	15	1	3	2	5	6	7	8	7
M185	6	1	1	1	1	1	1	2	1	1	1	1	2	7	13	4	7	2	1	3	0	1	1	0	1	1	1
M187	6	1	6	1	1	1	2	6	10	4	3	4	12	6	1	3	3	16	58	4	2	2	4	3	4	4	4
M193	2	8	1	1	1	4	5	8	1	3	1	8	3	2	3	7	2	2	2	125	1	1	1	1	1	1	1
M194	5	6	2	1	1	2	7	3	2	1	1	3	1	1	1	6	1	1	2	122	2	3	3	3	3	3	4
M189	2	4	6	2	1	1	4	4	2	3	1	3	3	4	4	8	4	3	5	47	5	6	8	3	7	6	6
P153	4	1	1	2	1	1	1	2	5	4	2	3	4	11	6	0	12	7	28	0	1	1	1	1	2	1	2
P154	6	4	6	2	1	8	1	3	8	4	5	5	11	7	5	0	8	4	4	1	0	0	1	1	1	1	1
P155	8	1	1	1	1	1	3	4	2	8	1	3	1	6	4	2	9	5	5	8	2	3	3	1	2	1	2
P156	3	4	1	1	1	2	3	3	1	2	1	2	2	3	8	3	3	3	1	48	2	2	4	1	4	4	4
P157	5	1	4	2	1	1	2	18	10	9	1	3	22	7	0	1	6	18	9	2	2	2	4	3	5	5	5
P159	9	1	10	2	1	1	1	5	16	1	1	2	3	9	1	0	10	35	14	0	2	2	3	2	5	6	6
P160	8	2	4	1	1	1	5	16	2	5	1	6	2	3	1	3	2	7	15	7	3	3	8	7	11	14	12
P161	6	1	12	2	1	1	4	1	4	2	1	1	1	3	3	3	4	3	12	3	4	3	10	7	14	16	11
P162	1	1	4	2	1	1	2	4	1	2	1	1	4	7	2	2	7	4	3	0	10	13	19	2	17	16	16
P163	1	6	1	1	1	1	1	11	2	4	1	11	5	2	2	4	2	3	3	26	2	2	2	1	2	2	2
P164	27	1	6	5	4	1	1	21	15	5	3	1	37	11	1	1	12	45	5	0	1	1	2	1	3	4	5
P165	3	2	2	3	1	1	1	4	9	7	1	2	5	7	2	1	8	7	12	3	10	10	24	4	28	24	20
P167	7	1	4	1	1	1	1	2	13	2	23	3	6	8	1	1	7	10	25	2	2	2	3	1	3	3	3
P168	5	2	4	1	1	4	1	5	24	8	15	5	21	8	2	1	10	32	36	1	2	3	4	2	4	5	6
P171	8	1	14	2	1	1	0	1	18	0	4	1	1	11	1	0	13	18	27	0	1	1	2	1	4	4	4
P172	7	1	8	2	1	4	1	6	25	3	3	2	11	9	1	0	9	61	21	0	2	1	3	1	4	5	5
P175	6	2	8	3	1	1	4	3	10	7	1	2	4	7	2	1	7	19	18	3	9	8	18	11	22	23	23
P176	3	4	1	2	1	1	4	2	1	1	1	3	1	3	4	4	3	1	1	38	1	1	1	1	1	1	1
P177	19	1	8	3	1	6	1	4	39	17	10	2	39	12	1	0	7	31	16	0	0	0	1	0	1	1	1
P181	1	4	4	1	1	1	7	5	1	9	1	3	10	2	3	3	3	2	2	29	1	2	2	3	2	3	3
P184	5	4	1	1	1	1	5	6	2	2	2	3	22	2	7	22	2	1	2	52	2	1	1	2	1	1	2
P185	3	8	2	2	1	4	6	3	2	2	1	4	2	1	3	6	1	1	3	215	4	5	4	4	4	4	4
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P187	1	4	2	2	1	2	3	3	1	2	1	4	2	2	10	11	2	2	1	93	1	1	0	1	0	0	0
P188	1	4	2	1	1	2	3	2	1	1	1	2	1	2	6	11	2	1	2	87	2	2	1	2	1	1	1
P189	2	2	8	2	1	1	3	3	2	2	1	2	4	5	4	5	7	8	5	30	12	15	20	5	16	14	14
P190	19	1	20	3	10	1	2	3	16	0	1	1	1	12	1	1	8	34	17	0	2	2	5	2	8	12	10
P191	4	2	1	1	1	1	3	3	1	2	1	3	3	1	2	16	1	1	1	118	1	1	0	1	1	1	1

Table 2. Ah Response Ratios. Lake 2012

ID	gold pathfinders										porphyry				alteration				mafic				REE									
	Ag	As	Au	Ba	Hg	Sb	Bi	Te	Se	B	Pb	Zn	Cu	Co	Mo	Sn	Fe	Mn	S	Ca	Sr	K	Mg	Ni	Cr	U	Ti	Ce	La	Sc	Y	
M130	16	1	2	2	1	1	3	2	1	1	4	1	2	1	1	1	3	0	1	0	1	4	1	1	1	4	1	13	14	1	1	
M139	1	1	2	1	2	1	2	1	2	3	2	5	1	1	3	3	1	3	2	2	2	3	2	1	1	16	3	2	2	2	2	
M142	2	1	0	2	3	2	4	4	1	3	1	2	1	3	1	1	2	6	2	2	2	3	1	1	1	2	3	3	2	3	1	
M186	6	1	2	3	3	4	2	4	3	2	2	1	1	9	2	1	2	19	2	2	2	4	2	1	1	10	2	12	7	3	2	
M188	1	1	1	2	1	1	2	3	7	3	1	1	1	2	3	0	2	2	3	3	3	3	2	1	1	54	4	4	4	2	2	
P157	3	3	2	2	2	2	3	1	0	1	3	2	2	3	1	1	3	4	1	1	1	2	2	2	2	6	3	6	5	4	2	
P160	5	8	5	6	4	4	5	6	6	4	4	2	4	3	4	1	2	5	9	6	7	5	9	4	3	3	14	11	10	13	9	4
P166	6	1	1	1	2	1	2	2	0	0	2	1	2	1	1	1	2	0	0	0	1	2	1	1	1	9	2	18	16	4	1	
P169	1	1	1	3	1	2	2	2	1	1	2	1	2	2	4	1	2	2	2	3	3	3	3	2	1	6	3	4	3	2	3	
P170	2	3	1	2	1	2	2	3	2	1	2	2	2	2	8	1	3	4	2	2	2	3	3	3	2	8	5	7	5	4	3	
P173	2	4	2	3	1	2	4	1	2	1	3	2	3	3	5	2	4	2	1	1	1	5	2	3	3	10	8	9	7	8	2	
P174	0	0	1	1	2	1	1	3	1	4	1	1	1	1	7	1	0	1	3	2	2	2	1	0	0	3	1	1	1	1	1	
P178	3	2	1	1	1	1	3	1	3	0	2	2	2	2	1	1	3	1	1	1	1	2	1	2	2	6	2	6	4	2	1	
P179	1	1	0	1	3	2	1	1	1	2	1	1	1	1	3	0	1	1	2	1	1	3	1	0	1	3	2	2	2	3	1	
P180	1	11	1	1	1	1	2	2	2	1	1	1	1	1	4	1	5	2	3	2	2	1	1	1	1	11	2	2	2	3	1	

UTM MMI RR Lake Project

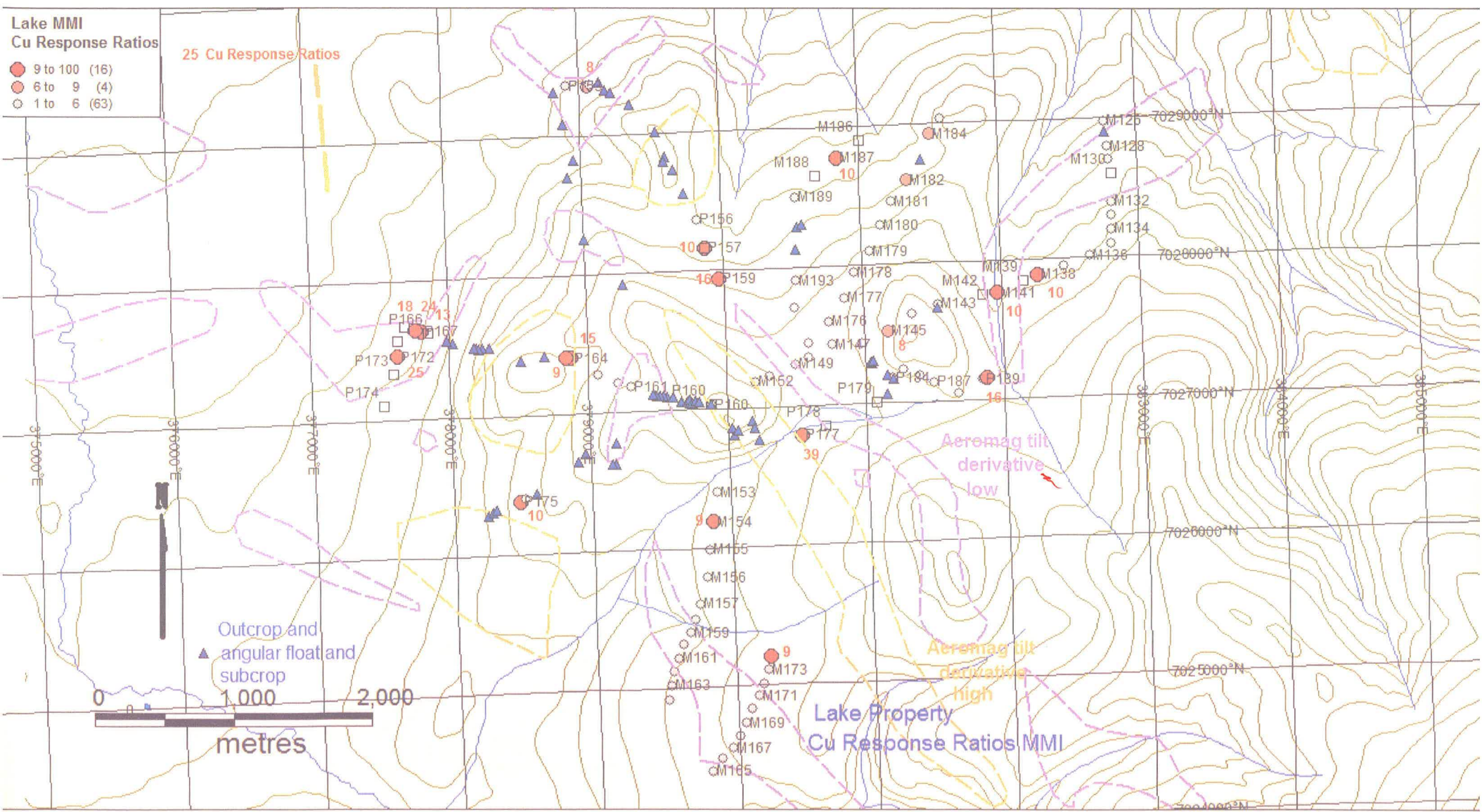
ID	TYPE	83_E	83_N	Ag	As	Au	Ba	Hg	Sb	Pb	Zn	Cu	Co	Mo	Fe	Mn	Ca	K	Rb	Mg	Ni	U	Ti	Ce	La	Nd	Sc	Sm	Tb	Y
M126	MMI	382769	7028977	7	4	8	2	1	1	3	4	4	8	1	3	4	4	4	5	4	6	16	25	13	13	22	7	21	17	12
M128	MMI	382787	7028792	7	4	4	1	1	1	3	8	5	4	1	10	3	1	5	7	1	3	5	85	2	2	2	3	2	2	3
M129	MMI	382793	7028701	1	4	8	3	1	1	2	3	3	4	1	2	5	4	5	12	4	3	6	34	9	13	19	2	13	7	5
M141	MMI	381962	7027767	8	1	4	1	1	1	2	7	10	12	3	3	30	6	1	1	3	12	28	3	2	2	3	2	3	4	4
M132	MMI	382805	7028397	11	4	6	1	1	2	9	4	2	1	1	3	3	1	2	3	1	1	4	89	6	8	12	3	11	10	8
M133	MMI	382802	7028298	1	4	1	2	1	2	6	15	1	1	2	3	5	1	2	8	1	1	1	29	3	3	3	1	3	3	3
M134	MMI	382804	7028201	1	6	1	1	1	2	7	9	1	2	1	7	7	1	2	11	0	1	2	43	2	2	2	2	3	2	2
M135	MMI	382798	7028097	5	4	6	2	1	1	15	1	3	1	1	1	1	2	2	5	3	1	7	30	11	16	17	8	14	20	20
M136	MMI	382640	7028014	6	6	1	1	1	2	8	13	1	4	1	6	7	1	1	7	1	2	2	103	2	1	2	2	2	2	3
M137	MMI	382446	7027946	3	8	4	2	1	4	4	11	5	4	1	7	4	2	1	5	2	4	7	57	7	7	9	4	8	8	6
M138	MMI	382256	7027887	7	4	4	2	1	2	3	28	10	8	2	5	28	5	1	2	4	24	37	11	4	3	7	3	7	7	6
M143	MMI	381533	7027702	7	4	2	1	1	1	4	3	2	1	1	4	2	2	11	16	1	1	3	82	5	7	8	2	7	4	4
M144	MMI	381343	7027636	6	1	1	1	1	1	2	2	1	1	1	3	4	1	15	22	1	0	1	52	2	2	1	1	1	1	1
M145	MMI	381173	7027518	7	1	2	2	1	1	1	1	8	2	1	2	7	6	5	8	4	5	5	6	2	3	5	2	6	5	5
M146	MMI	380981	7027442	4	1	4	3	1	1	3	1	2	4	1	1	3	6	4	2	6	7	5	1	7	7	13	2	11	8	7
M147	MMI	380761	7027437	4	1	4	3	2	1	1	1	3	4	1	1	14	9	5	0	9	14	7	0	8	3	9	2	13	14	12
M148	MMI	380587	7027352	6	1	8	3	1	1	4	1	5	1	1	1	1	5	1	5	4	5	11	1	1	2	4	5	5	7	6
M149	MMI	380492	7027304	1	4	4	4	1	4	4	3	1	5	1	3	10	2	1	7	2	2	3	123	5	6	8	4	8	7	5
M151	MMI	380305	7027224	3	4	10	2	1	2	13	2	3	2	1	2	1	1	1	8	1	1	6	56	7	14	11	6	9	9	14
M152	MMI	380204	7027187	3	4	1	1	1	2	7	3	1	2	1	3	1	2	2	10	1	1	1	56	1	1	2	2	2	2	2
M153	MMI	379899	7026402	1	6	1	1	1	2	4	3	1	2	1	3	3	2	2	9	1	2	1	68	1	2	2	2	2	2	2
M154	MMI	379866	7026191	4	4	6	1	1	2	2	21	9	8	1	11	7	2	2	3	2	9	6	29	1	1	1	4	2	3	4
M155	MMI	379832	7025990	1	6	6	2	1	2	4	2	3	3	1	2	4	2	2	5	2	4	4	78	8	7	15	10	17	18	14
M156	MMI	379803	7025790	2	2	10	3	1	1	4	1	4	2	1	1	2	3	1	4	3	3	8	12	18	18	19	10	20	17	15
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UTM MMI RR Lake Project																														
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M170	MMI	380095	7024836	0	1	4	2	1	1	0	1	2	0	1	0	1	4	2	1	3	2	1	8	5	5	12	2	14	13	10
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M177	MMI	380859	7027769	11	4	1	1	1	1	5	2	2	1	1	2	1	0	3	12	0	0	1	69	1	1	1	2	1	1	1
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P155	MMI	379080	7029370	8	1	1	1	1	1	3	4	2	8	1	3	1	6	4	2	9	5	5	8	2	3	3	1	2	1	2
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P161	MMI	379304	7027183	6	1	12	2	1	1	4	1	4	2	1	1	1	3	3	3	4	3	12	3	4	3	10	7	14	16	11
P162	MMI	379210	7027218	1	1	4	2	1	1	2	4	1	2	1	1	4	7	2	2	7	4	3	0	10	13	19	2	17	16	16



