

QUEENSTON MINING INC

Drill Hole: AK-03-02

DIAMOND DRILL HOLE RECORD

Page: 1 of 8

Property: AMALGAMATED KIRKLAND

Northing: 9600.00

Easting: 7600.00

Elevation: 328.00

\*\*\* Dip Tests \*\*\*  
Depth Azi. Dip

\*\*\* Dip Tests \*\*\*  
Depth Azi. Dip

Date Started: March 11, 2003  
Date Completed: March 14, 2003

Collar Azimuth (Grid) .00  
Collar Dip: -50.00  
(0 Degrees Grid equals 341 degrees True)  
Hole Length: 215.00

8.0 -50.0 182.0 47.0  
92.0 50.0

Drilled by: BENOIT  
Core Size: NQ  
Material left in hole NX CASING  
Core Location: Upper Canada Site 1  
Logged by: FR Ploeger

Date Printed: 19 Apr, 2004



From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
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SUMMARY LOG

.00	2.40	OVERBURDEN								
2.40	68.68	SYENITE								
68.68	82.00	CONTACT ZONE								
82.00	83.20	FAULT ZONE								
83.20	131.80	MAFIC SYENITE								
131.80	140.73	ALTERED SYENITE CONTACT ZONE								
140.73	147.75	LAPILLI TUFF								
147.75	148.25	LARDER LAKE BREAK								
148.25	157.30	CONGLOMERATE TIMISKAMING GROUP								
157.30	165.11	SYENITE								
165.11	174.95	GREYWACKE								
174.95	181.35	MUDSTONE								
181.35	190.83	GREYWACKE								
190.83	215.00	CONGLOMERATE								



From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
.00	2.40	OVERBURDEN								
		The drill was set up in a tag alder swamp. Overburden is mud and sand.								
2.40	68.68	SYENITE								
		As with AK-03-01, the hole was collared at the north boundary of the Murdock Creek Stock in coarse grained syenite. Overall, the syenite is coarse to very coarse grained as defined by light pink feldspar crystals to 1.5cm in a groundmass of 20-30% dark green amphibole laths, black biotite and magnetite. The colour over the first 3m which are relatively fresh, is medium greyish pink, however, by 5.5m, there is a gradual change to brick orange. This results from hematization?/ alteration of the feldspars to a bright orange colour and bleaching of the mafic minerals to light grey/ dull white. The alteration appears to be pervasive and may be related to a strong fault further down the hole. The syenite is massive and homogenous with no obvious fabric development.	21633	8.43	9.27	.84	0.5	tr	.000	2
			21634	15.12	16.55	1.43	1	tr	.000	14
			21635	64.10	64.70	.60	0.5	.001	.000	26
		There is very little veining or carbonate alteration of the syenite, however, a few tiny white grains in the feldspars turn blue with ferricyanide solution. At the same time, rare late fractures fizz with acid indicating late calcite in chlorite carbonate slips. Locally, as at 8.43-9.27m and 15.12- 16.55m, the host is mildly fractured with the fractures filled by 3% and 8% dull grey quartz accompanied by 0.5 and 1% sulphides, respectively. Otherwise, mineralization runs trace. The magnetic susceptibility is high at the start, 14- 21, but decreases in the orange altered syenite to a lower range of 1- 19 with an average of about 6. Less altered sections seem to carry slightly higher values indicating, perhaps, that there is a partial conversion of primary magnetite to hematite and pyrite. Throughout the hole, there are localized chloritic fractured zones, some at low angles TCA that have caused short intervals of broken core.								
		41.00 53.00 Syenite - In this interval, the degree of hematization decreases revealing the fresher grey pink phase. As expected, there is an abrupt rise in the MS values to a plateau of about 14, reflecting the relict magnetite. Beyond, there is a slight increase in ankerite content in the matrix.								
		64.35 64.45 Fault Zone - A tight Carbonate Chlorite Fault @ 35 TCA actually forms the core of the zone. The walls comprise dull grey to dark purple grey quartz carbonate gash veins with 1% sulphides.								
		67.70 68.40 Broken Blocky Core - There is no obvious major structure over this interval except for low angle chlorite slips, that would account for the broken and ground core.								
68.68	82.00	CONTACT ZONE								
		Beginning with a few fine grained brick orange lenses, the grain size in the	21636	79.47	80.28	.81	TR	.000	.000	nil
			21637	80.28	81.55	1.27	TR	.000	.000	nil

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		<p>syenite gradually decreases to about 75.50m, at which point, in BBC, the host becomes contaminated with mafic inclusions. The leading section is bright brick orange, medium grained near the start, becoming finer grained down hole towards the mafic zone. The contact zone appears to be defined by two parameters, a primary chilled contact phase that culminates in a lower contact aureole, mafic inclusion bearing phase that may be related to the following strong break.</p> <p>MS values are generally lower in the contact zone, averaging approximately 0.14 from 72.5- 82.00m. As mentioned above, the host is weakly ankeritic to this point, but, at 77.5m, veins and matrix become calcitic as well. Within a few metres however, all carbonate alteration is calcitic. Lower in the contact zone, the host becomes well fractured/ crushed up to the fault described below.</p> <p>74.64 77.00 Broken Blocky Core - The core here is badly broken and recovered as small partly ground chunks. Footage blocks indicate that approximately 1.5m of core is unaccounted for/ lost. There is no gouge or prominent structure, however, the fracturing is fairly intense, suggesting this may be the cause for the bad ground.</p> <p>77.94 82.00 Contact Zone Broken Blocky Core - This section contains most of the mafic inclusions (77.94- 80.20m, 81.23- 81.43m) as well as a number of sections of ground/ BBC (78.20 79.00m, 79.90- 81.10m) that are conjugate structures or faults parallel to the main fault. The upper BBC/ structure occurs on a Porous Carbonate Breccia Fault @ 35 TCA followed by slivered and gougy well crushed host; the lower zone starts with a Strong Crush Chlorite Fault @ 45 TCA and ends with gouge and chips on a series of Chlorite Gouge Faults/Slips @ 20 TCA. The mafic inclusions are moderately to well fractured, medium green grey, massive, and fine to medium grained/ textured. Contacts between the inclusions range from sharp to irregular/ embayed to rafted inclusions of one in the other. All are overprinted and modified by the crushing. The lower 60cm adjacent to the main fault/ contact, comprises dirty orange, moderately fractured, fine grained syenite with a coarse splash/ streak of chalcopyrite at 81.82m.</p>	21638	81.55	82.03	.48	2	tr	.000	9
82.00	83.20	FAULT ZONE								
		<p>Leading the FAZ are a series of Gouge Mud Chlorite Faults @ 50 TCA in dark green grey mylonite over 14cm. This is followed by an 8cm wide massive pale pink calcite vein, also @ 50 TCA. The remainder of the FAZ constitutes a massive, medium textured, cataclastic/ mylonite zone in which 1-7mm size pink feldspar clasts/ grains are enclosed in a dark grey/ black fine grained matrix. The mylonite resembles a finer grained equivalent of the following mafic syenite. The zone hosts trace sulphides and is calcitic.</p>	21639	82.03	83.00	.97	TR	tr	.000	3
			21640	83.00	84.00	1.00	TR	.000	.000	nil

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
83.20	131.80	MAFIC SYENITE	21641	84.00	85.19	1.19	TR	.000	.000	nil
<p>The first metre of the mafic syenite appears to range back and forth between lenses of mylonite and fine to medium grained contact phase syenite. As mentioned above, they are similar in appearance, the mylonite having rounded pink clasts and the syenite, a variety of sizes of tabular grains; contacts between the two may be sharp or transitional. From 84.00 to 84.45m are contorted to foliated and calcite veined @ about 60 TCA. This abuts against a 10cm Mud Gouge Fault/ Zone @ 60 TCA. The massive, black, fine grained contact phase continues for another 0.65m at which point the syenite becomes medium grained. By 86.5m, the syenite has reached the coarse grained stage that it maintains throughout. It is characterized by: a coarse grain size; massive homogenous nature; medium orange/ pinkish grey colour; and moderate degree of alteration in which the amphiboles?, comprising 40% of the groundmass, have been altered to light blue grey chlorite? and calcite. Conspicuous throughout the section are patches of black biotite speckles. Fine to medium grained orange lenses to 30cm occur intermittently down hole. Excepting the biotite, the syenite bears a strong resemblance to the augite syenites found in the mines in Kirkland Lake.</p> <p>Mineralization consists of random scattered pyrite grains that amount to trace overall. As mentioned above, calcite has partly replaced the mafic grains in the groundmass and also fills the few dull white calcite streaks and veinlets that cut the host. MS values traverse a wide range between 7 and 43, averaging about 27.</p> <p>115.00 131.80 Altered Syenite - Beginning at about 115m, the syenite becomes progressively more microfractured. The massive coarse grained texture, mineralogy and pink grey colour are relatively well preserved to 124m although by this point the microfracturing has begun to fracture the orange pink feldspar crystals and groundmass. Beyond, the feldspars become hematized to a brick orange colour and their percentage/ content in the host increases to about 70%. By the end of the interval, much of the texture is obliterated by the crushing in conjunction with the fining of the grain size. Despite the increase in deformation and alteration, the sulphide content is nil to trace. At 124m, there is a transition in the carbonate alteration from calcite to ankerite with both types coexisting over about a metre. Beyond, apart from rare late pink calcite veinlets, ankerite forms the dominant carbonate. MS values decline steadily from 20 in the fresher syenite to 1, at 127m and gradually rise again to 21 near the end.</p>										
131.80	140.73	ALTERED SYENITE CONTACT ZONE	21642	132.21	133.09	.88	TR	tr	.000	14
<p>At 131.80, there is a transition to a finer grained and more deformed phase of the syenite. Locally, it reverts to a medium grain size but overall it is fine grained, grungy light to medium orange coloured, crushed/ microfractured to 137.5m and then weakly foliated @ 45- 50 TCA to the</p>										
			21643	137.27	138.10	.83	TR	tr	.000	5
			21644	138.10	139.05	.95	0.5	.002	.000	60
			21645	139.05	140.00	.95	0.5	.001	.000	31
			21646	140.00	140.73	.73	TR	.001	.000	39







From To  
(m.) (m.)

## Geology

Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
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the clasts. Mineralization is trace overall, but, a few sulphide pebbles were noted at 207.65 and 208.30m and spots of chalco in a 1cm carbonate vein at 211.63m.

202.80 202.84 Quartz-Carbonate Vein Zone - This is a minor dull grey wavy vein zone @ 55 TCA.

215.00 End of hole - The hole ends in polymictic conglomerate with the high alkalic pebble content.



QUEENSTON MINING INC

Drill Hole: AK-03-03

DIAMOND DRILL HOLE RECORD

Property: AMALGAMATED KIRKLAND  
 Northing: 9700.00  
 Easting: 8600.00  
 Elevation: 309.00

*** Dip Tests ***			*** Dip Tests ***		
Depth	Azi.	Dip	Depth	Azi.	Dip
			270.0		-49.5
			360.0		-48.0
6.5		-48.0			
90.0		-48.0			
180.0		-48.0			

Date Started: Feb 24, 2003  
 Date Completed: March 7, 2003

Collar Azimuth (Grid) .00  
 Collar Dip: -50.00  
 (0 Degrees Grid equals 341 degrees True)  
 Hole Length: 422.00

Drilled by: H & S  
 Core Size: NQ  
 Material left in hole NX CASING  
 Core Location: Upper Canada Site 1  
 Logged by: FR Ploeger

Date Printed: 19 Apr, 2004



From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
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SUMMARY LOG

.00	6.50	CASING								
6.50	7.87	DIABASE MAFIC INTRUSIVE								
7.87	9.31	ULTRAMAFIC FLOW								
9.31	40.00	FELSITE								
40.00	41.38	CARBONATED ZONE GREEN CARBONATE ZONE								
41.38	77.31	FELSITE								
77.31	87.20	GRANITE								
87.20	123.63	FELSITE								
123.63	136.84	TUFF GREYWACKE								
136.84	160.09	LAPILLI TUFF								
160.09	246.13	TUFF LAPILLI TUFF								
246.13	262.26	CARBONACEOUS SEDIMENTS								
262.26	300.44	LAPILLI TUFF CARBONACEOUS SEDIMENTS GREYWACKE								
300.44	312.09	BLONDE ALTERATION ZONE								
312.09	315.40	CONGLOMERATE CARBONATED ZONE								
315.40	332.30	TRACHYTE								
332.30	343.23	TUFF TRACHYTE								







From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
26.80	26.85	Quartz Vein Zone - This has the appearance of a Quartz Breccia Fault @ 20 TCA that is characterized by angular fragments of altered host in a chlorite rimmed dull grey quartz vein. The vein and walls are mineralized with 0.5% pyrite over 25cm.								
32.49	32.53	Fault Zone - This is another Quartz Crush Fault @ 25 TCA with weak shearing and possible minor graphite; a few spots of chalcopyrite were also noted in the zone. Moderate alteration surrounding the structure is mineralized with 0.5% pyrite.								
32.67	32.87	Felsic Dyke - The dike is surrounded on both sides by 20cm crushed chloritic zones that extend to the contacts which are themselves crushed and brecciated @ 25/ 50 TCA. In contrast with the host felsite, the FD is mottled pinkish beige coloured and moderately microfractured with 1% pyrite.								
40.00	41.38	CARBONATED ZONE GREEN CARBONATE ZONE								
		The lower 25cm of the felsite are well altered to mottled greenish beige adjacent to a sharp contact @ 35 TCA. The leading 15cm of the carbonated ultramafic appear to be tectonically/ cataclastically deformed. This is followed to 41.00m, by white quartz carbonate vein zones to 4cm wide @ 35/ 15 TCA that flank a central massive core and that constitute about 15% of the entire interval. The upper portion of the ultramafic is light to medium grey whereas below the carbonate quartz vein at 41.00m, it becomes weakly fuchsitic with a faint emerald green colour. The lower contact is partly ground flat along a 2cm caarbonate chlorite quartz vein at a high angle (70?) TCA. The matrix and veining are strongly ankeritic and contain only a few isolated pyrite grains. MS values range between 0.18 and 0.34. There are several sections around the quartz carbonate veins that are ground to a fine gravel, which when combined with measurements from the blocks, indicate a loss of 10- 20cm of core.	26415	40.00	41.00	1.00	TR	.000	.000	nil
			26416	41.00	41.38	.38	TR	tr	.000	3
41.38	77.31	FELSITE								
		At this point, there is a return to the felsitic unit similar to that described previously at 9.31m. The leading 0.5m is well fractured beside a Crush Chlorite Fault @ 6 TCA. As with the upper felsite, moderate deformation is highlighted by light olive beige/ yellow alteration that migrates out from the walls of the fractures to pervasively alter the host; quartz sweats and veins sometimes form in the areas of most intense fracturing and microfracturing. The host felsite, where relatively fresh, is massive, medium grained, and speckled medium grey with a distinctive granular/ equant grained feldspathic groundmass. Overall, it appears intermediate in composition, but there are no obvious mafic minerals that impart the darker colour; it seems to originate with the feldspathic groundmass. In the beached sections, light coloured acicular and tabular grains are visible as interstitial material. The alteration products probably represent a mix of carbonate (ankerite), sericite, quartz and	26417	41.38	42.54	1.16	TR	tr	.000	10
			26418	51.46	52.42	.96	TR	tr	.000	10
			26419	52.42	53.50	1.08	0.5	tr	.000	7
			26420	53.50	54.50	1.00	0.5	.002	.000	57
			26421	54.50	55.14	.64	1	tr	.000	12
			26422	55.14	56.00	.86	0.5	tr	.000	3
			26423	56.00	57.00	1.00	0.5	.000	.000	nil
			26424	57.00	57.53	.53	1	.000	.000	nil
			26425	57.53	58.25	.72	2	.001	.000	21
			26426	58.25	59.00	.75	1	.000	.000	nil
			26427	59.00	59.85	.85	0.5	tr	.000	10
			26428	59.85	60.72	.87	0.5	.001	.000	29
			26429	60.72	61.42	.70	TR	.000	.000	nil
			26430	61.42	62.42	1.00	TR	tr	.000	5
			26431	62.42	63.36	.94	TR	tr	.000	9





From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
105.00	105.55	Felsic Dyke - Almost imperceptible from the host, this little dike was distinguished by its slightly higher susceptibility of 0.18; it is also better mineralized with 1% pyrite. The upper contact is irregular in a splintered section of core, the trailing contact, sharp, @ 40 TCA. The dike is light grey and has a cherty appearance; it is moderately fractured with fine spidery chlorite fillings. A second similar dike that is even more difficult to distinguish occurs at 106.91- 107.20.								
108.47	111.00	Felsite - This phase of the felsite is almost glassy in texture, but at the same time, is less altered and fractured allowing the medium to dark purple grey and slightly porphyritic texture to show through. Sulphides are trace and the MS values 0.02- 0.07.								
111.36	111.39	Fault Zone - This is a narrow Quartz Chlorite Breccia Fault @ 20 TCA with a 5cm halo of 1% sulphides.								
111.85	112.95	Carbonated Ultramafics - The strong foliation defined by the wispy ankeritic veining/ streaking along the fabric planes and the medium green grey chloritic composition of the matrix, identifies this as ultramafic. The contacts are somewhat splintered but appear sharp and irregular @ about 25/ 85 TCA. The fabric is steep but slightly variable, averaging 70 TCA. MS values rise to 0.31 and sulphides range up to 0.5%. In a few places where quartz ankerite veinlets cross earlier carbonate streaks parallel with the fabric, weak green carbonate halos form.								
114.53	116.00	Carbonated Ultramafics - Resembling the unit above, this interval hosts a chlorite carbonate schist texture @ 50- 85 TCA and a fine grained central zone. The colour ranges from streaky light to medium grey; contacts are irregular but sharp @ 80/ 30 TCA. Mineralization is weak/ trace but the veining and matrix, strongly ankeritic. As with the previous inclusion, the susceptibility increases to 0.26- 0.35.								
122.68	123.63	Silicified Zone - The last metre of the felsite contains patches of quartz and strong silicification (60%) with 0.5% sulphides. The lower contact is sharp but irregular @ about 70 TCA.								
123.63	136.84	TUFF GREYWACKE								
		The leading 0.5m is characterized by strong crushing/ cataclasis @ 55- 65 TCA followed by another 0.5m of blocky core. This in turn leads to a 60% quartz flooded zone to 125.50m, at which point, the characteristics of the host rock become a little more identifiable. It is light grey, mildly to moderately foliated @ 45- 75 with an average of 65 TCA and has a flattened, fine grained granular texture containing scattered round quartz grains and a	26469	123.63	124.60	.97	0.5	.000	.000	nil
			26470	124.60	125.50	.90	TR	tr	.000	14
			26471	125.50	126.38	.88	TR	.002	.000	53
			26472	129.22	129.84	.62	TR	.001	.000	17
			26473	129.84	130.86	1.02	TR	tr	.000	5
			26474	133.58	134.00	.42	0.5	tr	.000	10