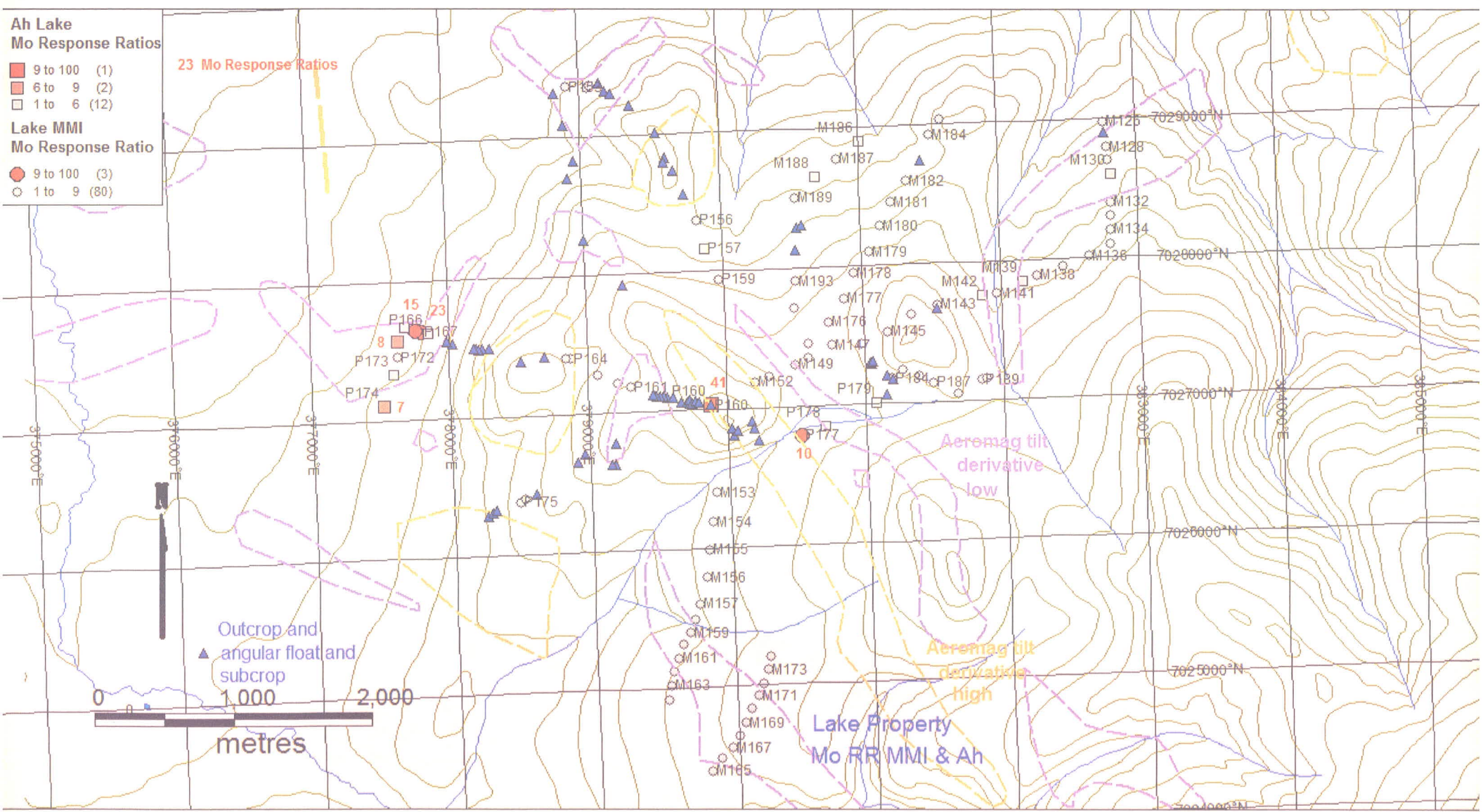
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P167	MMI	377800	7027635	7	1	4	1	1	1	1	2	13	2	23	3	6	8	1	1	7	10	25	2	2	2	3	1	3	3	3
P168	MMI	377758	7027646	5	2	4	1	1	4	1	5	24	8	15	5	21	8	2	1	10	32	36	1	2	3	4	2	4	5	6
P171	MMI	392300	7002300	8	1	14	2	1	1	0	1	18	0	4	1	1	11	1	0	13	18	27	0	1	1	2	1	4	4	4
P172	MMI	377623	7027459	7	1	8	2	1	4	1	6	25	3	3	2	11	9	1	0	9	61	21	0	2	1	3	1	4	5	5
P175	MMI	378479	7026381	6	2	8	3	1	1	4	3	10	7	1	2	4	7	2	1	7	19	18	3	9	8	18	11	22	23	23
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P184	MMI	381192	7027182	5	4	1	1	1	1	5	6	2	2	2	3	22	2	7	22	2	1	2	52	2	1	1	2	1	1	2
P185	MMI	381274	7027239	3	8	2	2	1	4	6	3	2	2	1	4	2	1	3	6	1	1	3	215	4	5	4	4	4	4	4
P186	MMI	381392	7027189	4	2	1	2	1	1	5	1	1	2	1	2	0	3	8	8	3	2	2	26	2	2	2	4	3	3	3
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P188	MMI	381666	7027058	1	4	2	1	1	2	3	2	1	1	1	2	1	2	6	11	2	1	2	87	2	2	1	2	1	1	1
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P190	MMI	381874	7027159	19	1	20	3	10	1	2	3	16	0	1	1	1	12	1	1	8	34	17	0	2	2	5	2	8	12	10
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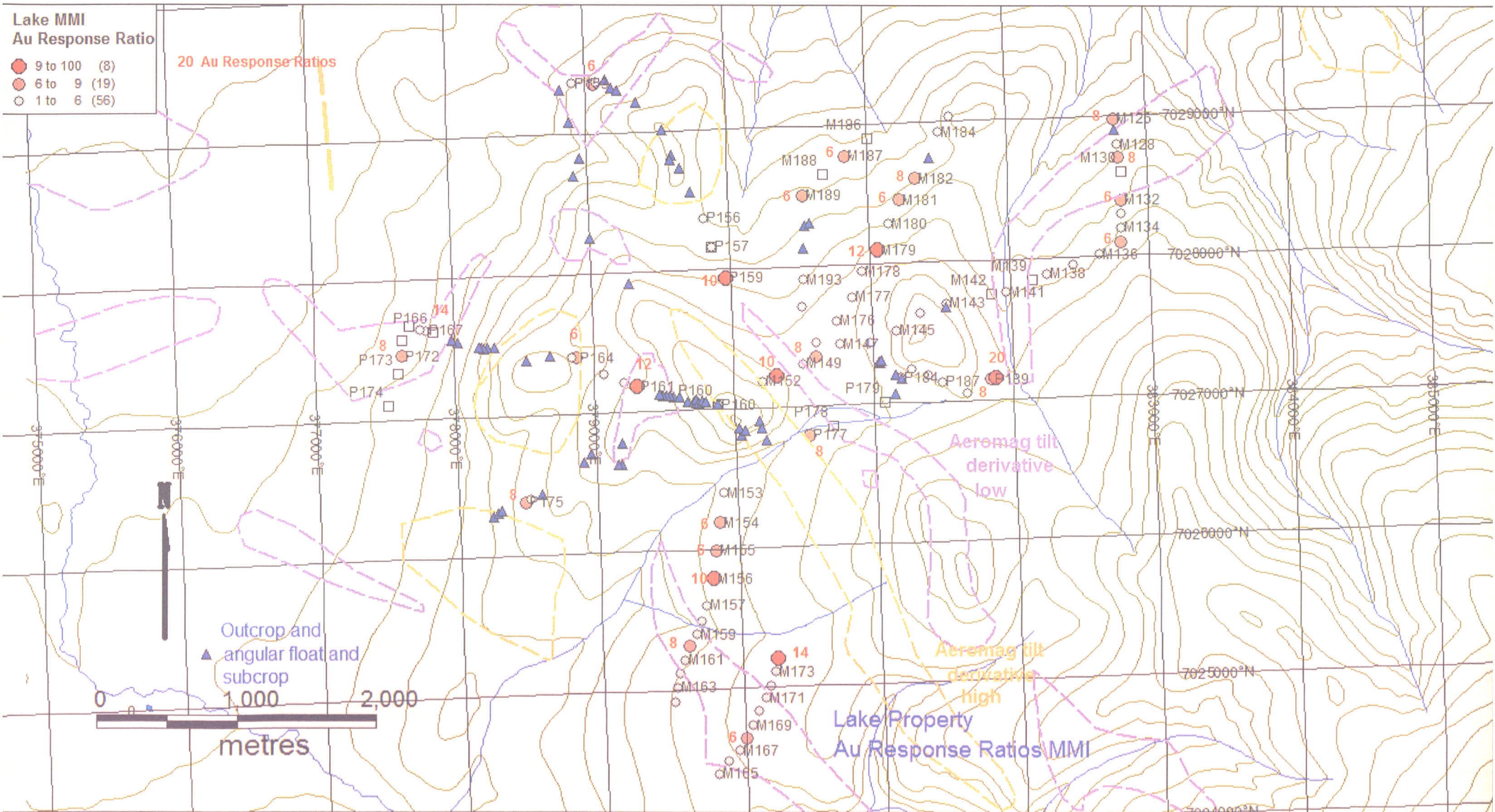
Ah RR UTM Lake Project																																	
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M142	381860	7027754	2	1	0	2	3	2	4	4	1	3	1	2	1	3	1	1	2	6	2	2	2	3	1	1	1	2	3	3	2	3	1
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M188	380686	7028650	1	1	1	2	1	1	2	3	7	3	1	1	1	2	3	0	2	2	3	3	3	3	2	1	1	54	4	4	4	2	2
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P160	379880	7027035	5	8	5	6	4	4	5	6	6	4	4	2	4	3	41	2	5	9	6	7	5	9	4	3	3	141	11	10	13	9	4
P166	377849	7027628	6	1	1	1	2	1	2	2	0	0	2	1	2	1	1	1	2	0	0	0	1	2	1	1	1	9	2	18	16	4	1
P169	377678	7027674	1	1	1	3	1	2	2	2	1	1	2	1	2	2	4	1	2	2	2	3	3	3	3	2	1	6	3	4	3	2	3
P170	377627	7027576	2	3	1	2	1	2	2	3	2	1	2	2	2	2	8	1	3	4	2	2	2	3	3	3	2	8	5	7	5	4	3
P173	377592	7027339	2	4	2	3	1	2	4	1	2	1	3	2	3	3	5	2	4	2	1	1	1	5	2	3	3	10	8	9	7	8	2
P174	377516	7027105	0	0	1	1	2	1	1	3	1	4	1	1	1	1	7	1	0	1	3	2	2	2	1	0	0	3	1	1	1	1	1
P178	380701	7026849	3	2	1	1	1	1	3	1	3	0	2	2	2	2	1	1	3	1	1	1	1	2	1	2	2	6	2	6	4	2	1
P179	381077	7027008	1	1	0	1	3	2	1	1	1	2	1	1	1	1	3	0	1	1	2	1	1	3	1	0	1	3	2	2	2	3	1
P180	381076	7027009	1	11	1	1	1	1	2	2	2	1	1	1	1	1	4	1	5	2	3	2	2	1	1	1	1	11	2	2	2	3	1



- Ah Lake  
Mo Response Ratios**
- 9 to 100 (1)
  - 6 to 9 (2)
  - 1 to 6 (12)
- Lake MMI  
Mo Response Ratio**
- 9 to 100 (3)
  - 1 to 9 (80)

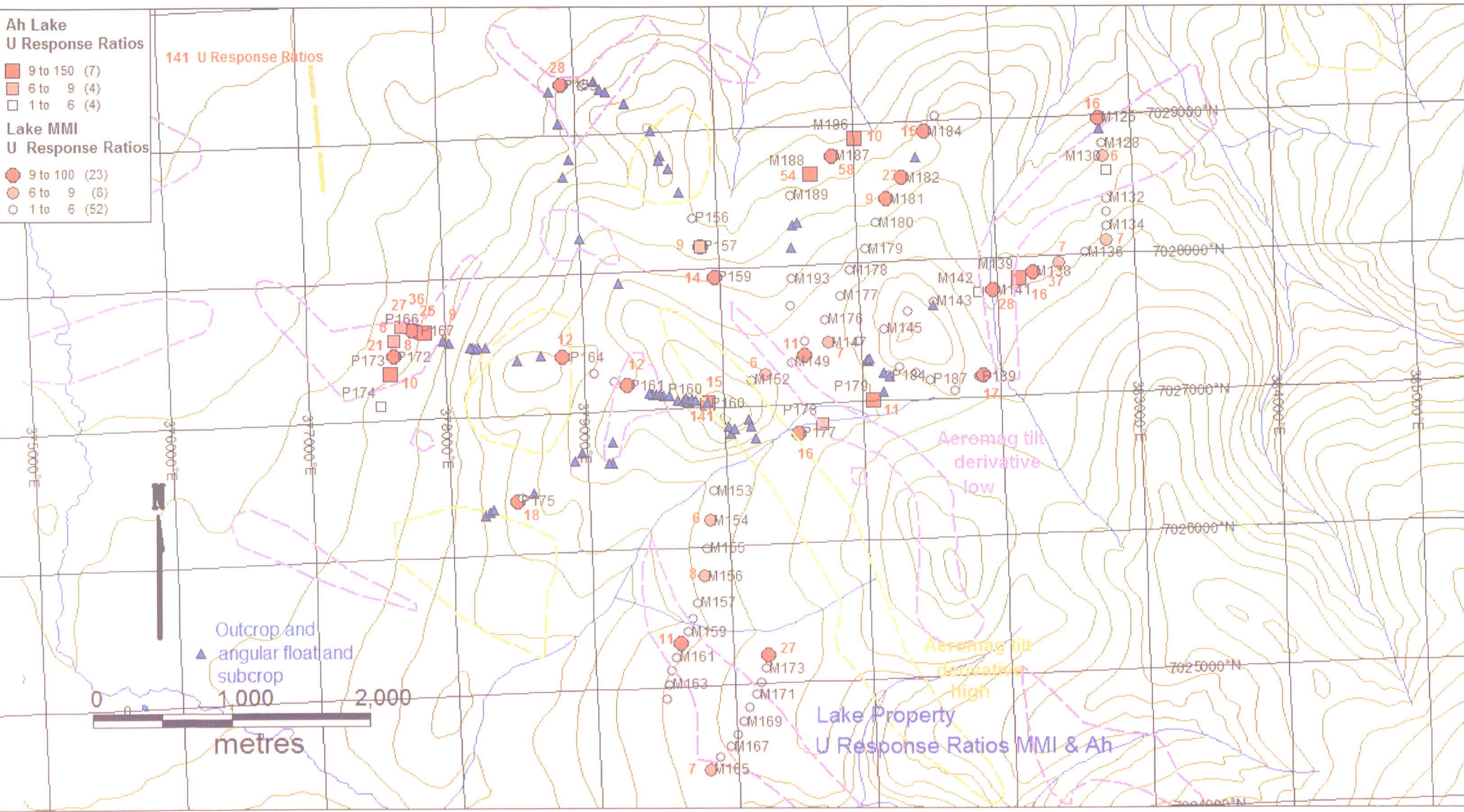
23 Mo Response Ratios





- Ah Lake  
U Response Ratios**
- 9 to 150 (7)
  - 6 to 9 (4)
  - 1 to 6 (4)
- Lake MMI  
U Response Ratios**
- 9 to 100 (23)
  - 6 to 9 (8)
  - 1 to 6 (52)