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		very fine sericitic matrix, that, along with carbonate veining, highlight the fabric. With the granular textures, the host is either an intermediate ash tuff or greywacke/ arkose. Locally, the texture becomes gritty with fine flattened lapilli to 1cm, as at 134m.								
		The matrix and veining continue strongly ankeritic. Sulphides are slightly enriched in the crushed section at the start, perhaps up to 0.5%, but trace over the remainder of the zone. The MS values fall within a range of 0.12 and 0.22.								
129.39	129.47	Silicified Zone - Not really quartz or typical silicification, this zone resembles dull grey cherty quartz with irregular/serated contacts @ 60 TCA. There are trace sulphides in the vein and only slight enrichment (<0.5%) in the wall rock.								
130.58	130.80	Felsite - This appears to be a felsic dike with sharp contacts @ 75/ 65 TCA that cut the foliation and are partly rimmed with quartz. The dike is fine grained, silicified to a mottled/ patchy dull grey and buff olive grey and mineralized with anomalous, but <0.5%, sulphides.								
133.78	133.84	Fault Zone - The FAZ is a Quartz Carbonate Shear Fault @ 45 TCA. It contains 10% streaks and grains of sulphides over about 10cm.								
136.84	160.09	LAPILLI TUFF								
		The contact with the tuff seems to fall on a 1cm carbonate quartz vein @50 TCA. The overall colour is light to medium grey with olive streaky tones. Fragmental textures appear to comprise primary flattened, losenge-shaped clasts/ lapilli to 4cm as well as tectonic/ cataclastic fragments. The primary fragments are so highly deformed and altered that they are defined by their colours which include various shades of light, medium and dark grey, white and yellow/ olive green. The matrix is strongly ankeritic and sericitic. Several thick lenses (to 1m) of tuff are interbedded with the lapilli tuff units.	26475	136.97	137.52	.55	TR	.000	.000	nil
			26476	137.52	138.33	.81	TR	.001	.000	21
			26477	138.33	138.92	.59	TR	.000	.000	nil
			26478	138.92	139.94	1.02	TR	tr	.000	12
			26479	139.94	140.95	1.01	TR	tr	.000	12
			26480	140.94	142.10	1.16	TR	tr	.000	10
			26481	146.44	147.30	.86	TR	.001	.000	19
			26482	147.30	147.93	.63	TR	tr	.000	9
			26483	147.93	148.77	.84	TR	.001	.000	27
			26484	148.77	149.77	1.00	TR	tr	.000	14
			26485	149.77	150.50	.73	TR	.001	.000	21
		Although concentrated near the start, evidence of tectonic fracturing occurs throughout the section as illustrated by the offset of earlier dull white quartz veins into a series of 'steps' as at 148.60m. Between, and immediately down hole from the two cataclastic faults (described separately below) near the start of the interval, are crenulated/ folded sections of the unit. The cataclasis, folding and extensive quartz carbonate veining decrease down hole and settle into a moderate foliation/ shear fabric by about 150.50m. To this point, tectonized dull grey to dark grey to dull white quartz/ quartz carbonate veining amounts to about 20%, whereas down hole, it decreases to < 3%. The carbonate component of the veining and matrix is strongly ankeritic throughout. Sulphide mineralization does not appear to increase significantly in the deformation corridor, but remains essentially trace with occasional anomalous sections to 0.5% over 0.5m as at								



From To  
(m.) (m.)

## Geology

Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
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141.00, 147.10 and 149.50m. The susceptibility consistently falls within a narrow range between 0.20 and 0.40, averaging about 0.30.

138.33 140.23 Fault Zone - Partially described above, this FAZ marks a strong deformation corridor in the hanging wall of the Larder Lake Break, presuming of course, that the Break is still pending. It is characterized by Cataclastic Faults @ 70- 80 TCA over the leading 0.60m and trailing 0.30m of the interval with crenulated/ folded sections between the two faults and for 0.5m down hole. The structures are defined by strong crushing and movement of early quartz carbonate veining and host rock fragments that have been healed with a green black chlorite carbonate matrix. Sulphides are slightly anomalous, occurring as grains and streaks in the fractures, but well less than 0.5%.

147.93 148.77 Quartz Vein Zone - This section contains approximately 75% well crushed quartz carbonate veining that ranges from dull beige to light grey to dark grey. The host is well sericitized but sparsely mineralized. The strong fabric cuts the core at steep angles but is also contorted locally.

160.09 246.13 TUFF LAPILLI TUFF

The contact was taken at the point where the continuous sections of lapilli texture ended and the host became more tuffaceous (finer) in overall character. It is similar to the unit described at 123.63m, fine grained, massive but mildly to moderately foliated throughout @ about 55 TCA and light grey coloured. The matrix comprises fine grains that have been flattened/ stretched in the plane of foliation except for scattered quartz grains that remain round. Again, this may indicate a sedimentary (greywacke) origin rather than volcanic. Approximately 25% of the interval is slightly coarser grained/ gritty, and resembles the lapilli tuff above. The clasts are non granitic (non pink) and are stretched into flat lozenge shapes, probably in a 6:1 ratio, usually grit size (<1cm), but generally never larger than 3- 4 cm in length. Contacts between fine and coarse (tuff and lapilli tuff) phases are gradational into one another and are not broken out.

26486	161.31	162.16	.85	TR	.001	.000	27
26487	169.70	170.90	1.20	TR	tr	.000	9
26488	182.30	183.26	.96	1	.001	.000	41
26489	195.85	196.85	1.00	TR	.001	.000	17
26490	196.85	197.85	1.00	TR	tr	.000	12
26491	242.79	243.76	.97	TR	.000	.000	nil
26492	243.76	244.39	.63	TR	.000	.000	nil
26493	244.39	245.30	.91	0.5	.000	.000	nil
26494	245.30	246.13	.83	2	tr	.000	10

Overall, the intensity of deformation decreases down hole, however, a mild foliation fabric persists throughout the interval. Staining with ferricyanide solution indicates that the matrix remains strongly ankeritic, as are the few scattered white ankerite veinlets that make up <0.5% of the core below 174m. The MS values modulate between 0.16 and 0.27, averaging about 0.22. Since there are no significant structures in the tuff unit, the sulphide content averages trace overall, but in places, becomes weakly anomalous, but <0.5%; generally, a few scattered grains are visible in most pieces of core. Any sampling done in this unit, relates to slightly anomalous pyritic sections, and not necessarily to increased veining or stronger structures which are described separately.







From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
312.09	315.40	CONGLOMERATE CARBONATED ZONE								
		The intense deformation, folding and cataclasis, continues into this unit which is interpreted as a conglomerate, at least a fragmental of some sort. Despite the structural overprint, the variety of colours and ovoid shapes of many of the fragments indicates a conglomeratic protolith; this is particularly evident over the leading 2m. Clasts are light pink, beige, salmon, yellow, apple green (fuchsitic), and grey indicating a polymictic origin, including a felsitic (syenitic/ granitic) component. They range from round (313.40m), to lensoid, to elongate, to irregular depending on competency or softness. At the start, the matrix is a mix of chlorite, carbonate and sericite, whereas, the trailing 1.5m is strongly chloritic. This lower chloritic zone is associated with an increase in deformation comprising strong folding and cataclastic brecciation of the conglomerate. It ends on 30cm wide Shear Zone @ about 70 TCA.	21515	313.00	314.00	1.00	TR	.000	.000	nil
			21516	314.00	315.00	1.00	TR	.000	.000	nil
			21517	315.00	315.55	.55	TR	tr	.000	14
		The susceptibility of the conglomerate ranges between 0.22 and 0.32; sulphides are slightly anomalous in places (315.29m, 10% over 4cm) but trace overall. Matrix and vein carbonate is strongly ankeritic.								
315.40	332.30	TRACHYTE								
		If this is true trachyte, then the hole has crossed into the Timiskaming Group, possibly with the conglomerate. The trachytic protolith was interpreted from: the fine grained texture; the general massive and homogenous nature although parts are spotted and foliated; the increase in fine dusty black magnetite grains; the lack of any sedimentary or primary fragmental textures; the overall pinkish/ maroon colour (very similar to that of incipient alteration) indicating possible hematization of some of the magnetite. The transition back and forth between foliated and massive sections may reflect pulses of tuff and flows. The main foliated/ tuffaceous section, which occurs from 323.53 to 325.24m, is streaky light pink and grey with the fabric trending @ about 70 TCA. Massive sections/ flows grade from medium/ dark grey green groundmass with pink alteration spots to finer textured, weakly foliated/ streaky/ mottled medium maroon/ pink grey zones.	21518	315.55	316.06	.51	5	.001	.000	19
			21519	316.06	317.00	.94	TR	.000	.000	nil
			21520	317.00	318.22	1.22	TR	.000	.000	nil
			21521	318.22	319.30	1.08	TR	tr	.000	5
			21522	319.30	320.50	1.20	TR	.000	.000	nil
			21523	320.50	321.80	1.30	TR	.000	.000	nil
			21524	321.80	323.00	1.20	TR	.000	.000	nil
			21525	323.00	324.27	1.27	TR	.000	.000	nil
			21526	324.27	324.74	.47	5	.000	.000	nil
			21527	324.74	325.24	.50	0.5	tr	.000	14
			21528	325.24	326.30	1.06	TR	.000	.000	nil
			21529	326.30	327.18	.88	0.5	.000	.000	nil
			21530	327.18	327.87	.69	3	.000	.000	nil
			21531	327.87	328.90	1.03	0.5	tr	.000	5
			21532	328.90	329.63	.73	10	tr	.000	7
		The host has been pervasively carbonatized by strong ankeritic alteration. Dull grey and pink spots in the trachytes as well as streaks and veinlets are also ankeritic. The relationship between the magnetic susceptibility and the pyrite content is interesting. The areas with MS values above about 8.00 contain abundant fine dusty black magnetite whereas those below 2.00 contain almost no visible magnetite but proportionately higher fine and streaky pyrite; coincidentally, the pinkish colouration disappears. In the intermediate MS range (2.00-8.00), magnetite and pyrite coexist. Therefore, it seems likely that the magnetite and hematite are converted/ sulphidized to pyrite. In these areas, it is impossible to estimate sulphide percentages without a lens since the pyrite is generally very fine. Low MS values occur at: 315.55- 316.06m with 5% py; 324.27- 324.74m with 5% py and cp; and, 327.18- 330.85m with a halo of 0.5- 3% and a 75cm core of 10% py. The	21533	329.63	330.25	.62	1	.000	.000	nil
			21534	330.25	330.85	.60	2	.000	.000	nil
			21535	330.85	332.00	1.15	TR	.000	.000	nil
			21536	332.00	332.95	.95	2	.000	.000	nil



From To  
(m.) (m.)

## Geology

Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
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Through the natural leading contact, the host becomes a massive, fine grained, granular moderately altered trachyte tuff/ tuffwacke. The zone begins with a dirty mottled, medium to light grey and greyish pink mix, becoming dark grey at 354.25m immediately following a 10cm thick massive trachyte lense (@ 65 TCA), and lightens up over the lower 5m. This trailing section, from 357.26- 361.31m, exhibits sharp natural contacts @ 60/ 85 TCA and weak internal bedding defined by faint trains of black magnetite grains @ 65 TCA. It is light grey pink, granular, massive but somewhat porous textured, fine grained with an embayed internal contact at 360.95m indicating tops down hole. The zone began with a weak foliation fabric @ about 70 TCA, but this disappeared by 355.50 and, therefore, can be considered as the end of deformation.

The interval remains poorly mineralized with nil to trace sulphides. The MS values fluctuate between 12.0 and 24.0 with an average of about 20.0. Carbonate veining amounts to about 0.5% of the unit, concentrated mainly over the upper 0.5m. The matrix is pervasively carbonated with localized sections containing faint gash/ tear structures that are carbonate filled. The carbonate in both the vein and matrix is ankerite, however, immediately below the the lower contact, the alteration and veining become calcitic.

## 361.30 409.78 GREYWACKE TUFF

From this point on, the rock is fresh to weakly altered with a slight brown tinge to 371.80m in an otherwise medium to dark green grey coloured host. The lack of jasper grains would categorize the protolith as a tuff rather than a sediment but the 'look' is that of a greywacke. It is moderately well bedded @ 60 TCA as defined by interlayered fine and very fine grained banding and minor gritty lenses. Local ovoid beaded zones may represent original gritty/ pebbly layers that have been enhanced by pink calcitic alteration, as at 366.10m, however, another section at 367.65m contains distinct rounded pebbles of varying compositions. These basic features continue to the end of the hole.

As mentioned above, the mild alteration ends at 371.80m and the rock stays relatively fresh for the remainder of the hole. It does contain about 2% randomly oriented, late white and pink calcite veinlets and scattered narrow patches of more pervasive calcification. Sulphides are nil to trace throughout. The susceptibility undulates within a range of 12.0 to 44.0, the higher values reflecting increases in the detrital magnetite content as trains and bands along bedding planes.

398.32 408.70 Mudstone - This section is very fine grained, approaching aphanitic, and massive with only rare indications of bedding. At the leading contact, thin scalloped mudstone lenses are interbedded over 8cm, @ steep angles TCA, with the slightly coarser grained tuff from above. The trailing contact is sharp on a chlorite slip @ 65 TCA.

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
409.78	422.00	TRACHYTE								
<p>Rather than a single flow, this is a flow sequence which includes a number of mixed facies including: massive flows with minor flow banding (421.80m); rubbly flow tongues/ slivers (411.57 &amp; 421.10m); flow top (414.10m) and interflow breccias, some resembling pillow breccias (419.88- 420.55m); and tuffaceous beds (410.83 411.78m &amp; 419.4 419.86m). The flows are very fine grained, medium to dark greenish grey, and mafic in appearance, strongly resembling typical pillowed basalt sequences. Because they are situated within the Timiskaming Group, they were classed as mafic trachytes.</p> <p>Overall, they are moderately calcitic as are 0.5% wispy light pink carbonate patches and veinlets. The susceptibility readings seem to reflect the changes in facies. They indicate that the two major tuffaceous lenses fall within the range (23.0- 27.0) of the tuffs higher up in the hole, whereas the upper flows average approximately 13 within a range of 4.00- 22.0. Below 419.86m, the flows appear to be more magnetic with the MS values climbing to a higher range of 26.0 to 30.0. The sulphide content of the trachytic flow unit is trace.</p> <p>422.00            End of hole - The hole ends in the mafic trachyte flows.</p>										





















From To  
(m.) (m.)

## Geology

Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
21690	227.00	228.00	1.00	TR	tr	.000	12
21691	228.00	228.77	.77	TR	.001	.000	44

The diabase intrudes the wacke with a sharp contact @ 65 TCA, the leading 30cm of which are slightly pinkish tinged; for about a metre below the contact, the diabase is chilled/ fine grained. It then becomes fine to medium grained, massive felted textured, and dark greyish green coloured. The magnetic susceptibility climbs gradually from 0.36 at the contact to 25.2 at 189.0 m. Magnetic susceptibilities, however, are quite erratic across the dyke, ranging from 0.34 to 30.3. Surprisingly, the central section from 191.5 to 205.2m is weakly magnetic with no readings greater than 1.00 versus 0.36 to 25.2 above this section, and, 0.54 to 30.3 below the central zone to the lower contact. The central section exhibits more of a granular texture rather than the typical diabasic features. The mineralogy of the medium grained host consists of feldspar, chlorite, hornblende and amphibole. Cutting the diabase are wispy to streaky limey to yellow green sericite/ epidote veinlets and fracture fillings which can locally grade into a network of fractures and pervasive alteration with epidote. The dyke is also variably fractured with chlorite (+/- amphibole), calcite, hematite and serpentine.

Calcite fracturing in the system seems to occur in two sets at 20 to 30 degrees, and, 45 to 60 degrees. The 45 to 60 degree fractures tend to be wider and later than the 20 to 30 degrees stringers. Pervasive calcite alteration accompanies some areas with increased calcite fracturing, plus both contact zones are more strongly and pervasively calcitic from 184.31 to 185.62, and, 213.75 to 228.77. The lower, pervasively calcitic zone is also the more strongly fractured with serpentine part of the system. The rocks vary from dark grey green to dark green in colour with variable reddish to orange and limey casts. Fracturing to veining with calcite is less than 5%. Pyrite mineralization is weak to absent.

The lower contact of the diabase is faulted with 10 cms of gouge at the lower contact from 228.67 to 228.77 at 59/56 degrees. The first trace of mud is noted in the system at 227.18 amongst blocky to broken core to 227.30 - trace of mud at 40 degrees, with one mud slip at 227.64 at 42 degrees, and, blocky to broken core with traces of mud from 228.10 to the main gouge at 228.67 - orientations of mud in the section of broken core are unclear. There is also accessory fracturing with 10% calcite at the lower contact after 226.65 feet. The faulted lower contact is coded as:.

228.67 228.77 Fault gouge - gouge at 59/56 degrees.

## 228.77 262.97 TRACHYTE MAFIC SYENITE

Contact into a complex array of what appear to be trachytic flows. The flows range from very fine grained to quite coarsely porphyritic with tabular feldspar and altered feldspars to 8 mms in size - ergo the inclusion of mafic syenite. The package varies from dull reddish grey and green to brick red and orange red in colour with variable bleaching to beige and yellowish tones related to ankerite and sericite alteration. Chlorite is also pervasive in the system such that the matrix component is often very dark green in colour. In general, the rocks are moderate to strongly magnetic but

21692	228.77	229.73	.96	TR	.001	.000	22
21693	229.73	231.00	1.27	NIL	.000	.000	nil
21694	231.00	232.00	1.00	NIL	.000	.000	nil
21695	232.00	233.00	1.00	NIL	tr	.000	7
21696	233.00	234.00	1.00	NIL	.000	.000	nil
21697	234.00	235.00	1.00	NIL	tr	.000	14
21698	235.00	235.73	.73	NIL	tr	.000	5
21699	235.73	236.50	.77	NIL	tr	.000	2



From To  
(m.) (m.)

## Geology

Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
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cms of the lower contact (0.67 to 1.02) - the next lowest reading in the system is 7.06. The rocks vary from dark greenish red to dull orange red in colour and are unmineralized. The lower contact is sharp at 70 degrees with accessory hematite.

239.09 249.49 Trachyte Mafic Syenite - contact into a coarser grained corridor with tabular feldspathic +/- pseudoleucite and nepheline blebs and spots to 8 mms in size. Three finer grained sections are potential flow margin material at 240.04-240.26, finer grained, chloritic and weakly brecciated at 54/62 degrees; 240.62-240.77 at 55/59 degrees, and; 245.05-245.25 at 74/62 - lower contact irregular. The flow margins are fractured to weakly brecciated and are the more weakly magnetic parts of the system with susceptibilities from 1.11 to 7.72 in the two lower, margins - the upper margin zone is more indefinite due to the chlorite alteration - susceptibilities of 10.1 to 27.7. In the balance of the system, the MS values range between 8.22 to 24.9. The rock is dark reddish green to dark reddish orange in colour and is unmineralized. The lower contact is sharp with veining at 34 degrees.

249.49 250.05 Flow top fault gouge - contact into a short section that is also tentatively identified as a flow margin with the addition of traces of mud amongst broken core from 249.50 to 249.60. The rocks are fractured to weakly brecciated with about 20% quartz-ankerite veining at 20 to 55 degrees to the core axis. The section is unmineralized. Susceptibilities are lower here from 0.32 to 2.24. The section contains nepheline to pseudoleucite and feldspathic spots to more tabular blebs in a fine grained more chloritic dark grey green to almost black matrix. The lower contact is very irregular averaging 56 degrees.

250.05 257.41 Trachyte Mafic Syenite - return to the more coarsely textured rocks although the coarse tabular to spotted textures are not as consistently well developed as in the prior unit - particularly in the interval 251.73 to 254.22 where outlines are more diffuse. Local foliated to bleached and brecciated zones are more tenuously representative of flow margin material at 251.30-251.35 at 55 degrees; 251.72-251.80 at 72/81 degrees, and; 253.79-253.83 at 60/57 degrees (with accessory sericite and traces of pyrite). There is also some local bleaching associated with veining at 252.28 - 7 cms at 55 degrees, and, 252.62 - 7 cms at 62 degrees. Magnetic susceptibilities are lower in these intervals from 1.88 to 10.0 versus 12.7 to 29.3 in the balance of the system. The lower contact is irregular and partly broken at 34 degrees.

257.41 262.97 Trachyte - the lower contact unit marks a return to finer

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		grained trachyte with only local, ill defined, diffuse spots of pseudoleucite +/- feldspathic material. The rocks vary from dull reddish grey to pale and dull orange red to yellowish and beige toned in the presence of accessory sericite and ankerite. The upper contact area, to 258.02, is yellow green to dull grey in colour from accessory sericite. The core is also dull yellow green in colour with accessory sericite from 259.28 to 259.33 at 74/80 degrees surrounding 3 cms of broken core with a trace of grit to mud. The rocks are locally crudely brecciated in appearance with a better defined flow breccia from 261.94 to 262.10 with irregular contacts at 69/74 degees - numerous angular to subrounded trachytic fragments in a darker greyish to orangish matrix. The core is spotted with chlorite +/- hematite and is quite well fractured with hematite stringers to gashes. Veining is weak and threadlike at variable angles to the core axis. This unit is also weakly mineralized with trace amounts of disseminated pyrite. Magnetic susceptibilities are much lower from 0.22 to 11.0 - most less than 1.0. The lower contact is sharp into more chloritic rocks at 42 degrees.								
262.97	270.16	TUFF TRACHYTE								
		Contact into a tuffaceous segment. Like the prior zone from 100.34 to to 121.00, there is little to distinguish this unit. For the most part, the rocks are dark grey green to dark green in colour with a variable reddish wash to staining over a fine to medium grained, granular textured matrix. There are isolated angular, orangish alteration blebs and rarer chloritic blebs to 5 mms in size that may be construed as fragmants but a definite fragmental nature is not clear until the lower contact zone from 269.8 to 270.16 - upper contact sharp at 39 degrees, lower contact subtle into trachyte at 49 degrees. This lower fragmental zone has a mix of fragment types and sizes to 5 cms in size.	21716	262.97	263.68	.71	NIL	.001	.000	36
			21717	263.68	264.05	.37	2-3	.135	.000	4646
			21718	264.05	265.00	.95	NIL	.003	.000	99
			21719	265.00	266.00	1.00	NIL	.001	.000	34
			21720	266.00	267.00	1.00	NIL	.027	.000	915
			21721	267.00	268.00	1.00	NIL	.001	.000	27
			21722	268.00	269.00	1.00	NIL	.001	.000	33
			21723	269.00	270.16	1.16	NIL	.003	.000	87
		Within this tuffaceous package there is one bleached and sericitic section from 263.68 to 264.05 at 75/60 degrees. It is dull yellow grey green in colour and is largely promoted by a series of thin quartz- ankerite veins at 60 to 70 degrees to the core axis (about 15% here). This sericitic segment is also finely mineralized with 2-3% disseminated pyrite - elsewhere in the tuff, pyrite is essentially absent. The sericitic section is also a mag low with susceptibilities of 0.25 to 0.40 versus 4.09 to 19.8 in the balance of the tuffs. Outside of the sericitic zone, the rocks are very poorly fractured to veined with ankerite +/- quartz. As noted above, the lower contact is subtle into trachyte at 49 degrees.								
270.16	270.33	TRACHYTE								
		Subtle contact into trachyte, that is more fully described after the dyke that follows just below the upper contact.	21724	270.16	271.00	.84	TR	.048	.000	1646

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
270.33	273.24	PORPHYRITIC SYENITE								
		Contact into a short dyke of porphyritic syenite with irregular contacts at 79/75 degrees. The dyke is dull to bright orange red in colour and contains tabular to subrounded phenocrysts of plagioclase to 6 mms in size in a very fine grained groundmass. The matrix component is mottled to fractured with chlorite and hematite, and, there are scattered fine ankerite +/- quartz fractures at 20 to 30 degrees to the core axis. Two quartz veins near the base of the system carry pink calcite - one of these at 272.95 (a 1 cm vein at 28 degrees) contains a coarse splash of chalcopyrite. Mineralization elsewhere in the system consists of scattered blebs to coarser aggregates of pyrite with a moderate fracture control. Magnetic susceptibilities range from 0.18 to 0.57.	21725	271.00	272.00	1.00	TR	.002	.000	57
			21726	272.00	273.24	1.24	TR	.004	.000	151
273.24	277.26	TRACHYTE								
		Return to the trachytic unit noted just above the contact with the syenite dyke. This unit and the preceding tuff member appear to initiate an ongoing sequence on intercalated tuffs and trachytic flows over a broad area. The trachyte is fine grained and varies from dull grey beige to grey green in colour with orange red parts and variable orange red staining. The section is hard and ankeritic with local more beige tones in the presence of accessory ankerite and bleaching. There are weakly brecciated parts to the trachyte that may represent flow margin material but they are ill defined - highlighted by orange red staining. Magnetic susceptibilities are usually lower in these brecciated and orange stained parts with a range of readings from 0.25 to 23.0. The trachyte looks like a terrific host to mineralization but it is only weakly fractured with shallow angle ankerite and quartz-ankerite fractures and is sparsely mineralized with trace only blebs of pyrite. The lower contact is streaky altered with sericite at a syenite dyke contact at 47 degrees. Just above the lower contact, there is a trace of mud to grit amongst 5 cms of broken core at 54 (??) degrees.	21727	273.24	274.00	.76	TR	.001	.000	46
			21728	274.00	275.00	1.00	TR	.001	.000	34
			21729	275.00	276.00	1.00	TR	.001	.000	38
			21730	276.00	276.70	.70	NIL	.002	.000	67
			21731	276.70	277.26	.56	TR	.002	.000	53
277.26	279.73	SYENITE								
		Contact into a short dyke of dull to bright orange red, very fine grained syenite. Due to the grain size, the dyke is fairly innocuous in appearance. It is finely fractured with ankerite with very few stringers to 5 mms in size, most of which are at 55 to 65 degrees. The dyke is weakly fractured with chlorite, hematite and more rarely sericite. Magnetic susceptibilities are low from 0.10 to 0.34. Pyrite mineralization is weak with trace only fine point to coarser blebs and aggregates that commonly have a fracture control. The upper contact is clean and sharp at 47 degrees, the lower contact is along a 1 cm quartz vein with pinkish calcite at 64 degrees.	21732	277.26	278.00	.74	TR	.008	.000	274
			21733	278.00	279.00	1.00	TR	.003	.000	101
			21734	279.00	279.73	.73	TR	.006	.000	218
279.73	281.82	TRACHYTE								
		Return to the trachytic flow member noted above the syenite dyke. Just above the syenite dyke, the trachyte is streaky altered with sericite. That streaky, dull yellow alteration persists into the lower extremities of the trachyte flow in addition to pale to dull beige grey more massive trachyte and patchy to blotchy orange red staining. The largest orange red section	21735	279.73	281.00	1.27	TR-1	.010	.000	353
			21736	281.00	281.82	.82	NIL	.001	.000	50

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
<p>extends from 280.50 to 281.0 at 62/74 degrees upper contact with a trace of grit on a slip. There is also some potential grit amongst broken core from 281.54 to 281.59 - orientation unclear. A trace of mud is noted at the upper contact at the base of the quartz-calcite vein at 64 degrees, and, there is a 2 mm mud seam at 280.91 at 59 degrees. At both of these locales there is some associated pinkish calcite in the core while the balance of the system is weakly fractured to pervasively altered with ankerite. Magnetic susceptibilities in the system are low from 0.12 to 0.39. The trachyte is variably fractured with hematite and is slightly better mineralized with up to 1-2% disseminated to fracture controlled pyrite. The lower contact is subtle and partly bleached at 58 degrees.</p>										
281.82	296.58	TRACHYTE TUFF								
<p>Contact into another of the innocuous zones that are tentatively identified as tuff. The rocks are very fine grained to finely granular textured and range from dark green to dark grey green with variable reddish washes. Aside from the contact zones, fragments are very poorly defined but orangish to dark green, angular to subrounded, spots to blebs are found across the system - commonly with diffuse margins. Coarser fragments of varying types, shapes and sizes to 5 cms are noted at the start of this corridor from 281.82 to 284.01 (lower contact irregular averaging 71 degrees), and; at the lower contact, from 295.68 to 296.58 - coarser fragments to 295.91 with mostly fine fragments 2 to 3 mms in size from there to the base. Between 285.64 and 285.98, the trachyte is also spotted with chlorite, hematite and pseudoleucite - section at 79/49 degrees, upper contact with veining.</p>										
<p>Both contact zones of the tuff corridor are ankeritic while the central section is weakly to pervasively fractured to altered with calcite. The first calcite appears in the system at 282.72 m with patchy, more pervasive alteration after 283.25. Ankerite reenters the system along a silicified and brecciated corridor from 293.57 to 294.53 with irregular contacts at 52/37 degrees. This zone is very fine grained and varies from dull beige to dull orange red and dark reddish grey green in colour. It contains scattered metacrysts (??) of feldspar and is mineralized with an average of 1-2% pyrite blebs and aggregates. The corridor is moderately fractured with 10 to 15% irregular quartz-ankerite stringers as well as some fine fractures with chlorite and hematite. In addition, magnetic susceptibilities are much lower with readings from 0.29 to 0.63 versus 2.49 to 21.2 in the balance of the system. Outside of the silicified and brecciated corridor, the tuff is weakly fractured to veined and sparsely mineralized. The corridor is coded as:.</p>										
<p>293.57 294.53 Silicified brecciated.</p>										
<p>The lower contact into trachyte is subtle at 76 degrees.</p>										
296.58	302.72	TRACHYTE SYENITE								
<p>Contact into a trachyte unit that is cut by two dykes of syenite from 296.98-297.92 at 44 degrees, and, 299.86-302.05 at 33/45 degrees. The</p>										
			21743	296.58	296.98	.40	TR	.030	.000	1029
			21744	296.98	297.92	.94	TR	.001	.000	39



From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		Return to trachytic flows. Just inside the contact of this trachyte segment (from 307.97 to 309.28), the flows are highly fractured to brecciated, altered, silica flooded and mineralized with about 30% irregular, porcelainous ankerite stringers at very shallow angles to the core axis (generally 0 to 30 degrees). This altered and veined section is followed by streaky sericite altered and foliated trachyte up to an irregular dyke of fine grained, orange red syenite from 309.46 to 309.72 at 39/82 degrees. Beneath the narrow dyke of syenite, the trachyte varies from dull brownish grey to grey green in colour with beige to yellowish alteration healing around fine fractures at generally shallow angles to the core axis. There appears to be some intermixing of tuffaceous material in this lower segment particularly from 310.81 to 311.12 at 67/47 degrees where there are some fine granular tuffs and coarser pyroclastic material with orange staining. There is also an irregular, 4 cm, porcelainous ankerite vein threading the core axis from 311.55 to 311.76 m accompanied by orange red staining, and, a more reddish toned trachyte segment from 310.06 to 310.22 with irregular contacts averaging 48/62 degrees.	21752	307.90	308.50	.60	5-7	.040	.000	1359
			21753	308.50	309.28	.78	5-7	.048	.000	1664
			21754	309.28	309.72	.44	3-5	.060	.000	2073
			21755	309.72	310.50	.78	TR	.002	.000	58
			21756	310.50	311.50	1.00	TR	.001	.000	48
			21757	311.50	312.00	.50	1-2	.006	.000	190
			21758	312.00	312.50	.50	TR	.002	.000	51
		The upper, brecciated, silica flooded et al section appears to cue around a narrow, 3 mm, alteration healed fault breccia threading the core axis from 308.08 to 308.92. The accompanying porcelainous ankerite veining brecciates the trachyte with strong orange red staining in addition to beige to yellowish tones from ankerite and sericite. The veining carries fine flashes of galena (??) locally with intergrown pyrite and accessory disseminated pyrite blebs to aggregates in the wallrock such that this overall altered section averages 5-7% sulphides. Magnetic susceptibilities are low in the altered zone from 0.48 to 0.80, versus 0.27 to 0.67 in the streaky sericite section, 0.31 to 0.41 in the syenite, and 0.56 to 17.9 in the balance of the system (2.93 to 17.9 in the tuffaceous segment). The lower porcelainous vein is quartz-ankerite. It similarly contains flashes of galena (grey to black streak) but pyrite is only developed in the adjacent orange red stained wallrock. Outside of the two veined sections, the sericite altered section, followed by the syenite, hosts 3-5% disseminated pyrite and pyrite aggregates, while the balance of the zone is very weakly mineralized with only up to trace to 1% pyrite over a few cms. Also outside of the veined sections, veining is weak although fractures with hematite +/- ankerite are common throughout. The lower contact is partly brecciated and orangish stained at 43 degrees.								
312.50	328.47	TRACHYTE TUFF								
		Return to another of the tuffaceous members characterized by a granular texture and assorted fine fragments - fragments are better defined in in this corridor. Intervals with coarser fragments to 3 cms in size persist - contacts range from gradational to sharp. Certain of the intervals with coarse fragments and sharp contacts look like rubbly flow top style material in the trachytes the best evidence of this phenomenon is where there are some potential intercalated units of trachyte between 318.43 and 319.37 at 63/47 degrees, with 3.5 cms having coarser fragments and fine tuff at 318.82 at 72 degrees, and, 318.93 to 319.00 with coarser fragments and orange red staining at 33/45 degrees. Two further units of trachyte are noted near the	21759	312.50	313.50	1.00	TR	.002	.000	82
			21760	318.43	319.37	.94	NIL	.002	.000	60
			21761	327.00	328.00	1.00	TR	.001	.000	29
			21762	328.00	328.47	.47	NIL	.001	.000	31





From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		FRP- This is typical Kirkland Lake type syenite porphyry with weak mm scale feldspar phenos in a fine grained matrix that contains mafic inclusions. Prior to the structure noted by Dale above, there are 2 veins/ faults at 340.66m- a 2cm quartz carbonate chlorite vein @ 65 TCA and 341.36m- a carbonate chlorite slip @ 55 TCA. Both have mild alteration halos with anomalous fine sulphides.								
		351.28 352.93 Trachyte Tuff - the tuffaceous package between the two dykes. The tuff is dark green in colour with reddish tones and scattered coarse fragments to 3 cms in size as well as blotchy orange red staining and patches of syenite. There is up to 2-3% pyrite blebs and aggregates in this section over a few cms. The upper contact is irregular and partly silicified at 83 degrees - lower contact with a 7 mm quartz vein at 40 degrees.								
		The lower dyke is bleached, foliated and sericitic over 8 cms at 35 to 40 degrees adjacent to the tuff section. This dyke continues to have scattered irregular inclusions to a few cms in size but it also contains much larger inclusions to rafts up to a meter in size. Most of the larger inclusions appear to be conglomeratic with diffuse to partly absorbed contacts but some coarse tuffaceous material also appears to be present. There is one unit from 367.27 to 369.53, with sharp but irregular contacts at 38/50 degrees, that may represent a dyke of mafic syenite cutting the syenite dyke. It is a dull to earthy brick red colour with scattered fragments to 2 cms in size and rarer coarse fragments to 8 cms in size in a fine grained matrix with scattered feldspar metacrysts and blocky to subrounded and locally more acicular to wedge shaped blebs of chlorite, potentially after a variety of mafic minerals. Magnetic susceptibilities of this section vary from 5.16 to 11.1. Its contacts are sharp and partly bleached with an inclusion of orange red syenite at the upper contact suggesting the mafic syenite is younger (??) - the relationship is not entirely clear. The unit is weakly fractured and unmineralized.								
		Across this lower dyke, the core is more variably altered with ankerite resulting in more beige toned to earthy sections. There is also a little accessory quartz-ankerite veining in the system from 372.92 to 373.78 - 5-10% veining to 2 cms in size at an average of 65 to 70 degrees, but unmineralized. Wider inclusions persist to the lower contact which is sharp but irregular at 41 degrees. There is also a narrow, dull grey green, siliceous seam at 360.80, (1.7 cms at 25 degrees) that looks like an alteration healed fault (??) - trace pyrite.								
		FRP- Above the zone identified above, there is a 1cm Carbonate Chlorite Fault @ 65 TCA characterized by a 1cm wafer accompanied by crushing and greyish alteration with trace sulphides down hole to the veining.								
376.54	382.38	CONGLOMERATE Contact into the first in a series of conglomerate units beneath the zone of	21777	376.54	377.50	.96	NIL	tr	.000	2