141 U Response Ratios



Outcrop and  
angular float and  
subcrop  
▲

0 1,000 2,000  
metres

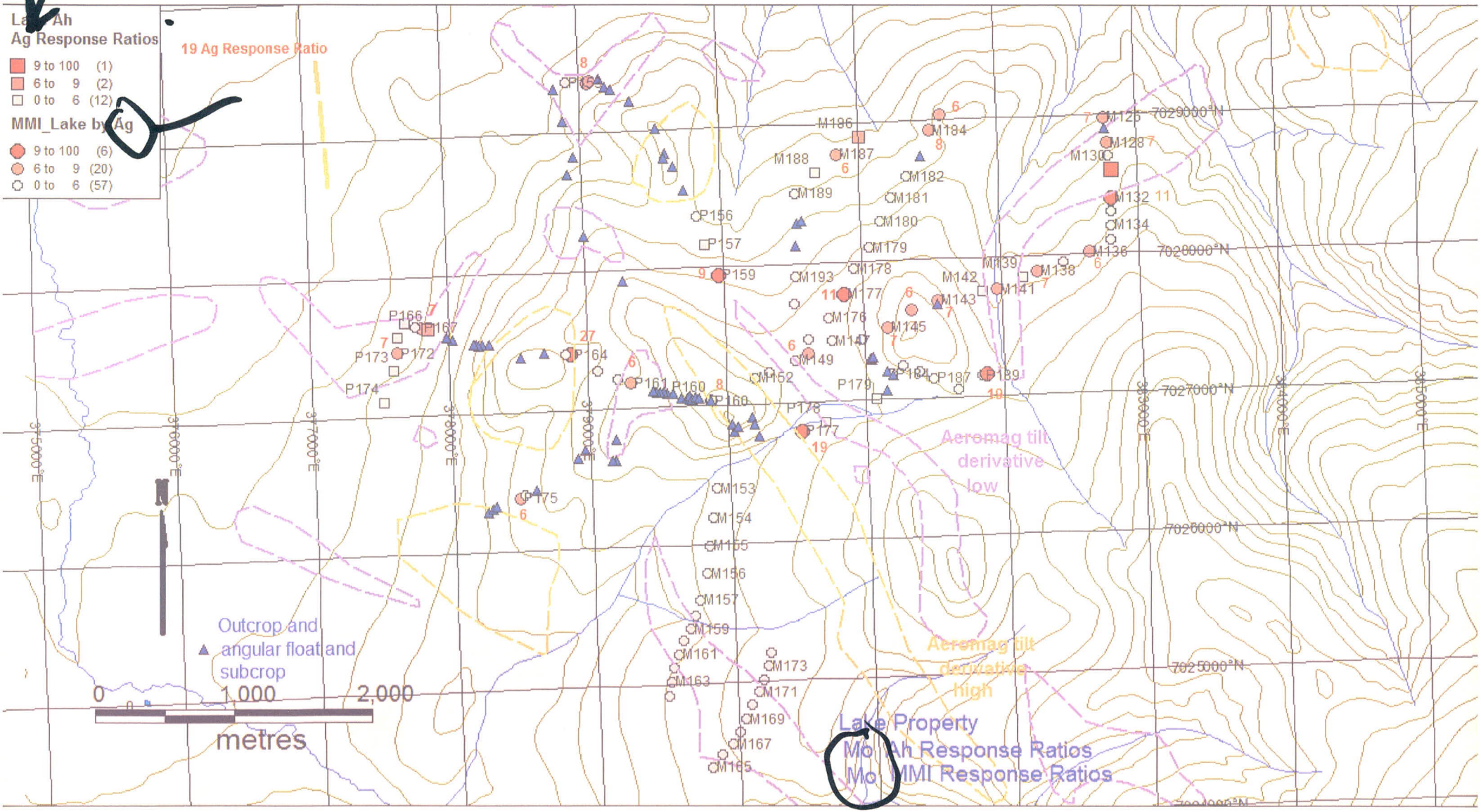
Aeromag tilt  
derivative  
low

Aeromag tilt  
derivative  
high

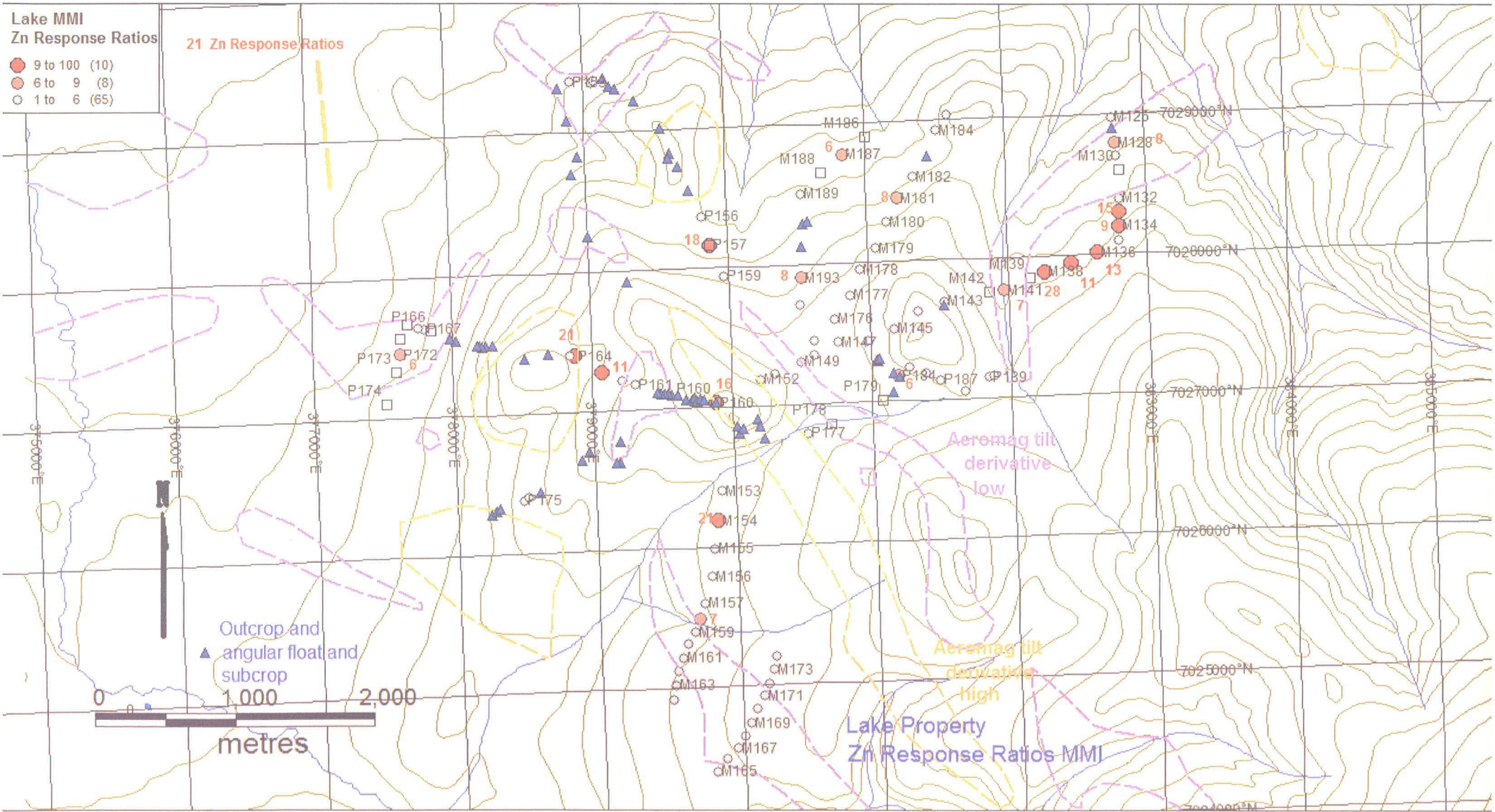
Lake Property  
U Response Ratios MMI & Ah

- La Ah  
Ag Response Ratios
- 9 to 100 (1)
  - 6 to 9 (2)
  - 0 to 6 (12)
- MMI\_Lake by Ag
- 9 to 100 (6)
  - 6 to 9 (20)
  - 0 to 6 (57)

19 Ag Response Ratio



Ag





## **SUMMARY**

Work described in this report was conducted under a YMIP Focussed Regional Grant, Hardrock Type. YMIP No is 12-020 awarded to Jeff Mieras.

The following is an historical account of events on this project:

June 6. Mob Whs to Dawson. Bought supplies. Shared time with other projects.

June 17. Flew in afternoon from Smoko Project to Lake Project. Set up camp.

June 18. Prospected and sampled.

June 19. Prospected and Sampled.

June 20. Prospected and Sampled.

June 21. Flew to Spec Project.

July 5. Demob to Whs. Sorted and shipped samples. Stored camp supplies and van. Shared this time with other projects.

The target area occurs in the underexplored pre-Reid glaciated terrain east of the White Gold District within the Reid Lakes Batholith. The project is located in the headwaters of a tributary to Robbed Creek 50 km due west of Stewart Crossing on NTS Map Sheet 115P06.

Richards and Mieras flew by helicopter from a previous fly camp on the Smoko Claims. The camp was slung onto the top of a small hill as indicated on the maps and a helipad was cut out suitable for pickup at the end of the program. From this camp the two prospectors made daily traverses for three days before flying out.

RGS samples geochemically anomalous for Au and its pathfinder elements occur over a 12 km by 3-4 km area. The length of this anomalous pattern could be caused in part by glacial smearing by pre-Reid glaciers from a source in the target area. RGS data also indicate the potential for Cu-Mo-Au porphyry mineralization over a similar area within the batholith. The target area occurs at the up-ice end of the RGS patterns in an area of hilly terrain that was deemed suitable for soil sampling prospecting.

Aeromagnetic tilt derivative lows that are known to associate with White Gold District structurally controlled gold prospects and deposits also exist within

the target area and were used in part to guide soil sampling for gold bearing structures.

Traverses were carried out using selective leach techniques because the area was known to have been glaciated in pre-Reid times and residual soils were believed to be absent. The primary method was MMI soil sampling at 100 m intervals on lines crossing the magnetic tilt derivative lows and spaced so as to give widespread coverage of as much of the area as possible. Where frozen ground prohibited the collection of MMI samples, Ah (organic) soil samples were collected. Where bedrock and subcrop exposures of unmineralized intrusive rock were encountered no samples were collected. Refer to figures for coverage in relation to the magnetic lows and highs.

All garbage was removed from camp and taken to Dawson City for disposal.

## **SURVEY METHODS**

### **General**

Soil sampling used methods employing selective leach analyses because the area had been glaciated during one or more pre-Reid glacial periods and MMI and Ah soil sampling can “see through” deep overburden including glacial till. Ah sampling was only used as a backup where MMI soils could not be collected.

Six man days were spent by Jeff Mieras and Gordon Richards collecting 83 MMI soil samples and 15 organic Ah soil samples. Lab results and spreadsheets showing GPS location with the geochemical data are also provided in Appendices. GPS coordinates were recorded using a UTM, Zone 8 Projection.

Sample details such as rock type and mineralization, soil colour, texture, depth, dampness and site slope were described in notes. Their locations were recorded in a Garmin GPSmap 60Cx. Some UTM co-ordinates were also recorded in notebooks as a backup in case of loss of the GPS unit or loss of data stored on the unit. No such loss occurred. Sampled material was placed into numbered bags as described below. Soils were collected at 100 m intervals on widely spaced lines designed to give broad coverage and cross the magnetic lows wherever possible.

Response ratios for 27 elements were calculated for all 83 MMI soil samples and are provided in Table 1. Response ratios for 31 elements were calculated for all 15 Ah soil samples and are provided in Table 2. Anomalous

results greater than selected threshold values for Au, Ag, Cu, Mo, Zn, U, and Ni are shown graphically on the figures. It is important to distinguish response ratios for MMI and Ah soil samples. Data have not been leveled between these two methods due to the low number of Ah samples. MMI and Ah thresholds are different for all elements.

### **Geology**

Gold possibly related to the magnetic lows was one target. This target is modeled after the White Gold District structurally controlled deposits with the realization that other gold bearing systems are certainly possible. Expected size of geochemically anomalous zones is up to three km long and up to 500 m or so wide. There are numerous examples from the White Gold District where a reconnaissance style soil line with a 100m spaced sample interval yielded only one anomalous sample that eventually led to the discovery of significant gold mineralization.

Porphyry style Cu-Au-Mo mineralization is the other target. In the following evaluation of the porphyry potential, the expected size of a porphyry system was used. In British Columbia the size of some of the cal-alkalic porphyry deposits was measured by scaling size of pits from Google Earth. The outside of the pits is clearly beyond the limits of ore but is considered to be within the geochemically anomalous halo or footprint and thus provides a crude expected geochemically anomalous target size for a porphyry deposit. Sizes of B.C. porphyry pits are:

Valley Copper	1800 m diam
Lornex	2000 m x 1300 m
Bethlehem	4 pits 500 to 600 m diam
Gibraltar	3 pits 1100 x 700 m, 1100 m diam, 500 x 1100 m
Granisle	2 pits 600 m and 700 m diam
Island Copper	2200 m x 1000 m
Brenda	800 m diam
Huckleberry	2 pits 500 m and 600 m diam

Porphyry target size is therefore in the 500 m to 2000 m diameter range. The first three pit sizes on the above list are from the Guichon Creek Batholith

which is similar in size to the Reid Lakes Batholith. Both batholiths intrude their own volcanic pile.

### **MMI Soil Samples.**

MMI analysis uses a weak partial extraction to improve the conventional geochemical response over buried ore deposits. The process measures the mobile metal ions from mineralization, which have moved toward the surface and become loosely attached to the surfaces of soil particles. They concentrate within the 10 to 25 cm soil depth which on the property is a mixture of loess and till. Its effectiveness has been documented in over 1000 case histories on six continents and includes numerous commercial successes. The anomalies are sharply bounded and in most cases directly overlie and define the extent of the surface projection of buried primary mineralized zones. The MMI process is a proprietary method developed by Wamtech of Australia. SGS Minerals Services in Toronto purchased all rights to the method and provides analyses in Canada.

Watch and ring were removed prior to sampling. Pits were dug by shovel to a depth of 30 cm in order to expose the soil profile for sampling. The profile was scraped clean with a plastic scoop to remove any metal effect from the shovel. A continuous strip of soil was collected by plastic scoop over the interval of 10 to 25 cm below the top of true soil, placed in a pre-numbered ziplock baggie and placed in an 11 inch by 20 inch 2 mil plastic bag. Loess was present at nearly all sample sites and was the sample medium for the bulk of all of the 83 MMI soils collected. Samples were kept cool until they were shipped to SGS Minerals Services in Toronto for analyses.

In the SGS Lab, samples are not dried or prepared in any way. The MMI process includes analyses of an unscreened 50-g sample using multi-component extractants. Metal contents are determined for 53 elements by ICP-MS in the parts per billion range.

Response Ratios were calculated for 27 elements as shown on Table 1. The average value for results of the lower quartile was calculated for each element. One-half of detection limit was used for those samples with values reported as less than detection limit. Then each result was divided by the lower quartile average to obtain its response ratio. A response ratio of 10 or more is considered

very significant for indicating underlying mineralization. Lesser values of 5 to 10 can also be important particularly where more than one element has such a value. Response ratios can best be thought of as a multiple of background in interpreting results.

### **Organic Ah Soil Samples.**

Ah horizon organic soil samples were collected from the very base of the organic layer overlying loess and placed into gusseted kraft bags. The organic layer was from 1 to 5 cm thick. Considerable care and time was taken to collect only completely decomposed organic soil. Samples were sent to Acme Labs in Vancouver, B.C., where samples were dried at 60 degrees C, 100 g sieved to -80 mesh, and a 15 g sample digested in 1:1:1 Aqua Regia and analyzed by Acme's Ultratrace ICP-MS analyses for 53 elements.

Response ratios were then calculated for 31 elements similar to those for the MMI soils. Refer to Table 2.

## **RESULTS**

MMI and Ah response ratios for Cu, Mo, Ag, Au, Zn, Ni, and U are shown graphically on the attached figures and for many more elements on Tables 1 and 2. The figures also show the aeromagnetic tilt derivative lows and highs, outcrops, subcrops and areas of abundant angular float.

### **Geology.**

The target area lies within the Reid Lakes Batholith best described by Ryan and Colpron in their Geoscience Map 7 of southwestern McQuesten mapsheet. Most outcrops were a coarse grained hornblende granodiorite with a mafic content of one to four percent. Weakly developed Kspar phenocrysts comprising up to 5% of rock volume were noticed in a few outcrops and float. Some weakly to strongly foliated granodiorite to diorite outcrops with a mafic content of five to twenty percent were also seen usually in areas of magnetic tilt derivative lows. Aplite textures were observed in angular boulders at the north end of the survey area. Outcrops were generally fresh with weak chloritic alteration seen in a few exposures. No continuity to this weak chloritic alteration was noted. No fracture style chlorite/epidote or pyrite bearing fractures were seen as might be expected peripheral to a porphyry deposit. Float 100 m east of P161 was fine grained pink

granodiorite with mafics altered to chlorite and some of the chlorite altered to sericite.

No live limonite along fractures was seen in outcrop or float as might be expected alongside a structurally controlled gold occurrence. However there were large tracts of no outcrop or angular float that could easily conceal such alteration styles. Geology was only recorded along the P-series of samples where Richards traversed.

Glaciation is described as pre-Reid in age. Reid glaciation began 200,000 years ago and ended about 50,000 years ago. The glaciation across the general area of the Lake Project is described as much older than Reid, possibly older than 500,000 years (Jeff Bond, personal communication, 2012). Presence of tills was confirmed in most soil pits. A 5 to 30 cm thick post McConnell age loess deposit blankets most of the hillsides that along with till makes mapping of underlying geology and the observation of altered float difficult.

#### **Au Response Ratios.**

High response ratios (RR) for gold are scattered across the target area. Three soil lines contain anomalous values that form a linear pattern. M173 with a RR of 14 in the south, M154 to M156 with RRs of 6, 6, and 10 about a km north, and P161 with a RR of 12 another km north, form a north northwest trending pattern of higher Au RRs. However there is little support from other elements as is obvious on Table 1. Only U provides support in all three samples. However, for whatever reason, the gold pathfinder elements might not form selective leach anomalies in this environment. The angular float 100 m east of P161 was fine grained granodiorite with mafics altered to chlorite some of which has been altered to sericite. This occurrence is close to the anomalous gold trend described.

P190 is a MMI soil sample at the central east part of the area that has the highest RR for Au with strong RR support from Ag (19), Hg (10), Cu (16), Ni (34), and U (17). This sample is worthy of follow-up soil sampling as no other samples lie to the east or south. P189 100 m west had an interesting RR of 8 for Au but no other elemental support.

#### **Cu Response Ratios.**

The highest RRs for Cu occur at the westernmost sampled area. Here RRs of 13, 26, 18, and 25 occur in MMI samples. Adjacent Ah RRs did not produce high RRs for Cu. This failure is interpreted to show that Ah sampling is not an effective selective leach for Cu in this environment. Outcrops shown on the figures 300 m east of these samples are unfoliated, unaltered coarse grained granodiorite typical of most outcrops seen on the project. No other outcrop or angular float was seen anywhere near these samples. Ignoring the Ah samples, the anomalous MMI samples could be part of a much larger anomalous system. They occur over a magnetic low which is part of a much larger field of weaker magnetic low measuring three by four km. Other element support is provided by RRs for Mo (23, 15, 4, and 3), by Ag (7, 5, 8, and 7), by Au (7, 5, 8, and 7), by Ni (10, 32, 18, and 61), and by U (25, 36, 27, and 21). This elemental signature is more characteristic of a porphyry target than a pure gold target. But because the anomaly is based on selective leaches and not all elements may be responsive in this environment a pure gold target with unresponsive pathfinder elements is a possibility. Mg is also modestly elevated which with the NI could be indicative of a more mafic bedrock host. The U RRs are very high and could be related to a reducing soil environment or to bedrock mineralization. This target area is a high priority target for follow-up soil sampling.

Other Cu response ratio anomalies occur sporadically across the survey. Only sample P190 discussed above under 'Au Response Ratios' is of interest.

### **Mo Response Ratios.**

The RRs described above under 'Cu Response Ratios' are the only ones of significance as only two other soils yielded isolated high values in areas of low RRs for other metals.

### **U, Ag, Zn, and Ni Response Ratios.**

Anomalous RRs for U have a contiguous pattern in the northeast part of the project area along three separate lines. RR values range from 7 to 58 in MMI samples and from 10 to 54 in Ah samples. Some support for this anomaly comes from Ag, Ni, Au, and Zn.

No other patterns of anomalous RRs are considered worthy of follow-up prospecting at this time but individual high gold values may be considered in future after higher priority targets have been evaluated.

## CONCLUSIONS AND RECOMMENDATIONS.

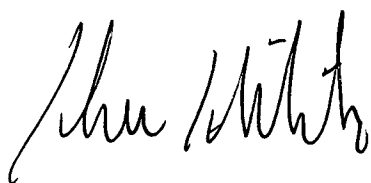
- Outcrops of coarse grained weakly Kspar porphyritic hornblende granodiorite coincided with the geology of the Reid Lakes Batholith as described by Ryan and Colpron.
- More mafic screens of foliated granodiorite to diorite coincided with aeromagnetic tilt derivative lows although not all such magnetic lows contained outcrops that might confirm this relationship.
- The hillsides are covered in till with discontinuous and partially admixed loess covering it. No residual soils were seen anywhere on the traverses.
- In general MMI samples were more responsive than Ah samples for those elements that appeared to form anomalies. On the best multi sample, multi element anomaly ( described immediately below) MMI samples responded well for Cu, Mo, Au, U, and Ni whereas adjacent Ah samples only responded for Mo and U. Similar lack of response for Ah samples can be seen elsewhere in the results. It is uncertain if gold pathfinder elements such as As, Sb, Te, Ba and Hg were active enough to form anomalous values or if they are absent in bedrock and thus not available to produce anomalies. Standard soil samples may or may not work in this environment. If they do they would certainly yield anomalies transported some distance by pre-Reid glaciers. It is recommended that proposed follow-up soil sampling on the best target include a conventional soil line across the anomaly to evaluate it's effectiveness.
- The best target is a Cu-Mo-Au-U-Ni target at the west limit of sampling over gentle slopes. Here four MMI and five Ah soils were collected. Of the MMI samples all four are highly anomalous for Cu (RR 13, 18, 24, 25), two are highly anomalous for Mo (RR 15, 23), two are anomalous for Au (RR 8, 14), all four are highly anomalous for U (RR 21, 25, 27, 36), and all four are highly anomalous for Ni (RR 10, 18, 21, 27). Adjacent Ah samples are in general weak for all elements with only U producing high response ratios and Mo modest response ratios. This pattern of anomalous RRs occurs over



a distance of 500 m and remains open to the north, west and south. It is highly recommended that follow-up soil samples be collected on a 200 m by 100 m grid to test for both porphyry and gold mineralization. U with Ni mineralization possibilities should also be considered in this work.

- A single sample (P190) anomaly is considered high priority. It occurs at the east end of an east running soil line at the east side of the survey area. It has strong response ratios for Ag (19), Au (20), Hg (10), Cu (16), Ni (34), and U (17). It is recommended that soil samples be collected east and west of this sample site to further evaluate this anomaly.
- A target of high U RRs occurs along three contiguous soil lines in the northeast of the project area over a distance of 1500 m by 600 m and open to the north. Ag, Ni, Au and Zn provide spotty anomalous support. Follow-up prospecting is recommended for this target using more closely spaced soil samples within the presently defined anomaly and extending soil sampling to the north to find the extent of the anomalous soils.
- A target of high Au RRs with only U support is loosely defined by samples on three lines that form a linear pattern. Additional soil sampling is recommended within the area described along the anomalous pattern to confirm its existence. This should only be done in conjunction with other recommendations as it is not a high priority. Lack of geochemical support from the usual suite of pathfinder elements may be due to those elements not forming anomalies or to their absence in the bedrock.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Gordon G Richards', written in a cursive style.

Gordon G Richards P.Eng.



## Certificate of Analysis

Work Order: TO122411

To: **Gordon Richards**  
**Gordon Richards**  
6410 Holly Park Drive  
DELTA  
BC V4K 4W6

Date: Aug 16, 2012

P.O. No. : Project: LAKE  
Project No. : -  
No. Of Samples : 83  
Date Submitted : Jul 26, 2012  
Report Comprises : Pages 1 to 19  
(Inclusive of Cover Sheet)

**Distribution of unused material:**

Discard samples:

Certified By :

Bruce Robertson  
Operations Manager

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Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample  
n.a. = Not applicable -- = No result  
\*INF = Composition of this sample makes detection impossible by this method  
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion  
Methods marked with an asterisk (e.g. \*NAA08V) were subcontracted  
Methods marked with the @ symbol (e.g. @AAS21E) denote accredited tests

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Element Method Det.Lim. Units	Ag@ MMI-M5 1 ppb	Al@ MMI-M5 1 ppm	As@ MMI-M5 10 ppb	Au@ MMI-M5 0.1 ppb	Ba@ MMI-M5 10 ppb	Bi@ MMI-M5 1 ppb	Ca@ MMI-M5 10 ppm	Cd@ MMI-M5 1 ppb	Ce@ MMI-M5 5 ppb	Co@ MMI-M5 5 ppb
M126	14	94	20	0.4	6380	<1	220	2	3700	212
M128	14	198	20	0.2	1760	<1	40	2	452	102
M129	3	93	20	0.4	7280	<1	230	1	2580	108
M141	16	77	<10	0.2	3940	<1	340	11	442	321
M132	23	190	20	0.3	2540	1	80	1	1690	31
M133	2	156	20	<0.1	4610	<1	70	2	762	26
M134	3	245	30	<0.1	2690	<1	40	4	492	67
M135	10	144	20	0.3	4810	<1	110	<1	3090	22
M136	12	282	30	<0.1	2390	<1	40	5	442	97
M137	7	159	40	0.2	5410	<1	140	4	2070	122
M138	15	90	20	0.2	4740	<1	270	23	1190	217
M143	15	115	20	0.1	3060	<1	100	<1	1300	27
M144	13	125	<10	<0.1	3420	<1	50	<1	472	32
M145	15	82	<10	0.1	5210	<1	360	1	585	49
M146	8	76	<10	0.2	8340	<1	330	1	2140	103
M147	8	67	<10	0.2	9320	<1	530	3	2290	96
M148	13	121	<10	0.4	9620	<1	300	2	420	36
M149	3	94	20	0.2	10700	<1	130	1	1570	126
M151	7	225	20	0.5	6730	<1	80	1	2100	64
M152	6	195	20	<0.1	3280	<1	120	<1	389	45
M153	3	180	30	<0.1	4040	<1	90	2	397	66
M154	9	194	20	0.3	2860	<1	90	14	245	219
M155	3	134	30	0.3	5240	<1	140	1	2240	69
M156	5	119	10	0.5	7930	<1	200	<1	5170	42
M157	3	141	30	<0.1	3590	<1	70	2	353	44
M158	8	101	<10	<0.1	2760	<1	260	10	506	276
M159	3	120	30	<0.1	2820	<1	110	2	790	80
M160	3	94	<10	0.4	6800	<1	250	1	2140	61
M161	2	64	20	0.2	5000	<1	160	2	1040	20
M162	3	79	<10	0.1	4480	<1	140	<1	797	46
M163	4	101	<10	0.1	4630	<1	230	1	1170	109
M164	2	152	20	<0.1	3800	<1	120	<1	412	25
M165	2	69	<10	0.2	7570	<1	380	1	1560	45
M166	4	127	10	<0.1	6240	<1	200	<1	339	78
M167	7	140	30	0.1	3730	<1	120	2	486	79
M168	5	158	30	0.3	6630	<1	200	<1	2240	118
M169	4	137	30	<0.1	4240	<1	110	<1	446	37
M170	1	33	<10	0.2	6350	<1	220	<1	1390	9
M171	1	104	20	<0.1	3810	<1	40	1	533	45
M172	1	120	20	<0.1	3680	<1	80	2	661	88
M173	2	126	30	<0.1	4500	<1	120	3	866	42
M174	8	65	<10	0.7	11300	<1	310	1	868	40
M176	2	115	<10	<0.1	7100	<1	30	<1	503	47

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Element Method Det.Lim. Units	Ag@ MMI-M5 1 ppb	Al@ MMI-M5 1 ppm	As@ MMI-M5 10 ppb	Au@ MMI-M5 0.1 ppb	Ba@ MMI-M5 10 ppb	Bi@ MMI-M5 1 ppb	Ca@ MMI-M5 10 ppm	Cd@ MMI-M5 1 ppb	Ce@ MMI-M5 5 ppb	Co@ MMI-M5 5 ppb
M177	23	220	20	<0.1	3330	<1	10	<1	267	29
M178	<1	158	20	<0.1	3590	<1	40	<1	253	32
M179	4	273	10	0.6	3950	<1	60	3	357	60
M180	5	230	30	<0.1	3250	<1	50	4	533	47
M181	6	150	10	0.3	7210	<1	280	8	3200	134
M182	7	122	20	0.4	6820	<1	220	2	3800	105
M184	18	121	<10	0.2	6250	<1	370	5	720	42
M185	13	63	<10	<0.1	3430	<1	390	<1	137	37
M187	13	92	<10	0.3	3330	<1	340	12	518	102
M193	4	183	40	<0.1	2890	<1	90	2	250	71
M194	11	232	30	0.1	3390	<1	60	<1	547	30
M189	5	117	20	0.3	4690	<1	230	2	1480	89
P153	8	57	<10	<0.1	6110	<1	650	4	347	105
P154	12	25	20	0.3	6240	<1	390	3	139	117
P155	16	183	<10	<0.1	4050	<1	380	6	495	210
P156	6	79	20	<0.1	4070	<1	150	<1	525	63
P157	11	69	<10	0.2	4270	<1	390	13	618	246
P159	20	37	<10	0.5	6420	<1	540	7	536	21
P160	16	163	10	0.2	1910	<1	160	9	850	144
P161	12	95	<10	0.6	6200	<1	180	<1	1020	41
P162	2	149	<10	0.2	4670	<1	400	1	2810	41
P163	2	126	30	<0.1	2530	<1	120	5	434	112
P164	58	23	<10	0.3	12800	<1	640	75	350	129
P165	6	80	10	0.1	7890	<1	410	2	2880	202
P167	15	22	<10	0.2	1440	<1	440	5	460	51
P168	11	50	10	0.2	2150	<1	470	16	572	229
P171	17	18	<10	0.7	6760	<1	650	1	275	9
P172	15	42	<10	0.4	6980	<1	510	9	583	77
P175	13	125	10	0.4	8950	<1	420	2	2500	188
P176	7	111	20	<0.1	5570	<1	190	2	266	32
P177	41	16	<10	0.4	7520	<1	710	41	96	453
P181	3	234	20	0.2	3880	<1	130	2	389	240
P184	11	106	20	<0.1	4070	<1	120	2	569	59
P185	7	187	40	0.1	4200	<1	80	<1	1070	44
P186	8	127	10	<0.1	4500	<1	150	<1	573	61
P187	2	160	20	0.1	4470	<1	140	<1	181	63
P188	2	157	20	0.1	3550	<1	130	<1	441	29
P189	4	135	10	0.4	6210	<1	290	2	3360	54
P190	40	47	<10	1.0	7750	<1	730	2	617	8
P191	8	221	10	<0.1	3970	<1	40	2	154	52
*Rep M126	12	96	20	0.5	6600	<1	220	2	3910	219
*Rep M151	6	197	20	0.4	6240	<1	100	1	1950	59
*Rep M160	3	93	10	0.5	6830	<1	250	<1	2090	48