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		trachyte and syenite. The conglomerate looks only slightly different than the coarser tuff fractions but the matrix component, when visible, is more granular to gritty/sandy in appearance. The conglomerate is essentially a chaotic jumble of coarse and, to a lesser extent, fine polymict clasts. Cherty, porphyry, syenite, mafic and trachyte (??) pebbles in the system are found to more than 5 cms in size with subrounded to angular shapes. The rocks are poorly veined to fractured and are very sparsely to unmineralized. The central part of of the conglomerate from 377.4 to 381.60 is weakly fractured to locally more pervasively altered with calcite, while the contact zones are ankeritic - both contacts are with syenite. Magnetic susceptibilities range from 0.85 to 17.9 and are erratic. The matrix component is dull to dark grey green in colour with weak reddish castes. The lower contact is sharp at 58 degrees.	21778	381.50	382.38	.88	NIL	.035	.000	1200
382.38	389.12	PORPHYRITIC SYENITE								
		Contact into a dyke of relatively coarse grained syenite composed of numerous tabular to subrounded phenocrysts of feldspar to 5 mms in size along with some more hexagonal occurrences of nepheline in a very fine grained dull orange red to wine red groundmass that is flecked to speckled with chlorite that appears to be locally pseudomorphic after hornblende and amphibole. Several of the feldspar phenocrysts are zoned to twinned and variably orange stained. The dyke is weakly reactive to the presence of ankerite but there are some fine fractures with calcite from the top of the unit with slightly more pervasive alteration noted after 388 m. Calcite fractures are dominantly at 40 to 50 degrees to the core axis. The dyke is sparsely mineralized with trace only disseminated pyrite. Magnetic susceptibilities range from 0.93 to 1.86 within 50 cms of the upper contact and from 11.9 to 29.5 over the rest of the dyke. Fragments/inclusions of country rock are minimal in this dyke. The lower contact is sharp but irregular, averaging 44 degrees.	21779	382.38	383.00	.62	TR	.006	.000	189
			21780	388.00	389.12	1.12	NIL	.001	.000	48
389.12	397.87	CONGLOMERATE								
		Return to a conglomerate sequence. The conglomerate designation in this corridor is much better defined with coarse clasts up to 15 cms in size in a granular to gritty / sandy matrix that is locally more strongly mottled with chlorite +/- calcite. As before, the conglomerate is a chaotic mix of pebbles of all types and sizes with the coarse fragments being most noteworthy. Rarer fragments noted in this interval include a 3.5 cm by 2 cm iron formation fragment with bright orange red jasper near the top of the system (susceptibility of 113); an unusual, 7.5 cm spinifex textured, ultramafic fragment at the lower contact, and a 2 cm, triangular fragment of black chert with splashes of chalcopyrite at 394.04 m. The matrix component is dark grey green to dark green in colour with variable reddish castes. The conglomerate and its fragments are weakly fractured to locally pervasively altered with calcite. Other than mineralized fragments, pyrite mineralization in the system is generally weak. Magnetic susceptibilities range from 1.02 to 44.9 (plus the 113 in the iron formation fragment) - readings are erratic. The lower contact is sharp and runs along the core axis for roughly 30 cms - ultimate contact at 12 degrees.	21781	389.12	390.00	.88	NIL	.000	.000	nil
			33857	392.00	393.06	1.06	NIL	tr	.000	5
			53482	393.06	394.00	.94	TR	.022	.000	768
			21782	394.00	394.80	.80	TR-1	.084	.000	2903
			53483	394.80	395.70	.90	TR	.000	.000	nil
			21783	397.00	397.87	.87	NIL	.002	.000	65



From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		unmineralized. Magnetic susceptibilities range from 6.82 to 27.3. The lower contact is sharp at 57 degrees.								
408.86	428.72	MAFIC SYENITE PORPHYRITIC SYENITE								
		Contact into an almost continuous section of mafic syenite, interrupted by a narrow section of conglomerate from 409.87 to 410.09 at 73/31 degrees, and, a narrow section of granular to gritty conglomerate to wacke (no fragments noted) at 424.39 to 424.59 at 52/39 degrees. This is the most continuous section of mafic syenite. It varies little from the norm described above except that hornblende and amphibole are more readily visible locally. The sequence is weakly fractured with calcite and generally, pervasively calcitic. Pyrite mineralization is weak to absent. There are scattered irregular foreign fragments to 6 cms in size. Magnetic susceptibilities range from 5.13 to 19.7 with the majority of readings greater than 15 - readings of 4.41 to 9.94 in the conglomerate, and, 28.0 to 38.4 in the wacke. There is some accessory fracturing with quartz-calcite, bleaching with reddish tones and traces of fine pyrite over 9 cms from 411.0 to 411.09 - veins at 60 to 65 degrees.	21785	410.90	411.40	.50	TR	.002	.000	53
			21786	411.40	412.30	.90	NIL	.001	.000	41
			21787	412.30	412.80	.50	NIL	.004	.000	127
			53479	424.71	425.14	.43	TR	.002	.000	75
			21788	428.00	428.72	.72	NIL	tr	.000	15
		FRP- This is a thicker syenite porphyry dike similar to those described above. Although the feldspar phenocrysts are not fully developed, other features such as the colour, texture, mafic inclusions, etc are typical of the syenite porphyry observed in the main part of the Kirkland Lake Camp.								
		There is also a 5 mm mud seam, flanked by a 1 cm quartz-calcite vein at 412.46 at 24 degrees, unmineralized. It is coded as:.								
		412.40 412.53 Fault gouge.								
		The lower contact of the mafic syenite is sharp with an orange red syenite at 34 degrees - the orange red syenite is slightly bleached but the relative ages are unclear. The orange red syenite is only slightly harder than the mafic syenite.								
		425.00 425.01 Fault Zone FRP - This is a 1cm Carbonate Chlorite Fault/ vein @ 55 TCA with mild alteration in the walls and crushing up to a Chlorite Carbonate Slip @ 80 TCA about 15cm up hole. There are anomalous sulphides in the structure but only trace in the walls.								
428.72	436.83	SYENITE								
		Contact into a short unit of dull to bright orange red syenite. The unit is very fine grained without any megascopically visible feldspar although the dyke locally exhibits a more granular texture from a speckling with chlorite after mafic minerals. The rock is weakly fractured with calcite +/- chlorite and is locally pervasively calcitic. The syenite is better mineralized than the norm with trace to 1% disseminated pyrite blebs to aggregates with a local weak fracture control. Magnetic susceptibilities are erratic from 0.25 to 30.2. The dike also carries rare, irregular inclusions of foreign	21789	428.72	429.50	.78	TR-1	.002	.000	74
			21790	429.50	430.50	1.00	TR-1	.004	.000	127
			53480	433.59	434.00	.41	1	.004	.000	121
			53481	434.00	435.00	1.00	TR	.001	.000	33
			21791	435.00	436.00	1.00	TR	.003	.000	86
			21792	436.00	436.83	.83	TR-1	.003	.000	91

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		material to 2.5 cms in size. The lower contact is sharp with veining at 22 degrees.								
	433.80	433.81								
		Fault Zone FRP - This is a tight Chlorite Mud Fault @ 75 TCA with chloritic crushing a few cms into the walls and 1% sulphides over 15cm in the walls.								
436.83	446.61	MAFIC SYENITE PORPHYRITIC SYENITE								
		Return to mafic syenite, suggesting that it is the older of the two syenite phases. The dyke is similar to the previous units with scattered feldspars, a variety of mafic minerals and a weak to locally moderate, calcite overprint. This dyke also grades greyer in colour with depth from brick red at the outset, to more of a reddish grey circa 440 m which continues to grade greyer but is still a reddish grey by the end of the zone. The dyke is crudely fresher in appearance in the greyer portions with acicular amphibole needles and isolated spots of biotite but most of the mafic minerals continue to be strongly altered with chlorite. The dyke is weakly fractured with calcite and is essentially unmineralized. Magnetic susceptibilities range from 7.33 to 18.2. Fragments of foreign material to 3 cms in size persist into this segment, plus there is one wider inclusion of potential green, chloritic wacke from 440.79 to 441.03 m with very irregular but sharp contacts at 47/53 degrees - no fragments noted, contacts vary from 5 to 68 degrees. The lower contact is clean and sharp at 31 degrees.	21793	436.83	437.50	.67	NIL	.200	.000	67
			21794	446.00	446.61	.61	NIL	tr	.000	10
		FRP- Again, this is a syenite porphyry dike similar to those described above.								
446.61	472.33	CONGLOMERATE								
		Return to conglomeratic rocks with well developed coarse, polymict pebbles to 10 cms in size. With depth, clasts are more widely separated and a first segment of wacke enters the system between 465.21 and 465.82 - contacts irregular with coarse pebbles such that there is no sense of top direction. The wacke has a granular to gritty/sandy matrix and scattered fragments to 5 mms in size. At the lower contact, from 470.87 to 472.33, there is an increasing wacke component with more scattered coarse fragments to only 3 cms in size marking the transition to a wacke package after 472.33. There is trace to 1% pyrite in this lower contact interval, otherwise the conglomerate is unmineralized. The rocks are weakly fractured with calcite with local pervasive alteration. Magnetic susceptibilities range from 0.93 to 90.1 reflecting the variable magnetic properties of the fragments although most readings are greater than 20. There is a little accessory sericite and chlorite streaky alteration associated with a fragment (??) at 461.10 - over 3.4 cms (trace pyrite here as well). The lower contact at the lowest of the fragmental horizons is sharp at 54 degrees.	21795	446.61	447.50	.89	NIL	tr	.000	2
			21796	461.00	462.00	1.00	TR	.001	.000	34
			21797	470.50	471.50	1.00	TR-1	tr	.000	15
			21798	471.50	472.33	.83	TR-1	tr	.000	3
472.33	536.00	GREYWACKE								
		Transitional contact into a package of wackes. As noted in the conglomerate interface, the wackes have a fine gritty to sandy matrix. They vary from medium to dark grey green in colour with variable reddish washes. Down hole,	21799	472.33	473.00	.67	TR	.000	.000	nil







From To  
(m.) (m.)

## Geology

Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
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as maroon black specularite and green black chlorite in the fractures, along with streaks/ clots of pyrite and minor chalcopyrite. Sulphides amount to about 0.5% in the fault zone and trace to anomalous overall in the interval. Several chlorite alteration slips paralleling the main structures continue downhole. The veinlets and fractures are mainly calcitic but very minor ankerite is also present as indicated by staining. The central FAZ is broken out below as:.

594.60 595.22 Fault Zone - see description above.

601.30 601.37 Fault Zone - Certainly weaker than the previous zone, this appears to be a combination chlorite carbonate alteration slip @ 60 TCA with a possible conjugate alteration slip @ 25 TCA. The strongest alteration is in the walls of the slips although weaker brownish grey alteration continues for several decimeters in the walls along with anomalous pyrite and chalcopyrite (<0.5%).

605.50 629.72 Greywacke (weakly altered) - This interval includes a number of weak structures, mainly minor chlorite- carbonate alteration slips, around which the wacke has been moderately to mildly altered. Alteration generally encompasses a lightening of the host to light to medium buff/ olive grey through bleaching/ sericitization, carbonatization, and weak pyritization. Of note is the fact that the carbonate minerals are mixed throughout the interval with ankerite being dominant in the matrix and some veinlets while calcite occurs as pink coloured veinlets. The more prominent structures are described separately below. MS values undulate between 0.50 and 17.0, the lower values generally coincident with the more strongly altered zones. Mineralization ranges up to 2% over 10- 20 cm in the walls of the structures and is generally anomalous but averages trace overall.

605.99 606.03 Quartz-Carbonate Vein Zone - A dry looking dull grey carbonate quartz vein @ 65 TCA, it contains weakly altered and mineralized walls.

609.11 609.13 Quartz-Carbonate Vein Zone - This narrow quartz carbonate vein seems to form the focus of moderate chlorite and carbonate fracturing of the immediate walls as well as up hole for about a metre. Associated with the structure is moderate sericitization over 0.5m around the vein and mild to moderate alteration beyond; pyrite and minor chalcopyrite mineralization amounts to approximately 2% over 0.5m near the vein and 0.5% uphole.

612.67 612.69 Fault Zone - This is a strong chlorite slip @ 85 TCA with a 2cm tan and dull grey carbonate quartz breccia vein. There is a halo of 0.5-1% sulphides over about 10cm of moderately











QUEENSTON MINING INC

Drill Hole: AK03-05A

DIAMOND DRILL HOLE RECORD

Page: 1 of 3

Property: AMALGAMATED KIRKLAND  
 Northing: 10320.00  
 Easting: 8500.00  
 Elevation: 338.00

\*\*\* Dip Tests \*\*\*      \*\*\* Dip Tests \*\*\*  
 Depth Azi. Dip      Depth Azi. Dip

Date Started: April 4, 2003  
 Date Completed: April 4, 2003

Collar Azimuth (Grid) .00  
 Collar Dip: 55.00  
 (0 Degrees Grid equals 341 degrees True)  
 Hole Length: 16.30

Drilled by: BENOIT  
 Core Size: NQ  
 Material left in hole NX CASING  
 Core Location: Upper Canada Site 1  
 Logged by: FR Floeger

Date Printed: 19 Apr, 2004

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
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SUMMARY LOG

.00	2.40	OVERBURDEN								
2.40	4.62	TUFF TRACHYTE								
4.62	16.30	GREYWACKE								



From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
.00	2.40	OVERBURDEN								
		The drillers report the casing being driven to 6m although the footage blocks indicate only 2.4m of actual overburden.								
2.40	4.62	TUFF TRACHYTE								
		This is a questionable lithology that exhibits both flow and fragmental characteristics. In general, the unit has a granular appearance throughout but the clasts seem to have indistinct boundaries in many cases and are elongate/ flattened? without any indication of a tectonic fabric. A section in the middle of the zone near 3.85m contains 4 small jasper chips indicating a sedimentary component to the unit as well. The lower contact is sharp natural and very fine grained to aphanitic @ 45 TCA, and, with everything considered, appears quenched or chilled. Throughout the unit, there are fine mafic grains/ laths that, in places, resemble mafic (pyroxene?) phenocrysts in a flow sliver, and, in others, seem to be distinct fine fragments. At 4.30m, there is a fine grained silty lense with sharp but embayed contacts with a granular, fine grained section of wacke (containing a fine jasper chip) and larger grey mafic pebbles to 3cm in length.								
		The combination of textures, including minor wormy/ zoned fine hyaloclastite- like quenching?, may represent a welded tuff unit deposited into the sedimentary basin. This may explain the chilled contact, the inclusion of wacke, the mafic phenos in flow and fragmental settings the 'soft' margins and the flattening of many of the grains and clasts. It probably has a mafic trachyte affinity although at an average of 0.25, the susceptibility does not reflect the normal high values of a typical trachyte. The unit is mildly to moderately pervasively altered to light to medium grey with bluish and yellow green washes. Alteration consists of occasional fine white carbonate veinlets (<<0.5%) and pervasive carbonatization, in this case, ankerite, of the matrix. Local rusty/ oxidized slips are indications of ground water movement near surface. Mineralization comprises a few disseminated pyrite grains and minor streaks of sulphides in fractures and wall of veinlets amounting to trace overall.								
4.62	16.30	GREYWACKE								
		Through the apparently chilled contact described above, the rock becomes a fine grained massive greywacke. Uncharacteristically, the wacke does not contain any gritty lenses, only rare greyish yellow pebbles and fine jasper chips/ grains that are visible with a lense. It appears completely massive with no indications of bedding or interbedded finer sediments. Similar to the tuff, the wacke is moderately to mildly altered light to medium yellowy grey, becoming slightly lighter, more strongly altered, down hole. The yellow colouration is due in part to an increase in the sericite, as well as, ankerite alteration of the matrix. MS values are stable in the 0.06 to 0.16 range, averaging about 0.10. Sulphides, trace overall, are confined to grains and streaks associated with the 0.5% white ankerite- quartz veins/	21870	14.23	15.59	1.36	TR	.001	.000	27
			21871	15.59	16.30	.71	TR	.001	.000	46



From To  
(m.) (m.)

## Geology

Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
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veinlets that cut the host. Many of the veins and fractures are oxidized.

14.45 14.46 Carbonated Zone - A 1cm wide carbonate quartz vein cuts the core @ 40 TCA. The vein is partially oxidized and contains only a fine pyrite speck.

15.82 15.85 Carbonated Zone - As above, this is a carbonate quartz vein @ 60 TCA that is also partially oxidized. In contrast with the previous one, it contains several coarse streaks of pyrite and chalcopyrite in the vein, perhaps amounting to 3% over 5cm.

16.30 16.40 End of hole - According to the drillers block the hole ends at 16.40m indicating that about 10cm was lost at the bottom of the hole. In a conversation with the drill foreman, the hole had to be abandoned when the bit was fried due to lack of water.