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Element Method Det.Lim. Units	Ag@ MMI-M5 1 ppb	Al@ MMI-M5 1 ppm	As@ MMI-M5 10 ppb	Au@ MMI-M5 0.1 ppb	Ba@ MMI-M5 10 ppb	Bi@ MMI-M5 1 ppb	Ca@ MMI-M5 10 ppm	Cd@ MMI-M5 1 ppb	Ce@ MMI-M5 5 ppb	Co@ MMI-M5 5 ppb
*Rep M176	2	115	<10	<0.1	7930	<1	40	<1	555	51
*Rep P159	16	30	<10	0.3	5890	<1	480	5	525	17
*Rep P175	14	114	10	0.3	8660	<1	400	3	2040	157
*Rep P190	31	44	<10	1.3	7220	<1	630	2	447	16
*Std MMISRM16	18	48	20	25.3	50	<1	220	5	16	63
*Std AMIS0169	8	75	10	0.5	610	<1	40	2	555	123
*Std MMISRM18	28	28	10	10.1	160	<1	210	99	24	79
*BIK BLANK	<1	<1	<10	<0.1	<10	<1	<10	<1	<5	<5
*BIK BLANK	<1	1	<10	<0.1	<10	<1	<10	<1	<5	<5
*BIK BLANK	<1	<1	<10	<0.1	<10	<1	<10	<1	<5	<5

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Element Method Det.Lim. Units	Cr@ MMI-M5 100 ppb	Cs@ MMI-M5 0.5 ppb	Cu@ MMI-M5 10 ppb	Dy@ MMI-M5 1 ppb	Er@ MMI-M5 0.5 ppb	Eu@ MMI-M5 0.5 ppb	Fe@ MMI-M5 1 ppm	Ga@ MMI-M5 1 ppb	Gd@ MMI-M5 1 ppb	Hg@ MMI-M5 1 ppb
M126	<100	<0.5	590	297	138	90.3	39	18	425	<1
M128	<100	<0.5	710	53	32.3	9.5	149	11	48	<1
M129	<100	0.5	330	118	44.9	47.8	36	14	216	<1
M141	<100	<0.5	1330	67	35.7	16.2	46	3	79	<1
M132	<100	<0.5	220	192	92.8	37.0	47	18	234	<1
M133	<100	0.6	120	55	27.2	11.0	45	11	66	<1
M134	200	3.3	140	45	21.1	9.2	108	9	52	<1
M135	<100	0.8	390	378	159	60.7	23	17	376	<1
M136	<100	0.7	160	46	23.0	9.3	93	10	51	<1
M137	100	0.8	700	139	62.0	37.1	101	16	181	<1
M138	<100	<0.5	1280	130	74.1	30.9	81	8	157	<1
M143	<100	1.8	210	75	34.2	21.3	58	14	110	<1
M144	<100	1.2	100	18	8.4	6.7	46	6	23	<1
M145	<100	<0.5	1050	95	47.0	23.5	38	5	130	<1
M146	<100	<0.5	290	142	63.6	47.0	16	10	229	<1
M147	<100	<0.5	390	257	141	66.5	10	9	356	1
M148	<100	0.7	610	139	66.6	33.7	14	3	155	<1
M149	<100	1.8	160	113	48.9	36.1	43	13	155	<1
M151	<100	0.9	420	170	60.4	42.2	35	10	269	<1
M152	<100	1.9	170	33	15.4	8.1	43	6	39	<1
M153	<100	2.2	190	35	14.7	9.3	41	8	41	<1
M154	<100	<0.5	1190	64	41.5	10.0	168	5	50	<1
M155	<100	0.5	350	340	190	80.8	34	14	400	<1
M156	<100	<0.5	500	282	122	79.2	15	27	438	<1
M157	<100	0.8	160	20	9.8	5.1	64	10	23	<1
M158	<100	<0.5	710	49	24.7	11.9	51	3	58	<1
M159	<100	1.1	270	53	22.0	13.8	56	11	67	<1
M160	<100	<0.5	660	468	250	123	14	12	595	<1
M161	<100	<0.5	220	126	68.1	29.9	29	8	167	<1
M162	<100	0.7	220	94	44.2	23.7	12	6	119	<1
M163	<100	<0.5	190	116	57.7	32.7	21	7	171	<1
M164	<100	1.6	220	24	9.9	6.3	39	6	28	<1
M165	<100	<0.5	230	309	172	79.0	6	8	379	<1
M166	<100	1.0	220	22	10.1	6.1	29	4	24	<1
M167	<100	1.4	260	23	9.5	6.2	63	9	25	<1
M168	<100	0.6	460	377	195	94.4	39	16	459	<1
M169	<100	1.3	190	42	17.6	11.5	55	12	55	<1
M170	<100	<0.5	220	229	119	59.9	7	7	320	<1
M171	<100	1.1	130	23	9.4	7.1	40	5	30	<1
M172	<100	1.2	200	16	6.2	4.7	50	6	20	<1
M173	<100	0.8	310	83	39.1	22.9	60	13	111	<1
M174	<100	<0.5	1170	310	184	72.5	10	6	382	2
M176	<100	1.9	80	27	12.7	8.5	23	5	30	<1

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Element Method Det.Lim. Units	Cr@ MMI-M5 100 ppb	Cs@ MMI-M5 0.5 ppb	Cu@ MMI-M5 10 ppb	Dy@ MMI-M5 1 ppb	Er@ MMI-M5 0.5 ppb	Eu@ MMI-M5 0.5 ppb	Fe@ MMI-M5 1 ppm	Ga@ MMI-M5 1 ppb	Gd@ MMI-M5 1 ppb	Hg@ MMI-M5 1 ppb
M177	<100	2.5	220	20	9.0	6.9	35	5	22	<1
M178	<100	2.3	100	18	8.1	5.2	58	8	19	<1
M179	<100	1.7	160	19	8.8	6.1	55	5	23	<1
M180	100	2.4	170	23	9.5	6.6	104	12	28	<1
M181	<100	<0.5	360	195	84.0	64.0	31	14	310	<1
M182	<100	<0.5	850	1000	553	251	12	26	1220	2
M184	<100	<0.5	1050	165	96.7	33.5	39	4	174	<1
M185	<100	<0.5	110	9	4.7	2.7	18	1	12	<1
M187	<100	<0.5	1300	91	52.1	22.4	62	3	106	<1
M193	<100	<0.5	130	16	8.4	4.8	116	12	20	<1
M194	<100	2.1	230	59	27.3	16.0	52	11	71	<1
M189	<100	0.8	290	96	37.9	32.7	48	11	144	<1
P153	<100	<0.5	670	27	14.0	7.7	42	1	36	<1
P154	<100	<0.5	1090	10	5.2	3.9	78	<1	13	<1
P155	<100	<0.5	240	28	14.0	7.9	53	3	40	<1
P156	<100	<0.5	140	70	37.0	12.0	35	6	91	<1
P157	<100	<0.5	1330	104	56.7	22.7	50	4	121	<1
P159	<100	<0.5	2070	117	67.9	27.2	37	2	140	<1
P160	<100	<0.5	300	295	171	43.9	99	6	270	<1
P161	<100	0.6	590	305	164	71.8	16	6	358	<1
P162	<100	<0.5	160	305	154	46.2	17	14	368	<1
P163	100	0.7	320	35	17.1	6.9	162	5	42	<1
P164	<100	<0.5	1980	83	43.4	19.7	11	1	101	2
P165	<100	<0.5	1150	433	229	118	36	15	627	<1
P167	<100	<0.5	1750	55	26.9	14.8	41	2	79	<1
P168	<100	<0.5	3200	86	48.9	20.8	71	3	107	<1
P171	<100	<0.5	2340	86	44.8	21.1	18	<1	110	<1
P172	<100	<0.5	3290	90	51.3	22.7	35	1	109	<1
P175	<100	<0.5	1320	463	261	100	26	13	553	<1
P176	<100	<0.5	100	12	5.8	3.7	41	4	16	<1
P177	<100	<0.5	5080	16	8.1	5.6	24	<1	22	<1
P181	<100	<0.5	120	55	29.6	9.8	51	5	55	<1
P184	<100	1.1	320	26	13.7	7.9	50	7	31	<1
P185	<100	1.1	270	70	30.6	18.2	62	17	81	<1
P186	<100	0.8	190	59	28.0	15.5	27	4	65	<1
P187	<100	<0.5	110	7	3.3	2.5	65	6	9	<1
P188	<100	0.5	160	25	8.5	6.4	35	7	27	<1
P189	<100	<0.5	300	268	131	63.6	32	16	342	<1
P190	<100	<0.5	2100	239	143	51.3	10	2	276	5
P191	<100	3.6	90	14	6.2	3.8	44	6	13	<1
*Rep M126	<100	<0.5	590	312	141	93.9	38	21	465	<1
*Rep M151	<100	0.7	390	256	89.3	55.9	42	15	305	<1
*Rep M160	<100	<0.5	650	444	238	116	14	11	578	<1

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Element Method Det.Lim. Units	Cr@ MMI-M5 100 ppb	Cs@ MMI-M5 0.5 ppb	Cu@ MMI-M5 10 ppb	Dy@ MMI-M5 1 ppb	Er@ MMI-M5 0.5 ppb	Eu@ MMI-M5 0.5 ppb	Fe@ MMI-M5 1 ppm	Ga@ MMI-M5 1 ppb	Gd@ MMI-M5 1 ppb	Hg@ MMI-M5 1 ppb
*Rep M176	<100	2.0	80	29	13.7	9.6	24	5	33	<1
*Rep P159	<100	<0.5	1730	78	41.9	19.8	33	2	98	<1
*Rep P175	<100	<0.5	1320	474	280	96.9	23	9	542	<1
*Rep P190	<100	<0.5	2040	183	109	39.6	12	2	211	4
*Std MMISRM16	<100	11.2	820	2	0.8	0.9	3	<1	4	20
*Std AMIS0169	100	7.4	4250	33	14.5	12.9	39	13	51	2
*Std MMISRM18	<100	6.4	1030	4	1.7	1.3	4	<1	6	8
*Bik BLANK	<100	<0.5	<10	<1	<0.5	<0.5	<1	<1	<1	<1
*Bik BLANK	<100	<0.5	<10	<1	<0.5	<0.5	<1	<1	<1	<1
*Bik BLANK	<100	<0.5	<10	<1	<0.5	<0.5	<1	<1	<1	<1

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Element Method Det.Lim. Units	In@ MMI-M5 0.5 ppb	K@ MMI-M5 0.1 ppm	La@ MMI-M5 1 ppb	Li@ MMI-M5 5 ppb	Mg@ MMI-M5 1 ppm	Mn@ MMI-M5 10 ppb	Mo@ MMI-M5 5 ppb	Nb@ MMI-M5 0.5 ppb	Nd@ MMI-M5 1 ppb	Ni@ MMI-M5 5 ppb
M126	<0.5	16.9	2110	<5	42	1360	<5	2.5	2740	291
M128	<0.5	18.7	291	<5	14	910	<5	7.9	239	141
M129	<0.5	19.4	2100	<5	53	1840	<5	2.4	2350	133
M141	<0.5	3.8	300	<5	41	10200	8	0.5	340	573
M132	<0.5	6.3	1380	<5	17	850	<5	9.4	1460	67
M133	<0.5	9.7	504	<5	16	1540	5	3.5	432	50
M134	<0.5	9.2	293	<5	5	2500	<5	6.0	276	64
M135	<0.5	8.0	2650	<5	31	190	<5	2.1	2050	32
M136	<0.5	5.9	238	<5	11	2380	<5	9.1	256	87
M137	<0.5	3.9	1110	<5	19	1480	<5	5.6	1140	200
M138	<0.5	5.5	558	<5	46	9290	5	1.6	820	1130
M143	<0.5	45.1	1160	<5	17	710	<5	7.6	1050	64
M144	<0.5	63.6	269	<5	7	1190	<5	4.9	165	18
M145	<0.5	20.0	471	<5	49	2440	<5	0.6	664	235
M146	<0.5	18.2	1180	<5	72	840	<5	<0.5	1660	307
M147	<0.5	18.7	457	<5	101	4800	<5	<0.5	1120	664
M148	<0.5	3.4	307	<5	44	440	<5	<0.5	455	251
M149	<0.5	5.3	947	<5	24	3260	<5	12.0	1030	79
M151	<0.5	5.5	2230	<5	14	350	<5	3.5	1360	41
M152	<0.5	9.4	237	<5	15	430	<5	3.6	213	61
M153	<0.5	8.5	408	<5	17	960	<5	5.1	218	71
M154	<0.5	7.6	106	<5	19	2270	<5	2.6	143	413
M155	<0.5	6.8	1130	<5	28	1210	<5	6.6	1880	169
M156	<0.5	5.4	2890	<5	41	830	<5	0.9	2340	145
M157	<0.5	11.6	207	<5	15	590	<5	8.8	136	62
M158	<0.5	10.5	258	<5	40	5650	<5	1.0	281	397
M159	<0.5	12.1	487	<5	13	800	<5	8.2	435	78
M160	<0.5	4.3	1080	<5	51	340	<5	<0.5	2340	230
M161	<0.5	7.2	575	<5	28	940	<5	4.2	865	94
M162	<0.5	4.8	708	<5	28	810	<5	2.0	592	58
M163	<0.5	11.5	604	<5	41	1370	<5	2.9	926	102
M164	<0.5	7.0	479	<5	20	300	<5	12.4	180	47
M165	<0.5	3.7	650	<5	83	330	<5	<0.5	1570	223
M166	<0.5	4.5	257	<5	43	140	<5	7.6	115	106
M167	<0.5	7.4	301	<5	21	690	<5	13.3	142	82
M168	<0.5	9.0	1140	<5	41	800	<5	7.9	1990	184
M169	<0.5	17.5	420	<5	20	580	<5	9.8	318	55
M170	<0.5	6.4	747	<5	38	340	<5	0.7	1490	115
M171	<0.5	10.3	312	<5	9	810	<5	6.5	179	36
M172	<0.5	6.7	339	<5	11	1630	<5	7.6	153	72
M173	<0.5	10.2	494	<5	17	860	<5	8.1	649	116
M174	<0.5	4.3	585	<5	62	160	<5	<0.5	1020	289
M176	<0.5	11.8	342	<5	16	820	<5	14.9	173	22