Drill Hole: AK-03-05

DIAMOND DRILL HOLE RECORD

Property: AMALGAMATED KIRKLAND
Northing: 10322.00
Easting: 8500.00
Elevation: 338.00

Table with 6 columns: Depth, Azi., Dip (repeated three times). Values range from 6.0 to 270.0 depth and -54.0 to -41.0 dip.

Date Started: April 4, 2003
Date Completed: April 11, 2003

Collar Azimuth (Grid) .00
Collar Dip: -55.00
(0 Degrees Grid equals 341 degrees True)
Hole Length: 555.00

Drilled by: BENOIT
Core Size: NQ
Material left in hole NX CASING
Core Location: Upper Canada Site 1
Logged by: FR Ploeger

Date Printed: 19 Apr, 2004

Handwritten signature of FR Ploeger

Table with 11 columns: From (m.), To (m.), Geology, Sample No., From (m.), To (m.), Len (m.), Sul %, AU OZ/T, AU1 OZ/T, AU2 ppb.

SUMMARY LOG

Summary log table with 3 columns: From (m.), To (m.), Geology. Entries include OVERBURDEN, TRACHYTE TUFF, GREYWACKE, CONGLOMERATE BLONDE ALTERATION ZONE, etc.













From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
110.20	132.30	CONGLOMERATE BLONDE ALTERATION ZONE								
		The term BAZ may be taken out of context here but it adequately describes the strong alteration of the conglomerate. Apart from the clasts, which are dominantly various shades of creamy beige or medium to dark grey, the matrix is pervasively altered to a creamy light tan/ brown colour. Furthermore, the boundaries of the clasts are fuzzy and seem to blend into the matrix; and, rather than rounded, they tend to be subrounded to subangular in shape. If it were not for the fact that the susceptibilities fall within a tight low range of 0.14- 0.19, the host could be construed as a trachytic agglomerate zone. What also makes this unit distinctive is the fact that the alteration is sharply constrained within the contacts, ie there is no gradation above or below into the conglomerate. Both are on faults which are described separately below. The carbonate mineral in all the veining, about 2% overall, most of which trend @ 40- 50 TCA, and in the pervasive alteration, is ankerite. Outside of the bounding structures and a few veins and fractures which contain trace pyrite and chalcopyrite, the mineralization is nil.	21891	110.77	111.30	.53	TR	.000	.000	nil
			21892	111.30	112.28	.98	TR	.000	.000	nil
			21893	120.17	120.60	.43	TR	tr	.000	2
			21894	123.77	124.49	.72	TR	.001	.000	19
			21895	130.96	131.84	.88	TR	.000	.000	nil
			21896	131.84	132.37	.53	TR	.000	.000	nil
110.20	111.30	Fault Zone - The leading contact falls on a series of structures beginning with a tight but Strong Mud Shear Fault @ 50 TCA. This is followed by 25cm of moderately crushed and altered host that leads to a 20cm wide Chlorite Breccia/ Cataclastic Fault @ 45 TCA which is characterized by angular brecciation of the conglomerate, the fragments of which are healed by dark grey carbonate/ chlorite/ quartz?. The 0.5m remaining in the interval comprises about 40% dull grey to olive toned quartz carbonate patches and veining. The sulphide content of the FAZ is trace to anomalous.								
120.44	120.46	Carbonated Zone - A zone of weak chlorite fracturing is centred on this 1.5cm quartz carbonate vein @ 40 TCA. The fractures up and down hole parallel the vein and also trend @ 55 TCA.								
123.77	124.49	Fault Zone - Not really a structure, this zone encompasses a ragged chlorite slip that meanders along TCA. It is noteworthy because it contains a small number of chalcopyrite streaks, but the interval is still trace overall.								
132.28	132.30	Fault Zone - Forming the lower contact of the blonde alteration zone, the FAZ comprises a 3cm Sericite Shear Carbonate Fault @ 40 TCA with a few specks of pyrite and several weak chlorite slips/ fractures up hole.								
132.30	145.30	CONGLOMERATE GREYWACKE								
		At the contact, there is an abrupt change to a milder degree of alteration but with a corresponding increase to moderate crushing/ fracturing in the	21897	135.00	135.86	.86	TR	.002	.000	70
			21898	135.86	136.38	.52	TR	.000	.000	nil
			21899	136.38	137.30	.92	TR	.000	.000	nil



From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		<p>host. Although the pebble content increases to approximately 25% overall, and clasts become more variable in lithology, the subrounded nature and small general size, average 1-2cm (largest up to 4cm), the host is considered a pebbly to gritty wacke rather than conglomerate. For the first time felsic (creamy pink) pebbles are present. A fine grained, medium to dark grey mottled greywacke forms the matrix (the remaining 75%) of the unit. Many of the clasts are elongate and were probably deposited along the prevailing bedding planes @ about 55 TCA. The style and type of the clasts resemble those in the BAZ unit above and probably represent a continuation but less altered equivalent.</p> <p>MS values are somewhat more variable, falling within a range of 0.17 and 0.28. The matrix, although not as strongly altered as above, is still ankeritic as are the 5% dull white carbonate veins and stringers that cut the host. Mineralization continues to remain nil to trace. The moderate deformation, ie chlorite fracturing and the veining mentioned above, result from several strong faults that are detailed below.</p> <p>135.96 136.06 Fault Zone - This, the strongest structure in the interval, comprises a 4cm thick leading gouge/ mud/ broken core zone followed by another 6cm of chloritic crushing/ fracturing, all trending @ 60 TCA. For about 1.5m down hole, the conglomerate exhibits a style of alteration similar to the BAZ zone, medium creamy beige and grey carbonatization, that becomes weaker and gradually disappears by 139m. Despite the strength of the FAZ and accompanying alteration zone down hole, mineralization remains trace.</p> <p>140.12 140.84 Carbonated Zone - Most of the interval was recovered as broken chips and pieces which resulted from chlorite slips and fractures that parallel the porcellanic ankerite veining that cuts the conglomerate @ a very low angle TCA. Sulphides are trace.</p>	21900	140.12	140.84	.72	TR	.000	.000	nil
145.30	150.44	GREYWACKE	21901	145.55	146.60	1.05	TR	tr	.000	10
		<p>Both the leading and trailing contacts fall on very fine grained bands that are irregular, and, in part natural, and in part on weak chlorite carbonate slips @ 80\ 70 TCA. The wacke is riddled with 8-10% dull white ankerite quartz veins and streaks that are associated with several faults within the interval that are broken out separately below. The greywacke itself is massive and fine grained with a tendency towards a gradual increase into a medium grain size down hole. Variable moderate sericite and ankerite alteration accompanying the faulting and veining have induced a mottled light to medium buff grey colouration in the host. Pebbles are rare but small jasper chips persist throughout. MS values continue to register in a relatively low range of 0.19- 0.28 and only trace mineralization was noted.</p> <p>145.60 145.80 Fault Zone - Characterized by a 15cm thick sericitized fracture zone leading to 3cm of quartz carbonate veining and a</p>	21902	146.60	147.17	.57	TR	tr	.000	7

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		1.5cm thick quartz chlorite carbonate fault wafer with chlorite and mud bounding slips, the fault is unusual in that the mud slip also exhibits a thin coating of molybdenite/graphite. Mineralization continues to run trace. A second 1.5cm thick quartz carbonate chlorite wafer/ fault cuts the core at 146.36m. Both faults trend @ 65 TCA.								
150.44	187.47	CONGLOMERATE	21903	161.72	162.28	.56	TR	.001	.000	29
		The unit more closely resembles terrazzo or pea gravel than a Timiskaming type conglomerate. The clasts, which are fairly densely packed, range up to 3cm diameter but average about 8- 10mm. Poor sorting, lack of felsic/syenitic lithologies and the relative subangularity/ subrounding of many clasts attests to the immaturity of the unit. As with most of the pebbly phases in the upper parts of the hole, jasper chips are prominent but the majority of the clasts are light buff to beige coloured or various shades of grey ranging from almost white through to dark/ black. The overall colour of the fine conglomerate is determined by the fine grained greywacke matrix which is medium green grey with local buff/ yellowish grey hues where mildly altered adjacent to vein zones. In the upper 6m, the fragments are relatively small, <0.5cm, compared with the remainder of the interval.	21904	183.27	183.70	.43	TR	tr	.000	5
		Carbonate veinlets and fractures account for <0.5% of the host, all of it ankeritic in composition, as is the moderate pervasive carbonatization of the matrix. The sulphide content remains negligible and the magnetic susceptibility consistently low, in the 0.19- 0.32 range.	21905	186.21	186.56	.35	TR	tr	.000	10
162.13	162.17	Fault Zone - The FAZ is characterized by a 1cm quartz carbonate chlorite vein @ 20 TCA with 0.5m of moderate crushing and dirty light beige grey alteration. A sprinkling of very fine pyrite was noted in the vein and accompanying alteration.								
172.10	172.30	Mudstone - Only traversing half the core, this little sliver of mudstone is finely laminated but contorted indicating a probable slump provenance. It is aphanitic, medium slate grey to buff coloured and exhibits sharp natural contacts with the enclosing fine conglomerate.								
183.54	183.57	Fault Zone - This is a Carbonate Chlorite Crush Fault @ 60 TCA with weak sericitization and crushing of the walls and trace sulphides.								
186.36	186.48	Fault Zone - Another weak structure, this fault consists of a leading moderate sericitic shear zone and trailing 3 cm crush/ cataclastic feature trending @ 45 TCA. Sulphides are trace.								
187.47	191.14	MUDSTONE	21906	190.70	191.47	.77	TR	tr	.000	5

From To  
(m.) (m.)

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Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
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Leading off the mudstone unit through a natural irregular sharp contact @ about 40 TCA is a medium slate grey phase in which the fine bedding laminations are highlighted by very fine wispy sericite and carbonate threads. The host is aphanitic to very fine grained and the bedding fabric trends @ 35 TCA. From 188.50- 189.13m, the mudstone is interrupted by a fine conglomerate lense similar to that immediately above in the hole. The upper contact is wavy but sharp, natural @ 35 TCA, the trailing contact also sharp, but formed by a Carbonate Chlorite Fault @ 55 TCA. The conglomerate is moderately altered to a mottled light to medium grey which has masked and diffused the outlines of the some of the pebbles.

In the remaining section of the mudstone, alteration/ sericitization has increased, particularly along the bedding laminae thereby lightening the colour to a medium- light grey base with bright olive yellow/ chartreuse fine foliations defining the bedding. Deformation/ offsetting by late fractures and probable minor soft sediment deformation during the depositional cycle, has skewed bedding angles from undulating gently along TCA to cutting it at low angles of about 15- 20 degrees and ending at 40 TCA. The last 0.4m are a mix of the fine conglomerate and mudstone both of which have have been well fractured and altered.

The susceptibility varies through the interval, starting at 0.20 in the upper mudstone, increasing slightly to 0.25 in the conglomerate and dropping sharply to 0.12 in the lower mudstone only to rise gradually to 0.17- 0.20 near the end. In addition to the sericite alteration, the host is pervasively ankeritized and cut by 0.5% white ankerite chlorite stringers. Despite the higher degree of alteration, the sulphide content is nil to trace.

191.13 191.14 Fault Zone - Noteworthy not only because it terminates the mudstone unit, the FAZ is also the focus/ start of moderate to strong deformation- crushing and shearing- and sericite alteration that extends to 192.66m. It is characterized by a 2cm chlorite quartz carbonate wafer with a few slashes of pyrite and chalcopyrite that trends @ 70 TCA. The crushed zone that follows, also contains scattered sulphide grains, the aggregate of which are still below 0.5%.

191.14 258.90 CONGLOMERATE

As described with the FAZ above, the contact area is crushed and sericitized. Although the strongest deformation and alteration ends at 192.66m, it is not until 195.0m that the conglomerate is completely fresh and intact. Of all the lithologies described as conglomerate to this point in the hole, this phase truly represents the typical Timiskaming type of the Kirkland Lake camp. It is polymictic, complete with a number of reddish felsic- trachytic- porphyritic clasts as well as the diagnostic jasper pebbles, unsorted with a mixed clast and matrix supported texture, grewacke forming the matrix and lenses and relatively fresh and undeformed. The overall colour, basically that of the matrix, is medium to dark green to

21907	191.47	192.65	1.18	TR	tr	.000	10
21908	192.65	193.60	.95	TR	tr	.000	14
21909	209.23	209.64	.41	TR	tr	.000	5
21910	211.60	212.60	1.00	TR	tr	.000	9
21911	212.60	213.85	1.25	TR	.000	.000	nil
21912	213.85	215.19	1.34	TR	.000	.000	nil
21913	244.93	245.81	.88	TR	.001	.000	24
21914	247.80	248.20	.40	TR	.000	.000	nil
21915	248.20	249.45	1.25	TR	.000	.000	nil
21916	249.45	249.70	.25	TR	.000	.000	nil
21917	253.90	254.62	.72	TR	.001	.000	26

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		blue grey; clasts are multi coloured as expected and range up to 14cm in size. Beginning around 235m, fracturing, carbonate veining and alteration begin to increase progressively towards the lower contact. The greywacke lenses also become thicker than the conglomerate horizons.	21918	258.00	258.90	.90	TR	tr	.000	5
		Except for a couple of lower and irregular values to 0.15 in the altered section near the start, the magnetic susceptibility to about 221m is consistently within the range of 0.27 to 0.48, averaging about 0.35. Excluding a carbonate vein at 212m that follows the core axis, veinlets and streaks- generally white to dull grey- amount to approximately 2% of the host. This veining and mild to moderate pervasive carbonatization is ankeritic in composition. Except as noted, and apart from mineralization in some pebbles, the sulphide content is nil to trace.								
		209.36 209.63 Fault Zone - The width included in the fault structure encompasses a zone of chloritic fracturing/ crushing within which are contained several wavy dull grey quartz veins @ 75 TCA, a central Crush Quartz Chlorite Fault @ 53 TCA and a trailing Caarbonate Chlorite Fracture Fault @ 60 TCA. Mineralization comprises a fine dusting of pyrite that is anomalous but <0.5%.								
		211.60 212.60 Carbonated Zone - The zone here is a white carbonate (ankerite) vein with dull grey quartz patches and host rock inclusions that follows the core axis and terminates against a 4cm wide dull grey carbonate quartz vein cutting the core @ 35 TCA. Spashes of chalcopyrite were noted in the vein. A second fracture along TCA with minor veining occurs down hole at 213.85 to 215.19m.								
		244.93 245.81 Fault Zone - The FAZ is characterized by a series of intermittent Chlorite Crush structures @ 50- 60 TCA with early minor broken veining (quartz and carbonate) overprinted by later white ankerite veins, about 35% combined. Mineralization consists of anomalous- but <0.5%- fine pyrite and chalcopyrite.								
		247.88 248.00 Carbonated Zone - Another ankerite vein here (@ 50 TCA) that is unrelated to any significant structure, it is noteworthy because it contains a fine dusting of pyrite in the vein and walls. It is followed at 249.56m by a 2.5 cm carbonate quartz vein with minor fine pyrite @ 55 TCA.								
		254.00 254.20 Carbonated Zone - This is a Carbonate Crush Chlorite Fault @ 35/ 45 TCA with some dull grey quartz and additional ragged carbonate veining up and down hole. Fine anomalous sulphides occur in the vein and walls but fall well short of 0.5%.								
258.90	259.83	FAULT ZONE								
		75% Quartz carbonate veining accompanied by strong crushing/ cataclasis @	21919	258.90	259.83	.93	TR	.001	.000	21



From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		sericitization induced a competency into the rocks that allowed them to behave brittly during deformation. Sampling reflects slight increases in sulphide content, none of which attains 0.5%. As mentioned above, it is through this interval, at 292.0m, that calcite replaces ankerite as the dominant carbonate mineral.								
289.07	289.74	Mudstone - Similar to the mudstones higher up in the hole, this narrow aphanitic unit is well sericitized along bedding/lamination planes @ 20 TCA. Contacts with the enclosing wacke are sharp, natural and conformable with the bedding @ about 20 TCA.								
294.88	302.55	CONGLOMERATE	21929	295.38	296.30	.92	TR	.000	.000	nil
		With the loss of the pebbly horizons, the hole passes into a massive unit of fine grained greywacke. Strong sericite and calcite alteration have imparted an overall grungy light greyish olive colour and strong chlorite fracturing has superimposed a black spidery/ chickentrack like texture to the host. Small jasper chips and the fine granular texture are evident with a hand lense. In addition to 0.5% white calcite veinlets, large dull grey quartz blobs/ patches, unrelated to structure and amounting to about 10% of the interval, are also overprinted by the fracturing. Despite the veining, alteration and deformation, mineralization is trace. Sampling reflects anomalous increases in fine pyrite or concentrations of quartz blobs. MS values average about 0.18.	21930	298.54	299.47	.93	TR	tr	.000	12
			21931	301.40	302.52	1.12	TR	.000	.000	nil
			21932	302.52	303.34	.82	TR	tr	.000	14
302.55	306.48	MUDSTONE	21933	303.34	304.30	.96	TR	.001	.000	21
		At 302.55m, there is a sharp natural? contact @ 47 TCA with a very fine grained greywacke that grades into mudstone, through another sharp contact @ 35 TCA by 303.10m. From the contact to 304.30m, very fine grained greywacke bands/ beds up to 30cm thick are interbedded with thinner lenses of mudstone, the latter distinguished by the brighter olive yellow sericite alteration compared with the drab olive grey of the wacke. Both are well crushed/ fractured with dark grey/ black chlorite- quartz- carbonate filling the fractures. The magnetic susceptibility rises from 0.18 at the start to 0.34 by 304.30m. The next section to 305.07m, comprises a series of well laminated and graded mudstone beds dipping @ 40+/- TCA, a medium grey colour defining the slightly coarser bases while the finer tops are highlighted by olive yellow sericite alteration. Using the graded bedding, tops are consistently down hole. The remainder of this section is more uniformly textured, massive mudstone, also sericitized, but in situ brecciated with black chloritic fractures. Here, the MS values are slightly elevated at 0.25- 0.47. Lying immediately below this zone is a final very fine wacke bed, which, approaching the trailing contact, is interbedded with another sequence of laminated mudstones. Late calcite veining amounts to <0.5% and mineralization, generally trace but locally anomalous, occurs mainly in the chlorite fractures.								