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Element Method Det.Lim. Units	In@ MMI-M5 0.5 ppb	K@ MMI-M5 0.1 ppm	La@ MMI-M5 1 ppb	Li@ MMI-M5 5 ppb	Mg@ MMI-M5 1 ppm	Mn@ MMI-M5 10 ppb	Mo@ MMI-M5 5 ppb	Nb@ MMI-M5 0.5 ppb	Nd@ MMI-M5 1 ppb	Ni@ MMI-M5 5 ppb
M177	<0.5	12.3	151	<5	2	470	<5	6.2	118	20
M178	<0.5	8.5	130	<5	6	810	<5	14.0	100	28
M179	<0.5	13.0	271	<5	12	590	<5	3.1	147	82
M180	<0.5	8.7	376	<5	10	570	<5	9.0	173	51
M181	<0.5	4.4	1950	<5	54	1010	<5	1.5	2190	172
M182	<0.5	7.7	2170	<5	43	220	<5	<0.5	3050	206
M184	<0.5	8.2	368	<5	69	1560	<5	<0.5	657	983
M185	<0.5	51.8	83	<5	80	560	<5	0.9	63	90
M187	<0.5	4.7	358	<5	36	3880	8	0.7	438	760
M193	<0.5	12.6	136	<5	21	1050	<5	11.7	107	112
M194	<0.5	5.1	511	<5	12	490	<5	9.3	350	48
M189	<0.5	16.7	978	<5	42	990	<5	3.4	1010	136
P153	<0.5	24.5	217	8	141	1370	5	<0.5	184	312
P154	<0.5	21.5	65	<5	98	3730	12	0.5	71	181
P155	<0.5	17.6	459	10	102	390	<5	1.0	388	240
P156	<0.5	31.4	408	<5	40	810	<5	5.1	509	124
P157	<0.5	1.9	389	8	66	7220	<5	<0.5	482	856
P159	<0.5	2.6	280	<5	114	1040	<5	<0.5	431	1640
P160	<0.5	5.3	426	<5	28	660	<5	0.7	1010	345
P161	<0.5	11.3	442	<5	42	460	<5	<0.5	1180	137
P162	<0.5	10.0	2110	<5	80	1350	<5	<0.5	2360	204
P163	<0.5	7.2	257	<5	18	1820	<5	5.5	228	126
P164	<0.5	4.8	91	46	136	12400	8	<0.5	199	2110
P165	<0.5	6.8	1580	<5	95	1650	<5	<0.5	2950	327
P167	<0.5	5.8	274	14	83	1940	57	<0.5	362	493
P168	<0.5	7.1	422	9	117	7130	37	0.7	478	1530
P171	<0.5	3.7	156	<5	157	330	9	<0.5	282	843
P172	<0.5	5.4	218	21	106	3630	8	<0.5	355	2860
P175	<0.5	7.0	1330	<5	87	1490	<5	<0.5	2270	919
P176	<0.5	17.3	178	<5	30	300	<5	3.6	106	65
P177	<0.5	2.3	28	<5	79	13000	24	<0.5	63	1470
P181	<0.5	11.9	393	<5	33	3400	<5	1.8	275	107
P184	<0.5	28.2	239	<5	20	7410	5	6.4	183	68
P185	<0.5	13.4	764	<5	17	790	<5	17.3	537	54
P186	<0.5	33.2	374	<5	35	160	<5	1.8	296	106
P187	<0.5	41.6	119	<5	23	670	<5	10.6	48	106
P188	<0.5	26.4	364	<5	24	340	<5	9.4	160	62
P189	<0.5	16.3	2430	<5	78	1340	<5	2.4	2460	381
P190	<0.5	2.9	293	<5	96	290	<5	<0.5	566	1600
P191	<0.5	7.6	87	<5	9	930	<5	12.9	59	53
*Rep M126	<0.5	16.9	2210	<5	42	1480	<5	2.2	1890	280
*Rep M151	<0.5	5.8	1930	<5	18	230	<5	3.9	1880	40
*Rep M160	<0.5	4.3	1040	<5	50	290	<5	<0.5	2280	217

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Element	In@	K@	La@	Li@	Mg@	Mn@	Mo@	Nb@	Nd@	Ni@
Method	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5
Det.Lim.	0.5	0.1	1	5	1	10	5	0.5	1	5
Units	ppb	ppm	ppb	ppb	ppm	ppb	ppb	ppb	ppb	ppb
*Rep M176	<0.5	12.7	371	<5	16	760	<5	15.3	191	21
*Rep P159	<0.5	2.7	212	<5	96	880	<5	<0.5	329	1170
*Rep P175	<0.5	6.6	1040	<5	85	1440	<5	<0.5	1960	872
*Rep P190	<0.5	2.9	225	<5	77	450	<5	<0.5	440	1310
*Std MMISRM16	<0.5	41.0	4	<5	30	110	49	<0.5	13	248
*Std AMIS0169	<0.5	48.5	461	<5	33	3630	<5	3.3	409	493
*Std MMISRM18	<0.5	31.1	7	<5	98	680	40	<0.5	19	522
*Blk BLANK	<0.5	<0.1	<1	<5	<1	<10	<5	<0.5	2	<5
*Blk BLANK	<0.5	<0.1	<1	<5	<1	<10	<5	<0.5	<1	<5
*Blk BLANK	<0.5	<0.1	<1	<5	<1	<10	<5	<0.5	<1	<5

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Element Method Det.Lim. Units	P@ MMI-M5 0.1 ppm	Pb@ MMI-M5 10 ppb	Pd@ MMI-M5 1 ppb	Pr@ MMI-M5 1 ppb	Pt@ MMI-M5 1 ppb	Rb@ MMI-M5 5 ppb	Sb@ MMI-M5 1 ppb	Sc@ MMI-M5 5 ppb	Sm@ MMI-M5 1 ppb	Sn@ MMI-M5 1 ppb
M126	0.6	170	<1	473	<1	75	<1	185	461	<1
M128	1.7	150	<1	64	<1	121	<1	67	48	<1
M129	0.5	120	<1	438	<1	188	<1	60	294	<1
M141	0.2	90	<1	83	<1	23	<1	60	72	<1
M132	0.7	490	<1	405	<1	54	1	83	249	<1
M133	2.0	330	<1	127	<1	129	1	26	71	<1
M134	8.9	360	<1	75	<1	173	1	40	58	<1
M135	0.3	850	<1	387	<1	74	<1	201	311	<1
M136	2.9	420	<1	64	<1	106	1	43	52	<1
M137	2.2	220	<1	317	<1	77	2	102	187	<1
M138	0.8	160	<1	205	<1	37	1	78	156	<1
M143	1.6	210	<1	316	<1	255	<1	47	147	<1
M144	1.2	100	<1	48	<1	354	<1	29	27	<1
M145	0.5	60	<1	169	<1	130	<1	38	131	<1
M146	<0.1	160	<1	422	<1	26	<1	62	247	<1
M147	<0.1	50	<1	237	<1	<5	<1	42	287	<1
M148	<0.1	200	<1	96	<1	79	<1	123	118	<1
M149	0.9	200	<1	281	<1	121	2	94	170	<1
M151	0.5	740	<1	272	<1	122	1	153	210	<1
M152	1.2	380	<1	55	<1	156	1	40	40	<1
M153	1.8	230	<1	61	<1	144	1	43	39	<1
M154	3.4	100	<1	33	<1	51	1	100	38	<1
M155	0.8	210	<1	308	<1	74	1	248	391	<1
M156	<0.1	200	<1	666	<1	57	<1	247	459	<1
M157	3.0	100	<1	37	<1	63	<1	33	24	<1
M158	0.7	110	<1	69	<1	58	<1	47	58	<1
M159	2.0	140	<1	126	<1	110	1	53	70	<1
M160	<0.1	120	<1	344	<1	50	<1	245	547	<1
M161	0.8	70	<1	213	<1	53	<1	47	168	<1
M162	0.4	100	<1	151	<1	99	<1	68	115	<1
M163	0.4	90	<1	226	<1	86	<1	64	174	<1
M164	1.1	110	<1	54	<1	125	2	37	29	<1
M165	<0.1	70	<1	345	<1	38	<1	106	360	<1
M166	0.3	230	<1	32	<1	98	<1	35	22	<1
M167	1.2	170	<1	42	<1	118	2	46	26	<1
M168	0.5	260	<1	392	<1	67	2	299	423	<1
M169	1.5	130	<1	84	<1	120	1	47	56	<1
M170	0.1	20	<1	347	<1	23	<1	47	316	<1
M171	1.3	70	<1	52	<1	127	<1	29	32	<1
M172	2.0	70	<1	46	<1	68	1	28	23	<1
M173	2.9	90	<1	167	<1	90	2	67	118	<1
M174	<0.1	60	<1	199	<1	34	<1	116	288	<1
M176	0.9	100	<1	50	<1	250	<1	34	31	<1

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Element Method Det.Lim. Units	P@ MMI-M5 0.1 ppm	Pb@ MMI-M5 10 ppb	Pd@ MMI-M5 1 ppb	Pr@ MMI-M5 1 ppb	Pt@ MMI-M5 1 ppb	Rb@ MMI-M5 5 ppb	Sb@ MMI-M5 1 ppb	Sc@ MMI-M5 5 ppb	Sm@ MMI-M5 1 ppb	Sn@ MMI-M5 1 ppb
M177	1.1	300	<1	31	<1	189	<1	47	23	<1
M178	1.5	180	<1	27	<1	222	1	37	20	<1
M179	3.4	270	<1	43	<1	209	<1	27	25	<1
M180	4.9	200	<1	51	<1	149	1	45	30	<1
M181	0.3	300	<1	392	<1	28	<1	170	341	<1
M182	<0.1	560	<1	711	<1	84	<1	754	1100	<1
M184	0.1	100	<1	150	<1	27	<1	154	148	<1
M185	0.3	40	<1	16	<1	67	<1	8	12	<1
M187	0.4	120	<1	103	<1	55	<1	81	97	<1
M193	8.2	250	<1	28	<1	118	2	36	20	1
M194	1.3	370	<1	94	<1	97	1	75	67	<1
M189	0.7	230	<1	280	<1	122	<1	78	162	<1
P153	0.1	30	<1	46	<1	6	<1	27	34	<1
P154	0.4	70	<1	17	<1	8	4	21	14	<1
P155	0.7	140	<1	115	<1	38	<1	29	51	<1
P156	0.9	160	<1	126	<1	50	1	29	95	<1
P157	0.3	90	<1	114	<1	20	<1	69	106	<1
P159	<0.1	50	<1	92	<1	8	<1	47	110	<1
P160	1.4	260	<1	230	<1	47	<1	187	239	<1
P161	0.2	230	<1	250	<1	53	<1	182	316	<1
P162	0.1	120	<1	429	<1	38	<1	57	383	<1
P163	5.9	80	<1	60	<1	70	<1	34	45	<1
P164	0.1	70	<1	35	<1	12	<1	18	62	<1
P165	0.2	60	<1	469	<1	12	<1	98	639	<1
P167	0.3	30	<1	83	<1	12	<1	20	75	<1
P168	0.3	60	<1	116	<1	12	2	54	100	<1
P171	<0.1	20	<1	55	<1	<5	<1	21	81	<1
P172	<0.1	60	<1	73	<1	<5	2	35	90	<1
P175	0.1	200	<1	536	<1	21	<1	271	503	<1
P176	2.0	240	<1	31	<1	70	<1	16	17	<1
P177	<0.1	30	<1	12	<1	8	3	9	17	<1
P181	0.7	400	<1	70	<1	44	<1	70	55	<1
P184	2.9	300	<1	48	<1	357	<1	41	33	<1
P185	1.5	350	<1	159	<1	94	2	106	82	1
P186	0.3	270	<1	74	<1	124	<1	99	61	<1
P187	2.5	180	<1	14	<1	171	1	27	8	<1
P188	1.6	150	<1	53	<1	173	1	52	26	<1
P189	0.5	170	<1	458	<1	81	<1	115	362	<1
P190	<0.1	100	<1	106	<1	16	<1	50	180	<1
P191	2.8	160	<1	16	<1	255	<1	32	13	<1
*Rep M126	0.5	180	<1	497	<1	76	<1	198	482	<1
*Rep M151	0.4	730	<1	399	<1	121	1	212	280	<1
*Rep M160	<0.1	120	<1	333	<1	53	<1	247	527	<1

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Element Method Det.Lim. Units	P@ MMI-M5 0.1 ppm	Pb@ MMI-M5 10 ppb	Pd@ MMI-M5 1 ppb	Pr@ MMI-M5 1 ppb	Pt@ MMI-M5 1 ppb	Rb@ MMI-M5 5 ppb	Sb@ MMI-M5 1 ppb	Sc@ MMI-M5 5 ppb	Sm@ MMI-M5 1 ppb	Sn@ MMI-M5 1 ppb
*Rep M176	0.8	110	<1	55	<1	247	<1	35	34	<1
*Rep P159	0.1	30	<1	70	<1	11	<1	31	80	<1
*Rep P175	0.1	180	<1	298	<1	18	<1	259	455	<1
*Rep P190	0.5	90	<1	83	<1	23	<1	45	136	<1
*Std MMISRM16	0.3	110	26	2	<1	326	<1	9	4	<1
*Std AMIS0169	3.1	140	<1	111	<1	254	<1	67	69	<1
*Std MMISRM18	0.8	260	15	4	8	173	<1	<5	5	<1
*Blk BLANK	<0.1	<10	<1	<1	<1	<5	<1	<5	<1	<1
*Blk BLANK	<0.1	<10	<1	<1	<1	<5	<1	<5	<1	<1
*Blk BLANK	<0.1	<10	<1	<1	<1	<5	<1	<5	<1	<1

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Element Method Det.Lim. Units	Sr@ MMI-M5 10 ppb	Ta@ MMI-M5 1 ppb	Tb@ MMI-M5 1 ppb	Te@ MMI-M5 10 ppb	Th@ MMI-M5 0.5 ppb	Ti@ MMI-M5 3 ppb	Ti@ MMI-M5 0.5 ppb	U@ MMI-M5 1 ppb	W@ MMI-M5 1 ppb	Y@ MMI-M5 5 ppb
M126	860	1	57	<10	222	653	<0.5	180	<1	1180
M128	300	2	8	<10	170	2240	<0.5	58	<1	274
M129	1000	1	25	<10	132	898	0.9	61	<1	471
M141	1390	<1	12	<10	71.1	87	<0.5	307	<1	381
M132	410	2	35	<10	249	2340	<0.5	49	1	799
M133	520	1	10	<10	148	773	0.6	14	<1	330
M134	290	1	8	<10	157	1130	<0.5	22	<1	183
M135	700	<1	67	<10	103	799	0.6	80	<1	1910
M136	240	1	8	<10	146	2710	<0.5	27	<1	273
M137	670	<1	26	<10	226	1500	<0.5	81	<1	583
M138	840	<1	23	<10	136	302	<0.5	414	<1	587
M143	370	1	15	<10	251	2150	1.0	35	<1	381
M144	280	<1	3	<10	80.9	1370	1.1	9	<1	90
M145	1230	<1	18	<10	94.0	163	<0.5	60	<1	510
M146	1450	<1	27	<10	94.0	21	<0.5	53	<1	639
M147	2400	<1	46	<10	33.3	6	<0.5	74	<1	1150
M148	1390	<1	24	<10	52.4	30	<0.5	126	<1	557
M149	740	2	22	<10	77.5	3250	0.6	33	<1	470
M151	450	<1	30	<10	109	1480	<0.5	69	<1	1310
M152	510	<1	6	<10	58.7	1470	<0.5	9	<1	178
M153	450	2	7	<10	104	1780	0.7	14	<1	195
M154	500	1	9	<10	74.3	776	<0.5	61	<1	382
M155	610	2	60	<10	136	2050	<0.5	47	1	1360
M156	990	<1	57	<10	121	307	<0.5	88	<1	1470
M157	410	1	4	<10	96.6	2310	<0.5	17	<1	109
M158	970	<1	9	<10	54.2	235	<0.5	44	<1	268
M159	540	1	10	<10	166	2360	<0.5	31	<1	281
M160	1250	<1	83	<10	59.6	54	<0.5	120	<1	1860
M161	890	<1	23	<10	84.8	1110	<0.5	20	<1	572
M162	700	<1	17	<10	46.0	530	<0.5	17	<1	520
M163	1120	<1	22	<10	65.7	847	<0.5	22	<1	500
M164	570	1	4	<10	196	3400	<0.5	15	<1	128
M165	1840	<1	55	<10	43.1	15	<0.5	75	<1	1170
M166	1020	<1	4	<10	64.7	2170	<0.5	8	<1	140
M167	510	2	4	<10	126	3970	<0.5	15	<1	118
M168	1040	2	67	<10	110	2610	<0.5	55	2	1710
M169	510	2	8	<10	84.2	3030	<0.5	14	<1	220
M170	1310	<1	43	<10	37.2	200	<0.5	14	<1	969
M171	350	1	4	<10	62.8	1700	<0.5	11	<1	122
M172	470	1	3	<10	98.6	2040	<0.5	13	<1	78
M173	700	1	16	<10	116	2210	<0.5	27	<1	482
M174	1790	<1	53	<10	33.7	8	<0.5	295	<1	1410
M176	320	2	5	<10	41.0	3720	0.5	6	<1	156