From To  
(m.) (m.)

## Geology

Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
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hole appear to represent either fragments or sedimentary? inclusions that have been incorporated into the margin of a trachyte flow. There is no associated mineralization.

## 318.70 327.35 DIABASE

The leading contact of the northeast trending diabase dike falls on a Mud Gouge Fault @ 90 TCA that was recovered as a pile of fine chips. There is a gradual increase in grain size from fine to medium grained to about 321m where it continues to coarsen to 324m at which point it again fines to a 1m chilled lower contact. The overall colour is dark brownish grey in the coarse central part of the dike and blue grey in the finer phases. Mild alteration has masked the primary mineralogy of the diabase, but from the medium and coarse grained phases, it appears that equant and tabular mafic grains (altered hornblende and pyroxene?) occur in a finer grained felted groundmass of (altered equivalents) feldspar, hornblende?, pyroxene? with some calcite and epidote. The susceptibility is variable, with MS values ranging between 25.0 and 49.0 with a mean of about 35.

321.29 321.50 Broken Blocky Core - The core here was recovered as small pieces and chips centred on a Gouge Mud Carbonate Fault @ 70 TCA.

## 327.35 338.80 TRACHYTE TUFF

The leading contact of the trachyte falls on the chilled margin of the diabase @ 78 TCA. No attempt was made to isolate individual flow units from interlensed tuffs/ sediments. Flows tend to be massive textured and fine to very fine grained with rubbly contacts. Intermixed with these are interflow breccias/ agglomerates and finer tuffaceous lenses, the latter of which display more granular type textures, and, may in fact, be sediments. Two such zones, at 329.36- 331.48m and 336.30- 336.63m are distinguishable by the colour, a dirty brownish grey contrasted with a greyish orange to red for the trachyte, and by lower susceptibilities, which range from 0.50 to 2.40 in the upper sediment and 5.93 in the lower. Normal MS values in the trachyte are much higher at 6.5 to 36.0 although the hematized?/ orange altered fragmental looking section adjacent to the dike is lower, around 1.00-2.00, as is a bleached zone surrounding a vein at 333.30m, at 0.70 to 2.00. White carbonate shreds and veinlets, aggregating approximately 1% of the core, are calcitic. Mineralization consists of nests and disseminations of pyrite, and to a lesser extent, chalcopyrite which, even when combined, are trace.

329.36 329.42 Fault Zone - A leading mud slip @ 60 TCA is followed by 6cm of carbonate quartz breccia in this FAZ.

333.00 333.44 Quartz Vein Zone - About 35% dull to dark grey mottled quartz veining cuts the zone @ 75 TCA. Walls are altered to medium to dark brown grey, the alteration extending another 35 cm down

21934	329.26	329.67	.41	TR	tr	.000	3
21935	332.20	333.00	.80	TR	.003	.000	118
21936	333.00	333.34	.34	0.5	.024	.000	826
21937	333.34	334.00	.66	TR	.001	.000	38
21938	334.00	334.70	.70	TR	.001	.000	33
21939	334.70	335.40	.70	TR	.001	.000	17
21940	337.40	338.60	1.20	TR	.003	.000	113
21941	338.60	339.50	.90	TR	.001	.000	34



From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		hole. Associated with the veining and alteration are 0.5% fine pyrite and chalcopyrite as disseminations and fracture fillings. This vein zone has the 'feel' of an ore type structure.								
334.46	334.52	Carbonated Zone - This interval comprises a pastel pink calcite vein @ 65 TCA with minor chloritic shreds and a few small blebs of chalcopyrite and pyrite. There is no significant alteration associated with the vein.								
338.80	340.60	GREYWACKE								
		The leading contact falls on an irregular chlorite slip @ 35 TCA that coincides with an overall change of colour from a dark pink grey to a greyish olive. Although strongly crushed, the wacke exhibits a gritty granular texture even through the overprinted mesh of fine chloritic fractures. Several pinkish grains have retained their original colour despite the sericitization and calcification of the matrix. MS values fall within a range of 0.61 to 2.53 while mineralization is trace. The wacke ends on a 1cm pink calcite vein @ 65 TCA.								
340.60	344.11	TRACHYTE TUFF								
		A return to trachytic flows is marked by a change in colour to grungy greyish red to dark grey to brownish grey. As above, flow, interflow, fragmental and tuffaceous phases are mixed and difficult to subdivide because of the deformation and alteration. Pink calcite veinlets constitute 2% of the interval and again, sulphides are trace. The MS values show a gradual rise from 3.99 at the start to 12.6 at 343.10m and drop to 0.72 at the end.								
		344.02 344.05 Fault Zone - This feature is a Crush Chlorite Fault @ 45/ 60 TCA with no significant associated mineralization or alteration.								
344.11	348.25	PORPHYRITIC SYENITE								
		With the intense crushing and similar susceptibilities of the tuff and syenite, it is difficult to pinpoint the exact contact but it appears to fall on an intermittent light pink band of altered/ cooked tuff? @ about 75 degrees to the core axis. To complicate matters, the the finer grain size and lack of distinctive phenocrysts within the contact phase of the syenite porphyry dike, strongly resembles parts of the trachyte. Overall, the unit is fine grained with local medium grained sections, massive, and dirty medium pinkish grey coloured. With the aid of a lense, the porphyritic texture, comprising fine mm size dull grey subhedral feldspar grains, is visible through the moderate microfracturing. The phenos are nested in a fine grained, medium pink grey groundmass overprinted by a network of fine	21942	346.56	347.66	1.10	TR	.001	.000	50
			21943	347.66	348.78	1.12	TR	.001	.000	42

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		chloritic (black) fractures and chlorite pseudomorphs after hornblende?. A few scattered mafic inclusions, which are also characteristic/ diagnostic of the syenite porphyries of the Kirkland Lake camp are also visible. MS values maintain a level of about 1.00 for most of the interval but rise to 6.8 and 10.0 over the last metre. Mineralization is trace and calcite remains the dominant carbonate mineral in the matrix and as 0.5% fine white and dull grey veinlets.								
348.25	354.90	PORPHYRITIC SYENITE	21944	354.00	354.90	.90	TR	.001	.000	41
		A colour and textural change occurs here along a fairly sharp contact @ 60 TCA, however, the host appears to be another phase of syenite porphyry. The colour becomes greyish brick red but the faint porphyritic texture and mafic inclusions described in the previous interval, persist. The trailing contact consists of a very strong break which may have contributed to the alteration/ hematization? of the syenite. The last metre becomes progressively more crushed/ microfractured/ chloritic approaching the fault although much of the unit itself is very finely microfractured throughout. Four percent pink calcite veins to 3cm, and fine veinlets cut the syenite host at various angles, the most prominent being 45/ 60 TCA. MS values start at 1.70, rise to 3.30 and then fall gradually to 0.37 at the end. There is no anomalous mineralization.								
354.90	355.30	FAULT ZONE	21945	354.90	355.35	.45	TR	.002	.000	69
		The strength of the structure dictated that it be broken out separately. As mentioned above, the porphyritic unit became more crushed near the fault, the fractures healed with chlorite, while the FAZ itself is a strong late feature characterized by strong shearing accompanied by mud and gouge. The leading 5cm consist of a plug of mud and gouge, followed by 15cm of fissile/ porous shearing @ 45/ 55 TCA and another 12cm of strong crushing with mud slips, and, a final 4cm quartz carbonate vein with bounding mud slips @ 60 TCA. The structure itself shows no evidence of alteration or mineralization.								
355.30	365.00	PYROCLASTIC TUFF	21946	355.35	356.29	.94	TR	.002	.000	51
		In places, the host appears to be a massive unit that has been tectonically fragmented, in others, the fine breccia seems to be a primary feature. The leading 0.8m are well fractured, half dark grey/ chloritic, the rest with lime coloured sericitic streaks, reminiscent of a sedimentary host. Mineralization here adjacent to the FAZ ranges up to 0.5%; MS values are 0.21- 0.31. Below, to a chloritic foliated tuff? at 361.85m, the texture is definitely fragmental. The leading metre exhibits a terrazzo like texture where dull pink to orange fragments to 1cm are nested in a grungy dark pink grey matrix. Further down hole, the matrix becomes more massive looking with a cleaner pink grey colour. The fragments, more diffuse and generally bright pink and orange coloured, look more like altered phenocrysts or selectively altered in- situ breccia fragments. Below the mafic tuff? lense, matrix and	21947	356.29	357.12	.83	TR	.006	.000	201
			21948	364.90	365.58	.68	TR	.001	.000	19



From To  
(m.) (m.)

## Geology

Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
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- 387.82 387.89 Quartz-Carbonate Vein Zone - This is an irregular zone of medium grey quartz and pink calcite veining @ 65 TCA with chloritic fractures and 0.5% pyrite and chalcopyrite.
- 397.10 397.75 Fault Zone - The main structure, a Strong Bleach Quartz Carbonate Fault @ 60+/- TCA occurs over 27cm at the start of the interval. It comprises a leading 0.5cm carbonate chlorite slip followed by 9cm of shearing/ foliation with speckled quartz carbonate veining, a 10cm quartz ankerite vein, 6cm fractured host, a 1cm laminated quartz chlorite vein, and finally 35cm of bleaching with scattered chlorite slips/ fractures. The entire interval is bleached to an olive lime green colour and is ankeritic. Alteration occurs sporadically between 394.60m and 405.57m, generally associated with weaker fracture zones related to the main FAZ. Almost the entire host within this broader zone is moderately fractured and altered to a light to medium grey pink or orange colour. In addition to the main fault zone, a section between 399.5m and 405.50m is weakly ankeritic, both in the veining and matrix, with some intermixed calcitic veinlets. Mineralization averages about 0.5% in the FAZ and ranges up to 0.5% over a few decimetres elsewhere within the alteration envelope. Lower MS values, which reflect the alteration of the overall interval through the conversion of magnetite to pyrite and hematite, are lowest, at 0.40, in the bleached FAZ, and range between 1.31 and 21.5 elsewhere.
- 405.23 405.24 Carbonated Zone - A 1cm thick pink carbonate vein with bounding chlorite slips @ 78 TCA followed by intense crushing for 30cm and another 50cm of moderate fracturing to 406.10m, ends the deformation corridor.
- 406.10 446.28 Porphyritic Syenite Mafic Syenite - Beyond the influence of the FAZ, the syenite porphyry again darkens to an overall mottled dark brownish grey colour. The porphyritic texture, as described prior to the fault, persists but the impression is that the host has become more mafic looking. In fact, in places the appearance is that of augite syenite with lighter coloured augite pseudomorphs in a darker matrix. However, with the aid of a lense, remnants of the waxy green and lighter zoned feldspar crystals can be discerned indicating that the the host has not changed, but perhaps there is a gradation in and out of more mafic phases. The black mineral grains (amphiboles altered to chlorite?) that were originally tabular, are now, curiously, round/ spherical in places; their percentage also varies. As with the large blebs described previously, pyrite continues to be associated with chlorite fractures and spots as well as occurring in mildly altered sections within crushed zones and adjacent to chlorite slips as at 418.00m (a 1cm quartz pyrite carbonate vein@ 20 TCA), at

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		422.76m (2mm carbonate chlorite slips @ 80 TCA), from 423.80-423.90 (series of chlorite slips @ 75 TCA), and 431.08m (a chlorite carbonate shear @ 80 TCA). Otherwise, the sulphide content is trace. The porphyry is cut by 1% late pink and dull grey calcite veinlets; the matrix is slightly calcitic. MS values are highly irregular, bouncing between 20 and 40 with progressively lower values, to around 3.00, in the altered and fractured zones listed above.								
446.28	457.05	TUFF TRACHYTE	21967	449.62	450.40	.78	TR	tr	.000	2
		The texture and grain size remains constant ie, no chilled margin, to the lower contact of the syenite porphyry. It appears as though the tuff has been deposited on top of the porphyry and incorporated some porphyry clasts into the leading few centimetres. This scenario implies that the porphyry was subaerial, either through erosion or as a thick extrusive, and that the tuff was unconformably deposited on top, ie tops down hole.	21968	450.40	451.50	1.10	TR	.000	.000	nil
			21969	456.00	457.00	1.00	TR	.001	.000	39
			21970	457.00	457.45	.45	TR	.007	.000	219
		Overall medium greenish grey and relatively fresh over the first half of the interval and becoming medium grey brown altered lower down, the tuff is fine grained and granular textured with local slightly coarser lenses exhibiting crude bedding contacts @ high angles (75- 90 TCA). Some of the grittier beds are almost entirely composed of subangular fragments of mafic to intermediate composition with only rare pink/ felsic grains. Subtle changes in colour start to occur between 449.70 and 451.43m, a zone with three pink calcite chlorite vein/ fracture zones @ 55/ 75/ 85 TCA. Below this, the tuff is mildly fractured and altered to the lower faulted contact. The 0.5% carbonate veining over the interval consists of pink calcite with minor chlorite and quartz and trace sulphides. MS values are totally erratic, ranging between 1.40 and 18.5.								
457.05	483.55	PORPHYRITIC SYENITE	21971	457.45	458.50	1.05	0.5	.010	.000	329
		Typical of the Timiskaming Kirkland Lake type syenite porphyries, this unit starts on a leading 25cm Quartz Alteration Crush Fault @ 70 TCA. It is characterized by a 12 cm wide dull grey crushed quartz vein with 8% grains and streaks of pyrite, followed by a 14cm section of crushed brick red altered porphyry with 0.5% pyrite and ending with a porous 2cm plug of foliated host with 2% fine dusty pyrite. The porphyry is massive, fine grained with 2mm sized dull white to pink feldspar phenos in a fine grained, medium pink to brick orange coloured groundmass and contains 1-2% scattered mafic inclusions to 9 cm but averaging less than 2cm.	53491	458.50	459.25	.75	TR	.000	.000	nil
			53492	459.25	460.27	1.02	TR	.002	.000	61
			21972	468.64	469.88	1.24	TR	.000	.000	nil
			21973	469.88	471.00	1.12	0.5	.006	.000	211
			21974	471.00	472.02	1.02	TR	.013	.000	458
			21975	472.02	472.70	.68	TR	.013	.000	447
			21976	472.70	473.78	1.08	0.5	.044	.000	1513
			21977	473.78	474.93	1.15	TR	.016	.000	540
			53493	474.93	475.70	.77	TR	.002	.000	77
			53494	475.70	477.00	1.30	TR	.002	.000	70
			53495	477.00	478.04	1.04	TR	.021	.000	723
			21978	478.04	478.80	.76	TR	.007	.000	247
			53496	478.80	480.00	1.20	TR	.004	.000	141
			53497	480.00	481.30	1.30	TR	.001	.000	38
		To 468.20m, the syenite is cut by 1% fine pink and dull white carbonate (calcite) veinlets with the exception of a 0.5m interval from 462.60-463.00m which is ankeritic. Apart from the mineralization associated with the FAZ at the start, the sulphide content is trace to 463.0m. From here to 472.50m, the veining and matrix are moderately ankeritic. The host becomes brick orange altered as microfracturing and the sulphide content both	21979	481.30	482.20	.90	0.5	.004	.000	141
			21980	482.20	483.42	1.22	0.5	.002	.000	77



From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
482.70	483.00	Lost core At the 383m block, there is a small pile of finely ground core. In measuring from the previous block, it was found that 0.30m was missing/ ground out.								
493.00	498.50	Broken Blocky Core - A series of moderately strong chlorite slips cut the core axis at low angles (<20 degrees), some more irregular fractures, including a drusey fracture filled with carrot orange calcite at 495.85m, track along TCA. All of these combined to cause the broken core.								
502.13	503.09	Carbonated Zone - This is a zone of 20% dirty grey carbonatization around fractures with 0.5% disseminated pyrite. The tuff is moderately hematized to a mottled grungy greyish orange and MS values drop to 2.00 over the interval. Calcite is the dominant carbonate mineral.								
503.90	511.80	Tuff - A continuation of the typical tuffaceous corridor described above, it is unusual because there are several well defined bedding features displayed at 503.30m (@ 80 TCA) and 511.37 (wavey @ 65) TCA. Overall, it is relatively fresh, dark brown grey coloured with a susceptibility between 18 and 29 and averaging about 24. Minor sulphides (<0.5%) occur over a width of 8cm near a Chlorite Slip @ 75 TCA at 511.12m.								
511.80	515.80	Tuff - Although there is no overall change in texture or degree of alteration, the susceptibility jumps to a plateau of about 44. The only tangible change is a reddish hue that overprints the brown grey colour of the tuff.								
515.80	524.12	Tuff - Forming the trailing element of the trachyte tuff sequence, the MS values gradually decrease to 1.24 at the contact with the conglomerate. The decrease reflects an elevation of pink calcite content to 7% overall and an increase in microfracturing and accompanying alteration which changes the colour to a mottled light creamy beige and grey. The sulphide content rises marginally to become anomalous near the end but never reaches 0.5%. The contact itself falls on a weak chlorite slip @ 45 TCA.								
524.12	527.47	CONGLOMERATE	21994	524.12	525.00	.88	TR	.001	.000	51
		Through the chlorite slip that forms the contact, the hole plunges directly into a narrow corridor of typical Timiskaming conglomerate. It is polymictic with a wacke matrix and lenses, moderately fractured but only mildly altered (hematitized?) which has imparted a purplish hue to the core. Fractures, weakly sericitic and carbonate filled are locally transformed into weak shear structures @ about 75 TCA. Several minor Chlorite carbonate Faults at 426.38 and 426.90m cut the host @ 60/ 50 TCA. All the veining and fracture fillings in the conglomerate are calcitic. The susceptibility starts at 24.5 but quickly drops to a relatively stable platform of around 6.	21995	525.00	526.20	1.20	TR	tr	.000	10
			21996	526.20	527.43	1.23	TR	.001	.000	46
			21997	527.43	528.46	1.03	TR	.010	.000	353





Drill Hole: AK 03 06

DIAMOND DRILL HOLE RECORD

Property: AMALGAMATED KIRKLAND  
 Northing: 9563.00  
 Easting: 7400.00  
 Elevation: 332.00

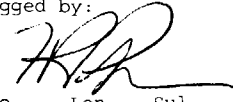
*** Dip Tests ***			*** Dip Tests ***		
Depth	Azi.	Dip	Depth	Azi.	Dip
5.0		62.0	180.0		-60.0
90.0		-60.0	272.0		58.0

Date Started: April 15, 2003  
 Date Completed: April 18, 2003

Collar Azimuth (Grid) .00  
 Collar Dip: -62.00  
 (0 Degrees Grid equals 341 degrees True)  
 Hole Length: 335.00

Drilled by: H & S  
 Core Size: NQ  
 Material left in hole NX CASING- pulled  
 Core Location: Upper Canada Site 1  
 Logged by: FR Ploeger

Date Printed: 19 Apr, 2004



From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
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SUMMARY LOG

.00	1.35	OVERBURDEN								
1.35	206.00	SYENITE								
206.00	217.71	CONTACT ZONE								
217.71	220.95	TUFF SYENITE								
220.95	223.79	SYENITE TUFF								
223.79	233.28	ALTERED SYENITE								
233.28	244.56	BASALT								
244.56	249.00	ALTERED SYENITE								
249.00	258.70	TUFF ANDESITE								
258.70	262.24	LAPILLI TUFF								
262.24	266.30	GREEN CARBONATE ZONE CARBONATED ZONE								
266.30	266.70	LARDER LAKE BREAK								
266.70	278.06	TUFF TRACHYTE TIMISKAMING GROUP								
278.06	279.94	MUDSTONE								
279.94	296.75	TUFF ARKOSE								
296.75	323.63	TUFF GREYWACKE								
323.63	335.00	MUDSTONE								









From To  
(m.) (m.)