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Element Method Det.Lim. Units	Sr@ MMI-M5 10 ppb	Ta@ MMI-M5 1 ppb	Tb@ MMI-M5 1 ppb	Te@ MMI-M5 10 ppb	Th@ MMI-M5 0.5 ppb	Ti@ MMI-M5 3 ppb	Tl@ MMI-M5 0.5 ppb	U@ MMI-M5 1 ppb	W@ MMI-M5 1 ppb	Y@ MMI-M5 5 ppb
M177	60	1	4	<10	74.7	1810	<0.5	9	<1	99
M178	180	2	3	<10	100	3940	0.6	10	<1	78
M179	350	<1	4	<10	98.4	890	0.9	9	<1	91
M180	240	1	4	<10	178	3000	0.7	20	<1	102
M181	1240	<1	38	<10	164	503	<0.5	98	<1	864
M182	1180	1	177	<10	80.8	131	<0.5	252	2	4160
M184	1180	<1	27	<10	106	31	<0.5	163	<1	715
M185	1230	<1	2	<10	61.9	82	<0.5	7	<1	55
M187	1010	<1	15	<10	99.0	117	<0.5	643	<1	401
M193	440	1	3	<10	86.0	3280	<0.5	17	1	94
M194	330	1	11	<10	95.7	3220	0.5	26	<1	339
M189	880	<1	19	<10	175	1230	<0.5	55	<1	561
P153	2020	<1	5	<10	69.9	10	<0.5	308	<1	159
P154	1230	<1	2	<10	36.7	34	<0.5	39	<1	52
P155	1110	<1	5	<10	102	198	<0.5	58	<1	172
P156	740	<1	13	<10	145	1260	<0.5	16	<1	381
P157	1280	<1	18	<10	59.6	52	<0.5	104	<1	456
P159	2010	<1	20	<10	47.1	6	<0.5	156	<1	532
P160	550	<1	47	<10	183	177	<0.5	166	<1	1140
P161	790	<1	53	<10	57.9	84	<0.5	128	<1	1080
P162	1970	<1	55	<10	158	11	<0.5	35	<1	1560
P163	490	<1	6	<10	107	686	<0.5	30	<1	173
P164	2610	<1	14	<10	32.7	5	<0.5	54	<1	515
P165	2250	<1	82	<10	72.3	76	<0.5	133	<1	1910
P167	1060	<1	10	<10	138	57	<0.5	271	<1	325
P168	1230	<1	16	<10	97.9	34	<0.5	397	<1	566
P171	2860	<1	15	<10	39.7	<3	<0.5	298	<1	405
P172	1910	<1	16	<10	54.6	12	<0.5	234	<1	444
P175	1990	<1	78	<10	176	91	<0.5	198	<1	2190
P176	850	<1	2	<10	60.6	1010	<0.5	6	<1	64
P177	1830	<1	3	<10	22.9	<3	<0.5	180	<1	91
P181	560	<1	9	<10	137	759	<0.5	18	<1	291
P184	520	<1	5	<10	96.8	1380	0.6	23	<1	147
P185	420	2	13	<10	92.6	5650	<0.5	29	1	427
P186	650	<1	10	<10	65.9	676	<0.5	18	<1	313
P187	630	<1	1	<10	128	2450	<0.5	8	<1	39
P188	480	<1	5	<10	131	2280	<0.5	19	<1	111
P189	1360	<1	48	<10	137	778	<0.5	52	<1	1370
P190	2740	<1	39	<10	64.7	6	<0.5	187	<1	997
P191	270	1	2	<10	89.9	3110	0.6	8	<1	58
*Rep M126	860	1	60	<10	234	584	<0.5	189	<1	1200
*Rep M151	550	<1	46	<10	132	1620	<0.5	100	<1	1240
*Rep M160	1250	<1	80	<10	55.7	43	<0.5	122	<1	1770

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Element Method Det.Lim. Units	Sr@ MMI-M5 10 ppb	Ta@ MMI-M5 1 ppb	Tb@ MMI-M5 1 ppb	Te@ MMI-M5 10 ppb	Th@ MMI-M5 0.5 ppb	Ti@ MMI-M5 3 ppb	Tl@ MMI-M5 0.5 ppb	U@ MMI-M5 1 ppb	W@ MMI-M5 1 ppb	Y@ MMI-M5 5 ppb
*Rep M176	350	2	5	<10	44.7	3910	0.6	6	<1	162
*Rep P159	1710	<1	14	<10	62.9	7	<0.5	108	<1	457
*Rep P175	1900	<1	79	<10	145	50	<0.5	206	<1	2060
*Rep P190	2340	<1	31	<10	80.6	7	<0.5	169	<1	743
*Std MMISRM16	480	<1	<1	<10	21.0	7	<0.5	49	<1	9
*Std AMIS0169	80	<1	7	<10	85.0	490	1.4	29	1	142
*Std MMISRM18	1240	<1	<1	<10	18.1	13	<0.5	25	<1	19
*Bik BLANK	<10	1	<1	<10	<0.5	<3	<0.5	<1	<1	<5
*Bik BLANK	<10	1	<1	<10	<0.5	<3	<0.5	<1	<1	<5
*Bik BLANK	<10	<1	<1	<10	<0.5	<3	<0.5	<1	<1	<5

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Final : TO122411 Order: Project:LAKE

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M126	92	50	101
M128	26	90	68
M129	28	30	45
M141	28	80	73
M132	69	50	81
M133	20	170	66
M134	18	100	103
M135	85	<20	66
M136	18	150	73
M137	40	120	194
M138	65	320	152
M143	27	30	55
M144	7	20	49
M145	36	<20	25
M146	40	<20	38
M147	103	<20	27
M148	42	<20	60
M149	32	30	71
M151	26	20	144
M152	11	30	67
M153	10	30	101
M154	33	240	96
M155	164	20	76
M156	66	<20	69
M157	8	30	87
M158	18	80	42
M159	14	30	101
M160	191	<20	33
M161	48	30	53
M162	30	<20	40
M163	42	<20	50
M164	7	20	132
M165	135	<20	27
M166	7	20	61
M167	7	40	115
M168	134	30	111
M169	12	30	92
M170	81	<20	22
M171	7	<20	60
M172	4	<20	101
M173	28	20	124
M174	147	<20	23
M176	10	20	36

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Final : TO122411 Order: Project:LAKE

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Element Method Det.Lim. Units	Yb@ MMI-M5 1 ppb	Zn@ MMI-M5 20 ppb	Zr@ MMI-M5 5 ppb
M177	7	20	98
M178	7	50	68
M179	7	40	42
M180	7	40	123
M181	54	90	85
M182	447	30	59
M184	78	<20	71
M185	4	20	8
M187	43	70	83
M193	7	90	83
M194	19	30	83
M189	24	40	69
P153	11	20	33
P154	4	30	30
P155	11	40	38
P156	29	30	40
P157	44	210	76
P159	52	60	49
P160	142	180	56
P161	133	<20	46
P162	95	50	28
P163	15	120	112
P164	30	240	16
P165	164	40	35
P167	20	20	69
P168	39	60	105
P171	31	<20	30
P172	42	70	93
P175	196	30	100
P176	4	20	37
P177	7	40	19
P181	27	60	67
P184	12	70	44
P185	19	30	110
P186	22	<20	52
P187	3	30	79
P188	5	20	110
P189	75	30	48
P190	106	30	36
P191	5	30	76
*Rep M126	94	40	101
*Rep M151	37	20	168
*Rep M160	179	<20	34

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Final : TO122411 Order: Project:LAKE

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Element	Yb@	Zn@	Zr@
Method	MMI-M5	MMI-M5	MMI-M5
Det.Lim.	1	20	5
Units	ppb	ppb	ppb
*Rep M176	11	20	39
*Rep P159	33	50	50
*Rep P175	226	40	72
*Rep P190	79	50	43
*Std MMISRM16	<1	290	15
*Std AMIS0169	11	290	56
*Std MMISRM18	1	760	26
*Blk BLANK	<1	<20	<5
*Blk BLANK	<1	<20	<5
*Blk BLANK	<1	<20	<5

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1020 Cordova St. East Vancouver BC V6A 4A3 Canada

Acme Analytical Laboratories (Vancouver) Ltd.

www.acmelab.com

Client: Richards, Gordon
6410 Holly Park Drive
Delta BC V4K 4W6 Canada

Submitted By: Gordon Richards
Receiving Lab: Canada-Whitehorse
Received: July 09, 2012
Report Date: July 16, 2012
Page: 1 of 2

CERTIFICATE OF ANALYSIS

WHI12000262.1

CLIENT JOB INFORMATION

Project: LAKE
Shipment ID:
P.O. Number
Number of Samples: 16

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Table with 6 columns: Method Code, Number of Samples, Code Description, Test Wgt (g), Report Status, Lab. Rows include Air Dry, SS80, and 1F05.

SAMPLE DISPOSAL

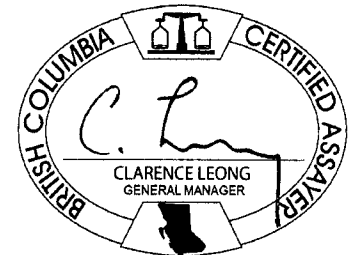
DISP-PLP Dispose of Pulp After 90 days
DISP-RJT-SOIL Immediate Disposal of Soil Reject

ADDITIONAL COMMENTS

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Richards, Gordon
6410 Holly Park Drive
Delta BC V4K 4W6
Canada

CC:



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted. "\*" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



1020 Cordova St. East Vancouver BC V6A 4A3 Canada  
 Phone (604) 253-3158 Fax (604) 253-1716

Acme Analytical Laboratories (Vancouver) Ltd.

www.acmelab.com

Client: **Richards, Gordon**  
 6410 Holly Park Drive  
 Delta BC V4K 4W6 Canada

Project: LAKE  
 Report Date: July 16, 2012

Page: 2 of 2

Part: 1 of 3

**CERTIFICATE OF ANALYSIS**

**WHI12000262.1**

Method	Analyte	Unit	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
			Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	BI	V	Ca	P
		MDL	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	%	%	
M130	Soil		1.22	45.07	11.00	31.3	1519	13.7	5.7	108	1.90	1.3	2.8	2.4	0.1	30.6	0.75	0.18	0.13	16	0.25	0.357
M139	Soil		2.86	12.43	5.12	98.9	90	7.7	4.7	714	0.84	1.4	10.7	2.6	1.0	95.2	0.52	0.39	0.09	11	2.21	0.086
M140	Soil		I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
M142	Soil		1.03	16.82	3.74	39.4	220	11.6	14.1	1430	1.08	1.9	1.3	<0.2	0.9	96.5	0.44	0.71	0.17	16	1.42	0.109
M186	Soil		1.44	18.61	7.13	28.7	529	15.2	39.8	4094	1.24	1.2	7.0	2.5	0.2	113.5	1.44	1.32	0.08	14	2.03	0.128
M188	Soil		2.58	19.56	2.39	25.9	104	13.0	8.1	543	1.04	1.0	36.8	1.4	0.8	139.6	0.23	0.48	0.07	16	3.15	0.103
P157	Soil		1.27	30.68	8.54	49.8	309	24.6	13.4	922	2.23	4.7	4.0	2.5	0.5	59.7	0.75	0.52	0.14	34	0.95	0.078
P160	Soil		36.25	79.85	11.73	53.1	515	45.3	12.6	2041	3.64	14.0	96.1	6.2	6.8	243.0	0.42	1.26	0.22	68	6.03	0.148
P166	Soil		0.65	29.01	7.04	24.5	562	15.5	4.3	95	1.25	2.3	6.2	1.2	0.7	29.0	0.42	0.23	0.09	17	0.34	0.056
P169	Soil		3.45	30.05	4.96	27.2	114	21.0	7.7	500	1.21	2.1	3.9	0.7	0.4	134.2	0.60	0.56	0.08	20	2.66	0.064
P170	Soil		7.16	46.18	5.23	33.4	174	38.2	9.7	935	1.92	4.3	5.7	1.2	1.0	92.7	0.59	0.62	0.10	33	2.00	0.065
P173	Soil		4.03	51.29	9.60	36.4	222	36.1	11.8	504	2.56	6.0	6.9	2.8	3.6	71.0	0.59	0.75	0.19	47	1.08	0.065
P174	Soil		5.88	11.82	1.59	22.8	32	6.4	2.8	324	0.29	0.2	1.9	0.6	0.3	92.6	0.30	0.39	0.03	8	2.17	0.094
P178	Soil		1.07	39.76	7.14	33.6	247	28.1	9.7	174	1.93	3.0	4.1	1.4	0.2	35.7	0.99	0.37	0.12	34	0.47	0.080
P179	Soil		2.60	9.80	2.74	31.1	117	6.3	4.8	143	0.74	1.1	1.9	0.4	0.6	63.4	0.36	0.52	0.04	9	0.98	0.105
P180	Soil		3.89	19.62	3.44	21.9	100	14.4	6.4	338	3.39	18.2	7.3	1.5	0.7	81.9	0.15	0.44	0.07	32	1.86	0.134



1020 Cordova St. East Vancouver BC V6A 4A3 Canada  
 Phone (604) 253-3158 Fax (604) 253-1716

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Client: **Richards, Gordon**  
 6410 Holly Park Drive  
 Delta BC V4K 4W6 Canada

Project: LAKE  
 Report Date: July 16, 2012

Page: 2 of 2

Part: 2 of 3

**CERTIFICATE OF ANALYSIS**

**WHI12000262.1**

Method	Analyte	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL		0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02	
M130	Soil	63.3	13.1	0.11	477.0	0.007	2	1.18	0.017	0.08	<0.1	0.6	0.08	0.06	94	0.4	0.02	1.8	0.70	<0.1	<0.02
M139	Soil	7.1	8.9	0.30	296.5	0.016	6	0.44	0.026	0.07	<0.1	1.3	0.05	0.17	112	0.8	<0.02	1.0	0.36	<0.1	0.03
M140	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
M142	Soil	10.8	11.5	0.22	403.8	0.020	5	0.75	0.020	0.07	<0.1	1.7	0.06	0.16	163	0.5	0.04	1.9	0.43	<0.1	0.02
M186	Soil	31.7	9.2	0.27	737.5	0.010	3	0.57	0.027	0.08	0.1	1.9	0.08	0.15	211	1.0	0.04	0.8	0.23	<0.1	<0.02
M188	Soil	19.3	10.9	0.33	498.9	0.023	5	0.76	0.022	0.07	<0.1	1.2	0.08	0.27	86	2.8	0.03	1.3	0.35	<0.1	0.03
P157	Soil	20.8	19.6	0.30	578.6	0.022	1	1.35	0.019	0.05	0.1	2.5	0.07	0.07	103	0.5	<0.02	4.0	0.50	<0.1	0.02
P160	Soil	56.5	28.3	0.63	1463	0.071	7	2.49	0.043	0.19	0.4	5.8	0.16	0.49	237	2.2	0.06	5.9	0.89	<0.1	0.27
P166	Soil	68.2	10.6	0.14	294.7	0.011	<1	0.92	0.007	0.05	<0.1	2.4	0.04	0.04	134	<0.1	0.02	2.0	0.30	<0.1	<0.02
P169	Soil	13.8	12.2	0.47	715.2	0.022	2	0.88	0.022	0.06	0.1	1.3	0.05	0.16	70	0.5	0.02	2.6	0.41	<0.1	0.04
P170	Soil	24.1	18.6	0.49	564.9	0.029	1	1.13	0.021	0.06	<0.1	2.2	0.06	0.14	66	0.7	0.03	3.0	0.53	<0.1	0.04
P173	Soil	28.9	25.8	0.35	784.2	0.049	1	1.67	0.016	0.11	0.2	5.2	0.08	0.06	69	0.7	<0.02	4.7	0.71	<0.1	0.07
P174	Soil	5.3	4.1	0.23	260.8	0.006	8	0.15	0.026	0.04	<0.1	0.9	<0.02	0.24	122	0.2	0.03	0.3	0.16	<0.1	0.03
P178	Soil	18.6	22.0	0.24	377.5	0.012	<1	1.16	0.011	0.04	<0.1	1.3	0.06	0.06	75	1.1	<0.02	3.4	0.61	<0.1	<0.02
P179	Soil	6.6	6.7	0.09	389.0	0.011	3	0.28	0.015	0.07	<0.1	1.8	0.02	0.13	187	0.3	<0.02	0.6	0.24	<0.1	<0.02
P180	Soil	7.7	11.9	0.19	341.5	0.015	2	0.56	0.016	0.02	0.1	1.6	0.04	0.24	86	0.7	0.02	1.4	0.29	<0.1	0.04