## Geology

Sample From To Len Sul AU AU1 AU2  
No. (m.) (m.) (m.) % OZ/T OZ/T ppb

a partly digested granitic? inclusion with a serated/  
transitional leading contact @ about 40 TCA and sharp trailing  
contact at 163.29m @ 65 TCA with a foliated (@ 80 TCA) medium  
pink grey segment to the end.

- 165.51 165.56 Fault Zone The fault is characterized by an upper 4cm of  
purple alteration and foliation followed by a 1cm mud gouge  
wafer @ 45 TCA.
- 165.56 168.88 Syenite Mafic Intrusive - With the upper contact on the FAZ  
described above, this package is a mix of fine to medium  
grained orange syenite, possibly an internal contact phase of  
the syenite, and, amorphous, medium grey mafic blobs to 0.5m  
that may represent digested mafic inclusions within this  
contact phase. The interval also contains several short  
segments of coarse grained, hematitized host. Outside of the  
host, MS values range between 1.47 and 5.94; mineralization  
and veining are nil to trace.
- 168.88 172.94 Syenite (fractured) - Similar to the hematitized structural  
zones described at 132m, the interval comprises medium to  
coarse grained syenite that is moderately fractured and  
locally foliated @ about 60+/- TCA resulting in a streaky  
greyish orange blend of colours. The fabric does not appear to  
be related to any focussed structure within the interval.
- 174.78 176.62 Mafic Intrusive - Another zone reminiscent of a partly  
digested fine grained mafic inclusion, this member contains  
ribbons and lenses, and also ends with, medium grained, orange  
syenite. 2-4cm pink feldspar grains are also sprinkled through  
the mafic inclusion. Overall, it is light to medium pinkish  
grey, with a sharp leading contact on a chlorite shear slip @  
15 TCA and lower contact partly natural and partly on a  
chlorite slip @ 40 TCA. As with the hole to date, it is  
unmineralized and minor dull grey veining is calcitic.
- 176.62 206.00 Syenite (bimodal) - A return here to the bimodal phase of the  
syenite as described previously, although it appears that the  
feldspar crystals grade upwards in size to 1.5cm rather than  
being defined by 2 distinct fractions. The light creamy white  
to pink feldspar laths are nested in a fine grained, dark grey  
green interstitial groundmass. Initially, the susceptibility  
drops gradationally from 19.8 at the start to 7.4 at 182m and  
rises to 27.4 at 184m. It then undulates gently between 18 and  
28 to the end of the interval. Mineralization and calcite  
veining remain nil to trace. Scattered rare mafic inclusions  
to 20cm were noted but not described separately.
- 185.00 185.05 Fault Zone - A small pile of gravel/ ground core and gouge  
mark this fault. It is difficult to identify an exact  
orientation, but it appears to cut the core axis at a high

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		angle.								
188.67	188.83	Fault Zone - This is a shear/ crush chlorite fault @ 70 TCA with a 4mm leading dull grey quartz stringer and 10% ladder type calcite veinlets. Veins and fractures host a few fine specks and splashes of chalcopyrite, less than 0.5% overall.								
194.68	195.20	Shear Zone - About 5cm of the contact zones are moderately well foliated @ about 40 TCA and the remainder, mildly foliated. There are no associated sulphides or veining.								
206.00	217.71	CONTACT ZONE								
		The contact zone can be broken down into two main elements, a coarse to medium grained fractured and foliated upper zone, and, a fine grained, brick red/ orange coloured, well fractured lower zone. The upper horizon, basically an extension of the bimodal phase, differs in that there is a general decrease in grain size down hole, although it is still relatively coarse grained, and the host becomes more deformed with a weak, but more persistent foliation fabric @ 40- 50 TCA. Mild to moderate microfracturing and hematitization of the feldspar grains also increase towards the lower phase. At 209.95m, there is an abrupt reversal from calcite to ankerite as the dominant carbonate mineral in both the veining and matrix.	22005	209.68	210.50	.82	TR	.002	.000	62
			22006	210.50	211.07	.57	0.5	.001	.000	31
			22007	211.07	212.00	.93	TR	.000	.000	nil
			22008	212.00	213.00	1.00	TR	.000	.000	nil
			22009	213.00	214.31	1.31	TR	tr	.000	2
			22010	214.31	215.60	1.29	TR	.000	.000	nil
			22011	215.60	216.70	1.10	TR	.000	.000	nil
			22012	216.70	217.39	.69	0.5	.001	.000	38
			22013	217.39	217.73	.34	0.5	.001	.000	34
		The transition point defining the contact between the upper and lower zones was taken at a 3mm thick pyrite vein @ 40 TCA at 210.60m. Within 30cm of the contact, the feldspar grains become more abundant and well hematitized (brick orange altered), as is the groundmass feldspar, to the point where the host appears massive. Minor interstitial mafics and chlorite filled fractures/ microfractures/ crushing impart a crackle texture to the alteration. From 215.50m to the end, there is a return to a medium grain size, created in part by the microfracturing, and in part, natural. The last 30cm are streaked to foliated, perhaps indicating a flow contact feature of the Murdock Creek Stock. It is through this lower member that sulphides become anomalous, generally as fine to medium disseminated pyrite grains and as minor streaks and clots (217.35m). Locally, mineralization amounts approximately 0.5% over 0.5m. The susceptibility ranges between 2 and 18.								
217.00	217.02	Fault Zone - A weak chlorite breccia fault @ 50 TCA contains a few splashes of pyrite.								
217.71	220.95	TUFF SYENITE								
		Although light greyish orange in colour and somewhat resembling a very fine grained contact phase of the syenite, a fine foliation fabric and streaky texture indicate a syenitized tuff protolith. The fabric, @ 60 +/- TCA, is delineated by fine, light to dark grey, lamellar streaks and shears that follow the original bedding features. The proximity to the major intrusive probably 'syenitized'/ cooked the contact zone and may have enhanced the	22014	217.73	218.69	.96	0.5	.002	.000	74
			22015	218.69	219.60	.91	TR	.001	.000	31
			22016	219.60	220.47	.87	0.5	.000	.000	nil
			22017	220.47	220.94	.47	2	.003	.000	86
			22018	220.94	221.72	.78	0.5	.002	.000	77

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		original bedding fabric through ductile movement. The host is very hard, ie will not scratch, and peppered with trace to 2% fine disseminated sulphides. The lower 35cm, which are separated from the upper section by a 15cm chloritic tuff and altered to a brick red colour, are medium textured and more fractured than foliated and may represent a syenite/ felsitic dike. Mineralization increases to 2% over this trailing section but veining remains negligible. The unit is pervasively ankeritized and the susceptibility ranges between 2 and 9.								
220.95	223.79	SYENITE TUFF	22019	221.72	223.00	1.28	0.5	.001	.000	34
		This, the start of several zones of mixed lithologies, is characterized by a leading mafic tuff, intermediate syenite, and lower fine tuff similar to the syenitized tuff above. All the packages are ankeritic but the magnetic susceptibilities and sulphide contents vary individually.	22020	223.00	223.70	.70	TR	tr	.000	5
			22021	223.70	224.65	.95	0.5	.002	.000	80
220.95	221.74	Tuff - Leading the mixed zone with a sharp upper contact @ 45 TCA is a medium to dark grey green mafic tuff with shreddy/ streaky lighter buff grey lapilli? or fine flattened grains. There is a penetrative foliation @ about 50 TCA along which the fragments have been smeared. The MS values drop to 0.92 and 2.90 and mineralization is trace. The lower contact contains slivers of the following syenite before becoming more massive through a contact @ 65 TCA.								
221.74	222.94	Syenite - The syenite is relatively massive, medium textured, and brick orange coloured at the start but rapidly becomes crushed to the point where a crude foliation fabric develops @ 60+/-TCA. Fractures are chlorite carbonate filled and include up to 0.5% sulphides. MS values jump to an average of 7.5.								
222.94	223.79	Tuff - Very similar in character to the tuff in contact with the Murdock Creek stock syenite, this unit lacks the orange alteration. It is very fine grained and well foliated along very fine chlorite slips @ 50+/-TCA. The overall colour, pale tan, is streaked with the light grey of the chloritic foliation planes. The leading contact falls on a chlorite slip that cuts across the fabric; the trailing contact is @ 70 TCA. MS values are variable ranging between 1 and 5; mineralization is somewhat anomalous but does not attain 0.5%.								
223.79	233.28	ALTERED SYENITE	22022	224.65	225.74	1.09	0.5	.001	.000	26
		More deformed than altered, a 'syenite' seems to form the dominant protolith in this interval. Intermixed with the syenite are rafts of mafic tuff/ flows and aplite dikes. The overall appearance of the unit is that of a coarse arkose, granular looking with varying percentages of coarse medium orange grains in a green grey matrix, however, where the clast concentrations are the highest, the pieces seem to fit together into a massive texture that has	22023	225.74	226.70	.96	0.5	.001	.000	34
			22024	226.70	227.15	.45	1	.001	.000	27
			22025	227.15	228.12	.97	0.5	.002	.000	69
			22026	228.12	229.23	1.11	TR	.001	.000	21
			22027	229.23	230.00	.77	TR	.001	.000	22
			22028	230.00	231.00	1.00	TR	tr	.000	15

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		been tectonically deformed. The cataclasis of a syenite host, possibly a phase of the Murdock Creek stock, induced the arkosic texture. Matrix material could be envisioned as the chlorite altered mafic groundmass of the very coarse grained phase of the stock and the arkose grains as granulated feldspars. In fact, matrix material comprises dark grey green chlorite, dull grey carbonate (ankerite), and dull yellow sericite.	22029	231.00	231.62	.62	TR	tr	.000	3
			22030	231.62	232.10	.48	0.5	.000	.000	nil
			22031	232.10	233.30	1.20	TR	.001	.000	19
		The magnetic susceptibility of the 'syenite' starts relatively high at 8.52 dropping to between 0.54 and 4.54 over most of the interval. Sulphides are generally trace to anomalous and associated with very minor veining and structures, aggregating up to 5% over 5cm or so. Veining, usually ankeritic with minor quartz, accounts for approximately 0.5% of the package; the matrix is strongly ankeritic.								
	227.00	227.10	Quartz Vein Zone Broken Blocky Core - A 3cm quartz carbonate vein @ 45 TCA is nested in a 15cm section of broken core that probably represents a fault at the same attitude as the vein. About 5% sulphides occur in fractures in the vein. The host seems to be a mafic volcanic sliver similar to that described below.							
	229.22	230.04	Basalt - Beginning on a 2cm thick brick orange aplite dikelet @ 55 TCA, the mafic assemblage is moderately foliated throughout @ 45- 55 TCA. There is an immediate loss of the granular texture of the syenite and replacement by a fine grained streaky to mottled foliated carbonate that overprints a medium blue grey mafic volcanic base. The fabric highlights possible tuffaceous and fragmental textures, more massive segments may represent thin massive flow units. A few narrow ribbons of granulated syenite also cross the interval. The MS values are consistently around 5 over the leading 0.5m and below 1.00 for the rest. Mineralization is trace and the carbonatized fabric, ankeritic.							
	231.94	232.10	Felsic Dyke - One of the thicker felsic dikes, it cuts the host @ about 55 TCA. It is massive, very fine grained, bright brick orange in colour and is laced with a network of fine, ladder like white ankerite veinlets/ fractures that host about 3% pyrite. The susceptibility is 1.21.							
233.28	244.56	BASALT								
		This is another hybridized zone that appears to be dominantly mafic volcanic in composition with interlensed units of 'syenite', chert? and felsic dikelets. The most prominent of these mafic horizons occur at 233.28-233.78m, 234.46- 236.32m, 237.39- 238.82m, 242.77- 244.58m with additional narrow slivers included within the 'syenite'. Typically, the volcanics are fine grained, light buff grey/ green, massive textured but overprinted with puffy creamy/ buff carbonate alteration patches and fracture fillings. Locally, the texture becomes choppy/ shreddy and slightly darker green over	22032	233.30	234.46	1.16	TR	.001	.000	26
			22033	234.46	235.32	.86	TR	.001	.000	19
			22034	235.32	236.00	.68	TR	.000	.000	nil
			22035	236.00	236.66	.66	TR	.001	.000	38
			22036	236.66	237.39	.73	0.5	tr	.000	11
			22037	237.39	238.38	.99	0.5	tr	.000	10
			22038	238.38	239.29	.91	0.5	.001	.000	17
			22039	239.29	240.10	.81	0.5	tr	.000	12
			22040	240.10	241.20	1.10	0.5	.000	.000	nil



From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		5- 10cm which is interpreted as a breccia zone within the sequence of massive flows. Segments of crushed syenite are also included within the package. The buff coloured patches and fractures are strongly ankeritic, but in general, mineralization is trace. MS values vary from one flow section to another, ranging from highs of 31 over the leading interval and dropping to 1- 6 in the lower flow with local spikes of 51.6 in a fragmental section at 237.53m and 83.5 in a magnetite speckled contact zone at 242.90m.	22041	241.20	242.50	1.30	TR	tr	.000	2
			22042	242.50	243.15	.65	0.5	.002	.000	79
			22043	243.15	244.57	1.42	TR	.001	.000	21
		Two distinctive magnetically strong members, at 236.66- 237.39m and 239.90- 240.06m, that are fine grained, massive textured and light bluish grey in colour, resemble chert lenses but are not siliceous (ie, will scratch). Contacts with the enclosing rocks are sharp, natural @ 45/ 65 and 35(curved)/ 65 TCA, respectively. The thicker of the units is fractured along the core axis near the start with creamy beige alteration and pyrite lining the walls of the fracture. Absolute MS values range from 26.6- 87.3 in the upper lense and 61.5 in the lower, the only one in which free magnetite is visible.								
		The remaining segments of the overall interval consist of the granulated syenite masses described previously. There is a more subdued appearance to these sections as the feldspars are not as brightly altered, the tones tend to range in the pale pink/ orange grey spectrum. The crushing/ microfracturing is generated more in situ with generally weaker foliation development @ about 60 TCA. The overall sulphide content ranges from trace to anomalous with local enrichment to 0.5% over a metre or so. MS values are relatively well constrained to a range of 15- 21.								
		241.70 242.05 Broken Blocky Core - The core here appears broken along fractures at low angles TCA rather than along a focussed structure.								
244.56	249.00	ALTERED SYENITE								
		This is basically a continuation of the granulated 'syenite', more as described in the code 4 interval above than at 223.79m. The overall colour ranges from light pastel pinkish grey to light greyish orange and the crushing/ microfracturing and related textures persist. Also included are thin mafic flow members and a few bright orange felsite ribbons. The leading contact is sharp, natural, but irregular @ 40/ 45 TCA, the lower contact is equally sharp but falls on a strong chlorite slip @ 60 TCA. The susceptibility of this syenite is somewhat more varied ranging between lows of 10 and highs of 39. Mineralization averages trace but climbs locally to 10% over 12cm at 146.60m. Although there is no significant veining, the matrix remains strongly ankeritic.	22044	244.57	245.47	.90	TR	tr	.000	7
			22045	245.47	246.20	.73	TR	.002	.000	57
			22046	246.20	246.75	.55	2	.002	.000	67
			22047	246.75	247.71	.96	TR	tr	.000	15
			22048	247.71	249.00	1.29	TR	tr	.000	14
249.00	258.70	TUFF ANDESITE								
		This may be the continuation of the mafic sequence but the overall lighter colours and the mottled, streaky and foliated textures imply a more felsic	22049	249.00	250.28	1.28	TR	.000	.000	nil
			22050	250.28	251.10	.82	0.5	.003	.000	94
			22051	251.10	251.94	.84	TR	.008	.000	290