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 Phone (604) 253-3158 Fax (604) 253-1716

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Client: **Richards, Gordon**  
 6410 Holly Park Drive  
 Delta BC V4K 4W6 Canada

Project: LAKE  
 Report Date: July 16, 2012

Page: 2 of 2

Part: 3 of 3

**CERTIFICATE OF ANALYSIS**

**WHI12000262.1**

Method	Analyte	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb
MDL		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2
M130	Soil	0.44	7.4	0.3	<0.05	<0.1	11.75	72.8	<0.02	1	0.7	1.0	<10	<2
M139	Soil	0.48	7.6	0.7	<0.05	1.5	3.59	12.1	<0.02	1	0.3	2.9	<10	<2
M140	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
M142	Soil	0.61	6.6	0.2	<0.05	0.6	5.47	19.1	<0.02	3	0.3	3.5	<10	<2
M186	Soil	0.28	5.7	0.3	<0.05	0.2	16.35	71.8	<0.02	<1	0.5	1.3	<10	<2
M188	Soil	0.65	5.1	0.1	<0.05	1.1	8.04	22.5	<0.02	2	0.4	3.8	<10	<2
P157	Soil	0.97	7.1	0.4	<0.05	0.8	11.05	36.5	0.02	<1	0.5	6.5	<10	<2
P160	Soil	2.74	16.9	0.6	<0.05	11.7	52.29	55.4	0.03	14	1.0	16.2	33	3
P166	Soil	0.54	4.0	0.2	<0.05	0.3	31.77	104.0	<0.02	<1	0.7	3.7	<10	<2
P169	Soil	0.90	9.6	0.2	<0.05	1.5	6.69	23.4	0.02	5	0.3	4.9	<10	<2
P170	Soil	1.30	9.5	0.2	<0.05	2.1	12.90	40.6	<0.02	6	0.5	7.4	<10	<2
P173	Soil	1.82	11.2	0.5	<0.05	4.0	15.19	50.8	0.02	3	0.7	7.7	<10	<2
P174	Soil	0.12	1.5	0.2	<0.05	1.5	4.15	8.4	<0.02	1	0.1	0.5	<10	<2
P178	Soil	0.79	6.0	0.3	<0.05	0.4	10.46	34.3	<0.02	1	0.6	5.6	<10	<2
P179	Soil	0.22	4.0	<0.1	<0.05	0.6	4.42	12.4	<0.02	<1	0.1	0.7	<10	<2
P180	Soil	0.47	1.9	0.2	<0.05	1.5	6.61	12.8	<0.02	1	0.3	2.8	<10	<2





Acme Analytical Laboratories (Vancouver) Ltd.

1020 Cordova St. East Vancouver BC V6A 4A3 Canada  
 Phone (604) 253-3158 Fax (604) 253-1716

www.acmelab.com

Client: **Richards, Gordon**  
 6410 Holly Park Drive  
 Delta BC V4K 4W6 Canada

Project: LAKE  
 Report Date: July 16, 2012

Page: 1 of 1

Part: 1 of 3

**QUALITY CONTROL REPORT**

**WHI12000262.1**

Method		1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
Analyte		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
MDL		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
Pulp Duplicates																					
P173	Soil	4.03	51.29	9.60	36.4	222	36.1	11.8	504	2.56	6.0	6.9	2.8	3.6	71.0	0.59	0.75	0.19	47	1.08	0.065
REP P173	QC	4.11	51.89	9.92	36.4	215	37.7	11.8	510	2.56	6.2	7.0	2.7	3.7	70.4	0.58	0.77	0.19	46	1.07	0.063
P180	Soil	3.89	19.62	3.44	21.9	100	14.4	6.4	338	3.39	18.2	7.3	1.5	0.7	81.9	0.15	0.44	0.07	32	1.86	0.134
REP P180	QC	3.84	19.78	3.35	20.3	109	14.2	6.7	335	3.44	18.9	7.4	2.8	0.8	84.0	0.16	0.44	0.07	32	1.89	0.131
Reference Materials																					
STD DS9	Standard	12.78	103.2	122.8	293.6	1838	40.4	7.9	550	2.36	23.0	2.6	127.7	6.1	63.0	2.20	5.13	5.92	43	0.72	0.079
STD DS9 Expected		12.84	108	126	317	1830	40.3	7.6	575	2.33	25.5	2.69	118	6.38	69.6	2.4	4.94	6.32	40	0.7201	0.0819
BLK	Blank	<0.01	<0.01	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001



1020 Cordova St. East Vancouver BC V6A 4A3 Canada  
 Phone (604) 253-3158 Fax (604) 253-1716

Acme Analytical Laboratories (Vancouver) Ltd.

www.acmelab.com

Client: **Richards, Gordon**  
 6410 Holly Park Drive  
 Delta BC V4K 4W6 Canada

Project: LAKE  
 Report Date: July 16, 2012

Page: 1 of 1

Part: 2 of 3

**QUALITY CONTROL REPORT**

**WHI12000262.1**

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf	
Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02	
Pulp Duplicates																					
P173	Soil	28.9	25.8	0.35	784.2	0.049	1	1.67	0.016	0.11	0.2	5.2	0.08	0.06	69	0.7	<0.02	4.7	0.71	<0.1	0.07
REP P173	QC	29.7	25.2	0.36	786.2	0.046	<1	1.66	0.016	0.10	0.1	5.1	0.08	0.06	77	0.8	0.05	4.9	0.67	<0.1	0.06
P180	Soil	7.7	11.9	0.19	341.5	0.015	2	0.56	0.016	0.02	0.1	1.6	0.04	0.24	86	0.7	0.02	1.4	0.29	<0.1	0.04
REP P180	QC	7.8	11.2	0.18	351.8	0.015	2	0.57	0.016	0.02	<0.1	1.7	0.04	0.24	87	0.8	0.06	1.3	0.28	<0.1	0.03
Reference Materials																					
STD DS9	Standard	13.0	114.3	0.62	278.4	0.104	2	0.98	0.085	0.40	2.9	2.5	5.69	0.17	218	5.1	5.16	4.4	2.43	<0.1	0.08
STD DS9 Expected		13.3	121	0.6165	295	0.1108		0.9577	0.0853	0.395	2.89	2.5	5.3	0.1615	200	5.2	5.02	4.59	2.37	0.1	0.08
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02



Acme Analytical Laboratories (Vancouver) Ltd.  
 1020 Cordova St. East Vancouver BC V6A 4A3 Canada  
 Phone (604) 253-3158 Fax (604) 253-1716

www.acmelab.com

Client: **Richards, Gordon**  
 6410 Holly Park Drive  
 Delta BC V4K 4W6 Canada

Project: LAKE  
 Report Date: July 16, 2012

Page: 1 of 1

Part: 3 of 3

**QUALITY CONTROL REPORT**

**WHI12000262.1**

Method		1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
Analyte		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb
MDL		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10
Pulp Duplicates													
P173	Soil	1.82	11.2	0.5	<0.05	4.0	15.19	50.8	0.02	3	0.7	7.7	<10
REP P173	QC	1.83	10.7	0.5	<0.05	4.1	15.57	51.9	0.02	3	0.7	7.9	<10
P180	Soil	0.47	1.9	0.2	<0.05	1.5	6.61	12.8	<0.02	1	0.3	2.8	<10
REP P180	QC	0.45	2.0	0.2	<0.05	1.6	6.86	13.0	<0.02	2	0.3	2.9	<10
Reference Materials													
STD DS9	Standard	1.48	36.1	5.6	<0.05	1.9	5.76	23.3	2.12	61	4.9	24.2	112
STD DS9 Expected		1.33	33.8	6.4	0.004	2	5.97	25.4	2.2	61	5.4	25.2	120
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10



1020 Cordova St. East Vancouver BC V6A 4A3 Canada

Acme Analytical Laboratories (Vancouver) Ltd.

www.acmelab.com

Client: Richards, Gordon
6410 Holly Park Drive
Delta BC V4K 4W6 Canada

Submitted By: Gordon Richards
Receiving Lab: Canada-Whitehorse
Received: July 09, 2012
Report Date: July 21, 2012
Page: 1 of 2

CERTIFICATE OF ANALYSIS

WHI12000258.1

CLIENT JOB INFORMATION

Project: LAKE
Shipment ID:
P.O. Number
Number of Samples: 3

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Table with 6 columns: Method Code, Number of Samples, Code Description, Test Wgt (g), Report Status, Lab. Includes rows for R200-250 and 1DX2 methods.

SAMPLE DISPOSAL

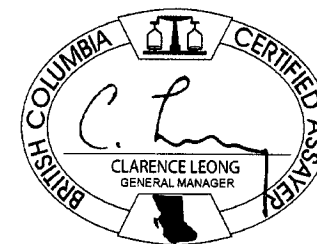
DISP-PLP Dispose of Pulp After 90 days
DISP-RJT Dispose of Reject After 90 days

ADDITIONAL COMMENTS

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Richards, Gordon
6410 Holly Park Drive
Delta BC V4K 4W6
Canada

CC:



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.

\*\*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



# Acme Labs

Acme Analytical Laboratories (Vancouver) Ltd.

1020 Cordova St. East Vancouver BC V6A 4A3 Canada

Phone (604) 253-3158 Fax (604) 253-1716

[www.acmelab.com](http://www.acmelab.com)

**Client:** Richards, Gordon  
6410 Holly Park Drive  
Delta BC V4K 4W6 Canada

**Project:** LAKE  
**Report Date:** July 21, 2012

**Page:** 2 of 2

**Part:** 1 of 2

## CERTIFICATE OF ANALYSIS

## WHI12000258.1

Method	WGHT	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	
Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	
MDL	0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	
P182	Rock	0.21	0.5	9.8	10.0	60	<0.1	5.0	10.7	600	3.32	11.3	<0.5	11.4	110	<0.1	0.2	<0.1	42	1.08	0.068
P183	Rock	0.14	1.3	83.2	10.3	97	<0.1	7.7	17.4	1209	5.44	11.4	<0.5	11.2	159	0.2	0.3	<0.1	64	1.62	0.146
M143	Rock	0.20	2.4	19.3	2.4	5	<0.1	3.3	3.5	101	0.88	6.5	12.4	0.9	6	<0.1	0.1	<0.1	5	0.04	0.004



# AcmeLabs

Acme Analytical Laboratories (Vancouver) Ltd.

1020 Cordova St. East Vancouver BC V6A 4A3 Canada

Phone (604) 253-3158 Fax (604) 253-1716

[www.acmelab.com](http://www.acmelab.com)

**Client:** Richards, Gordon  
6410 Holly Park Drive  
Delta BC V4K 4W6 Canada

**Project:** LAKE  
**Report Date:** July 21, 2012

**Page:** 2 of 2

**Part:** 2 of 2

## CERTIFICATE OF ANALYSIS

## WHI12000258.1

Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
Analyte	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te	
Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	
MDL	1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2	
P182	Rock	21	11	0.73	106	0.242	<1	1.94	0.037	0.17	0.2	<0.01	4.2	<0.1	<0.05	8	0.5	<0.2
P183	Rock	39	9	1.12	170	0.255	<1	3.04	0.033	0.22	0.2	<0.01	5.9	<0.1	<0.05	11	0.6	<0.2
M143	Rock	2	14	0.04	57	0.011	<1	0.12	0.018	0.06	0.1	<0.01	0.6	<0.1	<0.05	<1	<0.5	<0.2



Acme Analytical Laboratories (Vancouver) Ltd.  
 1020 Cordova St. East Vancouver BC V6A 4A3 Canada  
 Phone (604) 253-3158 Fax (604) 253-1716

www.acmelab.com

Client: **Richards, Gordon**  
 6410 Holly Park Drive  
 Delta BC V4K 4W6 Canada

Project: LAKE  
 Report Date: July 21, 2012

Page: 1 of 1

Part: 1 of 2

**QUALITY CONTROL REPORT**

**WHI12000258.1**

Method	WGHT	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	
Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	
MDL	0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	
Reference Materials																					
STD DS9	Standard	14.0	113.5	129.2	323	1.9	42.9	8.0	617	2.42	26.3	124.1	7.8	81	2.4	5.4	7.5	43	0.78	0.083	
STD DS9 Expected		12.84	108	126	317	1.83	40.3	7.6	575	2.33	25.5	118	6.38	69.6	2.4	4.94	6.32	40	0.7201	0.0819	
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	
Prep Wash																					
G1-WHI	Prep Blank	0.2	5.5	3.3	45	<0.1	3.7	4.4	604	2.06	4.8	<0.5	6.1	65	<0.1	0.1	<0.1	40	0.56	0.084	
G1-WHI	Prep Blank	0.1	3.5	3.4	45	<0.1	4.9	4.3	606	2.05	1.6	1.4	5.8	69	<0.1	0.1	<0.1	40	0.56	0.083	

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



# Acme Labs

Acme Analytical Laboratories (Vancouver) Ltd.

1020 Cordova St. East Vancouver BC V6A 4A3 Canada  
Phone (604) 253-3158 Fax (604) 253-1716

www.acmelab.com

**Client:** Richards, Gordon  
6410 Holly Park Drive  
Delta BC V4K 4W6 Canada

**Project:** LAKE  
**Report Date:** July 21, 2012

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Part: 2 of 2

## QUALITY CONTROL REPORT

## WHI12000253.1

Method	Analyte	Unit	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	
			La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
MDL			ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	
			1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
Reference Materials																			
STD DS9	Standard		14	126	0.66	312	0.121	3	1.00	0.085	0.42	3.1	0.23	2.6	5.7	0.18	5	5.9	4.7
STD DS9 Expected			13.3	121	0.6165	295	0.1108		0.9577	0.0853	0.395	2.89	0.2	2.5	5.3	0.1615	4.59	5.2	5.02
BLK	Blank		<1	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
Prep Wash																			
G1-WHI	Prep Blank		13	13	0.56	158	0.135	1	0.95	0.095	0.50	0.1	<0.01	2.8	0.3	<0.05	5	<0.5	<0.2
G1-WHI	Prep Blank		12	12	0.58	144	0.126	1	0.96	0.091	0.49	<0.1	<0.01	2.5	0.3	<0.05	5	<0.5	<0.2





LAKE Project. Traverses were run from camp on top of hill shown in distance.

"single" is single strong multi-element response ratio referred to in text P190 Au-Ag-Hg-Cu-Ni-U

"several" is strong multi-sample multi-element anomaly lying on gentle slope. Cu-Mo-Ag-Au-Ni-U. This is best anomaly with porphyry signature.