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		to intermediate composition for a volcanic flow and tuff protolith. Mixed with the flows and tuffs are felsite dikes and minor 'syenite' slivers. As with the previous volcanic intervals, more massive, fine grained, mottled sections as from the start to 251.67m, are interpreted as massive flows. In fact, this leading unit is characterized by light to medium buff/ blue grey mottling in addition to the massive nature and fine grain size. Minor foliated sections represent interflow tuffs. Apart from the felsite dikes, mineralization in the flows is trace; MS values are moderate, in the 2.0 7.5 range.	22052	251.94	252.85	.91	0.5	.004	.000	122
			22053	252.85	253.90	1.05	TR	.001	.000	48
			22054	253.90	255.00	1.10	0.5	.004	.000	125
			22055	255.00	256.00	1.00	0.5	.001	.000	48
			22056	256.00	257.00	1.00	TR	.003	.000	99
			22057	257.00	258.00	1.00	0.5	.002	.000	75
			22058	258.00	258.70	.70	1	.004	.000	146
		Below 251.67m, the host is generally more streaky to foliated @ 45- 60 TCA with a few sections of spindly/ lamellar texture suggesting a lapilli tuff origin and minor massive (flow) patches. The foliation planes and lapilli are highlighted by creamy buff to pink carbonate although the entire volcanic interval is strongly pervasively ankeritic. Approximately 20% of the tuffaceous corridor consists of light orange and pink granulated/ medium grained syenite bands to 20cm (average about 10cm), generally with well defined contacts parallel to the fabric @ 45- 60 TCA. In some of these bands, the feldspars are more mauve brown coloured. The sulphide content of the tuffaceous zone is anomalous due mainly to pyrite concentrated in the syenitic bands which average 0.5-1%. The susceptibility is generally low, around 1 and ranging up to 4.45 in places, except between 256 and 257m, a massive (flow?) section where it rises to 13.								
		250.32 250.73 Felsic Dyke - This, the largest of the felsic dikes, is followed by narrower ones at 250.90m (5cm), 252.10m (7cm) and 252.50- 252.83m. The attitude of the contacts, most of them irregular/ wavy, varies for these dikes as follows from upper to lower: 40/ 55 TCA; 60/ 45 TCA and pinching together; 60/ 40 TCA; and, 35/ 40 TCA. All are massive, brick orange coloured, fine grained, and well fractured with ankerite fillings. Mineralization averages approximately 1% as coarse pyrite grains; MS values are <1.0.								
258.70	262.24	LAPILLI TUFF	22059	258.70	260.00	1.30	0.5	.004	.000	135
		The change to lapilli tuff was arbitrarily taken at a point where the lamellar/ lensoid texture became more prominent than straight foliation and the colour of the protolith changed to predominantly buff to creamy beige. The flattened lensoid shapes were interpreted as fine stretched fragments/ lapilli. Towards the end of the interval they become more consistently creamy beige coloured indicating a more felsic composition. MS values in the upper half of the interval range between 3.0 and 10.0 whereas the lower section averages about 0.35. Approximately 0.5% sulphides are disseminated throughout or streaked along the fabric planes (55- 60 TCA). The trailing contact with the green carbonate is sharp, natural, rolling @ 55 TCA.	22060	260.00	260.94	.94	TR	.006	.000	211
			22061	260.94	261.48	.54	1	.006	.000	206
			22062	261.48	262.24	.76	0.5	.017	.000	597
262.24	266.30	GREEN CARBONATE ZONE CARBONATED ZONE	22063	262.24	263.00	.76	0.5	.001	.000	22







From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
323.63	335.00	MUDSTONE	22077	330.69	330.96	.27	0.5	tr	.000	3
<p>The hole ends with a thick sequence of finely laminated/ bedded mudstones that are interbedded with thicker beds and lenses of very fine grained greywacke. For 3.5m up hole from the contact, the wacke is very fine grained and approaches the mudstone texture, however the actual contact was taken at an abrupt change from a gritty lense to aphanitic mudstone @ 53 TCA. Bedding attitudes are somewhat variable but cluster around 50 TCA with local minor contorted bands as at 330.45 &amp; 332.13m. Top indications are confusing with some graded bedding, scouring, rip up clasts, flame textures and mud cracks? indicating tops up hole and others, tops down. Colours of the host indicate, in a general sense, the relative grain sizes with the light yellow olive bands being the finest/ aphanitic grained, and the dark to medium olive grey ones, slightly coarser. The yellowish caste is imparted by fine sericite and carbonate in the matrix. A section between 329.57 and 330.41m contains crosscutting lenses and dikelike bands of black speckled fragments and eroded crystals, possibly formed by the coarse clastic sediment slumping into the mudstone and breaking it up and infilling around the rip up clasts. At 331.57m, a very fine jasper grain was identified, thereby confirming the change from a tuffaceous environment to sedimentary.</p> <p>The changes in colour are not apparently related to alteration associated with structures or veining since there is virtually none. The few veins cutting the host are ankeritic as is the carbonate in the matrix. MS values are consistently below 0.40, most of them falling below 0.20. The sulphide content remains nil to trace; local anomalous concentrations occur in dull white ankerite quartz veins as at 330.80- 330.85m (7%/5cm @ 45 TCA).</p> <p>326.01 326.02 Fault Zone - The only significant structure is this Mud Fault @ 45 TCA that is characterized by a 4mm mud seam with a few parallel chlorite slips and no associated alteration.</p> <p>335.00 335.01 End of hole - The hole ends in the mudstone unit.</p>										

QUEENSTON MINING INC

Drill Hole: AK-03 '7

DIAMOND DRILL HOLE RECORD

Page: 1 of 14

Property: AMALGAMATED KIRKLAND  
 Northing: 10140.00  
 Easting: 8600.00  
 Elevation: 318.00

*** Dip Tests ***			*** Dip Tests ***		
Depth	Azi.	Dip	Depth	Azi.	Dip
6.0		-71.0	270.0		-63.5
90.0		-67.5	360.0		-61.0
180.0		-67.0	450.0		-58.0

Date Started: November 28, 2003  
 Date Completed: December 3, 2003

Collar Azimuth (Grid) .00  
 Collar Dip: -72.00  
 (0 Degrees Grid equals 341 degrees True)  
 Hole Length: 470.00

Drilled by: Heath and Sherwood  
 Core Size: NQ  
 Material left in hole: NX CASING  
 Core Location: Upper Canada Site 1  
 Logged by: FR Ploeger

Date Printed: 19 Apr, 2004



From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
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SUMMARY LOG

.00	5.00	OVERBURDEN
5.00	59.42	GREYWACKE CONGLOMERATE
59.42	82.76	GREYWACKE
82.76	115.90	CONGLOMERATE GREYWACKE
115.90	120.50	FAULT ZONE BROKEN BLOCKY CORE
120.50	125.00	CONGLOMERATE GREYWACKE
125.00	188.00	GREYWACKE
188.00	262.40	TRACHYTE AGGLOMERATE TUFF
262.40	302.55	TRACHYTE TUFF
302.55	308.45	FAULT ZONE CARBONATED ZONE
308.45	356.30	GREYWACKE
356.30	369.35	CONGLOMERATE
369.35	374.45	TRACHYTE
374.45	470.00	TRACHYTE AGGLOMERATE



42A01NE2063

2.28405

TECK

070

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
.00	5.00	OVERBURDEN								
<p>The hole, collared at the south base of an outcrop ridge parts of which had previously been stripped about 300m to the northwest, was designed to test the downward extent of a narrow high grade vein system intersected in hole AK-03-05 and previous holes drilled by Battle Mountain/ Cyprus.</p>										
5.00	59.42	GREYWACKE CONGLOMERATE								
<p>The upper portion of the hole to 19.50m, is well broken along numerous weak slips that follow, or cut, the core axis at low angles. When taken in conjunction with near surface weathering and fracturing, they have combined to cause the broken ground with an estimated RQD of 30 through this upper 14.5m.</p>										
<p>The protolith over this entire interval, although well altered and deformed, appears to comprise a fine grained to gritty sediment (greywacke) containing local gritty and pebbly lenses and the odd fine trachytic fragmental. Overall, the wacke is strongly bleached to a light orange/ yellow/ pinkish grey colour with local patches to several metres that are more medium greyish orange/ pink or pinkish green depending on the composition and degree of alteration of the host. It is fine grained but speckled with slightly coarser chips/ grit particles that often occur as bands or lenses sometimes grading into pebbly horizons as from 6.00- 13.00m. The grit and pebbles are a polymict mix of trachyte, sediments, volcanics and porphyries of varying grain sizes along with the rare, but identifiable, red jasper clasts. Pebbles average about 1cm in length but range as high as 6cm. A fine dark green speckling/ flaking in certain finer grained zones (eg 37.50m) results chloritization of mafic grains/ gritty particles. Clearly defined bedding attitudes are difficult to identify because of the degree of deformation, however, the alignment/ imbrication of some clasts and certain lenses of grit indicate bedding angles of 30- 40 DTCA.</p>										
<p>As mentioned, the alteration, consisting of strong bleaching, carbonatization and sericitization, along with a moderate tectonic fine foliation overprint, has masked many of the original characteristics of the protolith. Despite the strong alteration, veining is minimal, consisting of 1-2% buff white ankerite stringers and patchy veins to 2cm as well as very fine spidery to thready veinlets and shreds. Most of the veining is concentrated in the walls of weak faults/ slips or in stringer zones; quartz is minimal except as noted below. The composition of the carbonate in the veining and that pervasively invading the matrix is ankerite. Mineralization, trace overall, consists of rare, widely scattered fine pyrite (py) through the matrix and in fractures. The magnetic susceptibility (MS) gently undulates within a low range of 0.13 to 0.34, with local lower and higher regimes that may be related to slight variations in the composition of the host. Sampling reflects slight increases in the veining or mineralization and is generally broken out below.</p>										
13.65	16.05	Trachytic								
<p>- Visually, this interval appears to comprise a pebbly</p>										



From To  
(m.) (m.)

## Geology

Sample From To Len Sul AU AU1 AU2  
No. (m.) (m.) (m.) % OZ/T OZ/T ppb

lense in a fine grained matrix in which most of the clasts are variably pink/ creamy orange coloured, possibly trachytic in composition. Coincident with the start of this interval, the MS values jump to an elevated level of 0.60- 0.70; therefore, it is interpreted as a pebbly trachytic tuff unit.

23.20 24.20 Fault Zone - The fault here mirrors the slips near the start in that it trends along, and at low angles, to the core axis. It does not appear to be very strong but the lower half contains a 1cm mud gouge along the structure.

27.50 28.30 Carbonated Zone - The host is cut by a series of irregular buff white carbonate stringers and veins (20%) to 2cm that cut the core at low angles (to 20 DTCA). Some veins are lined with a thin coating of chlorite but overall, they do not appear to be related to any significant structure and are not mineralized.

45.30 46.50 Greywacke - A change in colour to light streaky green suggests a decrease in the intensity of the alteration through this gritty wacke which contains a few red jasper chips. It begins on a curved chlorite slip @ 12 DTCA and ends on a 0.5cm gouge fault @ 30 DTCA.

59.35 59.42 Fault Zone - The fault here consists of a moderately strong lime green, sericite shear structure @ 40 DTCA with mud on some of the slips. It is preceded by typical light green pink altered gritty wacke that is mineralized with slightly anomalous (<0.5%) fine disseminated py. There is no quartz veining associated with the fault but it does seem to mark a change in host rock texture.

59.42 82.76 GREYWACKE

At the fault described above, the protolith becomes creamy beige coloured with local yellowish and greenish washes and dark green chlorite/ amphibole? streaks, patches and grains that resemble stretched/ foliated clasts. There is a penetrative weak to moderate foliation fabric trending @ 30- 40 DTCA along which the green streaks and lighter massive beige bands/ beds? are aligned. Evident, at 64.20, 72.40- 73.45, 74.70, and 76.40- 78.80m, are coarser gritty lenses characterized by the dark green- green grey streaking rather than the polymict lenses described previously. Also intercalated with the fine grained, granular textured wacke and gritty lenses, are very fine grained, creamy beige coloured, cherty?/ silty lenses/ beds (71.34, 75.50, 79.40, and 82.25m) that parallel the weak fabric @ 41 DTCA.

MS values begin at 0.08 and gradually rise to a narrow band of 0.15- 0.21, with a short interval of 0.22- 0.27 between 71.30 and 75.45m which generally corresponds with the fragmental zone and ends on a very fine grained, 20cm wide, creamy beige, cherty layer. The matrix remains strongly ankeritic as are the 2% dull white carbonate veinlets and chlorite lined gashes that cut the host. Mineralization, consisting of very fine py, amounts to trace

87514	59.85	60.80	.95	TR	tr	.000	3
87515	64.80	65.95	1.15	TR	nil	.000	nil
87516	74.40	75.75	1.35	TR	.001	.000	21
87517	78.25	79.50	1.25	TR	tr	.000	7

From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		overall with local minor/ narrow anomalous zones of <<0.5% over 5-10cm. Some of these zones and areas of slightly enriched veining were spot sampled but not necessarily broken out separately.								
		78.67 78.77 Fault Zone - Similar to the leading fault to the interval, it is crushed and moderately sericitic @ 40 DTCA with very fine thready yellow shear planes. There is no accompanying veining or mineralization.								
82.76	115.90	CONGLOMERATE GREYWACKE	87518	115.30	116.45	1.15	TR	.001	.000	34
		Through a gradational contact, the core rolls into a unit in which there is a gradual increase in the pebble content and MS values with a corresponding decrease in the intensity of alteration. The pale creamy beige colour gives way to a medium grey to greenish grey while the wacke becomes pebbly to conglomeratic in places. The clasts are polymict, although jasper chips are rare, and occupy approximately 20% over the upper 12m, decreasing to 1-3% over the remainder. Individual pebbles range up to 9cm in the leading conglomeratic zone but are generally much smaller, resembling grit, lower in the interval. The wacke is more massive looking, having lost the weak to moderate foliation fabric from above, but gaining a weak sporadic crushing that is highlighted by 1-2% fine white carbonate shreds and gashes. This carbonate, as well as that which pervasively invades the matrix, is strongly ankeritic. There is no anomalous mineralization associated with the fracturing, the sulphide content remains trace. As mentioned, the MS values rise dramatically to 96.80m, where they undulate within a range of 2.29-12.7, averaging about 6.00. They then drop to a lower platform clustering around 0.60 but ranging as low as 0.35 and as high as 1.24 to 111.20m before moving back into the higher range that spikes at 117.0 on a series of 1-2mm laminae/ trains of magnetite @ 16 DTCA. This implies that the other higher values result from anomalous fine magnetite in the matrix.								
		86.09 86.10 Fault Zone - This is a weak chlorite carbonate crush fault that cuts the core @ 23 DTCA.								
		114.95 115.30 Broken Blocky Core - The core is broken into small pieces and very fine chips with no obvious structure present. It may represent a sympathetic feature related to the main fault immediately below.								
115.90	120.50	FAULT ZONE BROKEN BLOCKY CORE	87519	116.45	117.85	1.40	TR	nil	.000	nil
		The main fault zone begins with a leading chloritic shear @ 20 DTCA that ends the pebbly wacke and introduces a grungy light to medium greyish orange altered greywacke that persists through the zone. Except for an intact section over 55cm at the start, the core was recovered as small pieces and chips with gouge/ finely ground gravelly intervals over 30cm at 116.60 and 120.35m which combine to form the core of the fault zone. Determining the orientation of the FAZ is difficult since the FAZ is so badly broken up (RQD	87520	117.85	119.00	1.15	TR	nil	.000	nil
			87521	119.00	119.80	.80	TR	.001	.000	31
			87522	119.80	120.60	.80	TR	.001	.000	34



From (m.)	To (m.)	Geology	Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
		Although the walls are moderately altered and there are a few additional ragged veinlets over another metre down hole, mineralization amounts to trace.								
149.45	149.85	Fault Zone - This appears to be weaker version of the fault at 131.50m, that is characterized by two parallel chlorite carbonate slips @ 10 DTCA containing a jumble of fragmented carbonate and altered host rock. Only a few scattered py grains were noted in the zone.								
153.75	154.35	Quartz Vein Zone - It seems that the attitudes of the structures in this unit all cut the core at similar attitudes. The structure represents a quartz breccia fault @ 12 DTCA in which angular wacke fragments are encased in a white quartz vein. A second weaker quartz breccia vein (@ 15 DTCA) with minor chloritic fractures cuts the host lower down at 156.50-157.00m. Both structures/ veins are unmineralized.								
168.00	168.02	Fault Zone - This is a narrow weak chlorite carbonate shear fault @ 30 DTCA that contains trace fine py cubes.								
176.40	176.46	Quartz-Carbonate Vein Zone - This is a streaked patchy vein @ 58 DTCA comprised of dull grey quartz, pink and white carbonate, yellow green sericite and blood red hematite which contains a few specks of py.								
181.60	182.10	Conglomerate - The pebbly lense here contains a variety of clasts, but, standing out amongst all of these are a few bright emerald green fuchsitic ones.								
187.70	188.00	Fault Zone - A strong shear sericite chlorite fault @ 10/ 15 DTCA marks the end of the thick wacke unit and the low MS values. The fault is preceded by a metre of moderate shearing/ fracturing but only trace fine py.								
188.00	262.40	TRACHYTE AGGLOMERATE TUFF								
		Immediately below the FAZ, the magnetic susceptibility jumps into a much higher range, fluctuating between lows of 0.17 to highs of 22.0 but clustering around 6.00. Coincident with this rise is a subtle change, at least over the upper 19m or so to 207.00m, to a mainly tuffaceous host containing a few scattered clasts and pebbly/ clast rich horizons. This upper part is characterized by light pinkish to creamy grey and greyish beige colours that grade back and forth into one another, fine grain size, and clasts that are generally subangular in shape rather than rounded as in the preceding pebbly lenses, and that are dominated by pink colours and syenitic/ trachytic compositions. The MS values begin at 0.63, rising quickly to 16.9 in a fragmental horizon that ends around 196.50m, dropping to a trough of 0.17- 0.28 in a fine grained, massive, tuffwacke section to 207.00m, before rising to the higher range again in the main agglomerate	87535	203.00	203.60	.60	TR	tr	.000	17
			87536	212.05	212.55	.50	TR	.001	.000	21
			87537	221.45	222.00	.55	TR	nil	.000	nil
			87538	222.00	223.25	1.25	TR	nil	.000	nil
			87539	223.25	224.45	1.20	TR	tr	.000	7
			87540	224.45	225.20	.75	TR	tr	.000	9
			87541	225.20	226.35	1.15	TR	nil	.000	nil
			87542	226.35	226.90	.55	TR	nil	.000	nil
			87543	237.35	238.15	.80	TR	.001	.000	27
			87544	238.15	238.80	.65	TR	.001	.000	21
			87545	238.80	239.65	.85	TR	tr	.000	2
			87546	250.95	252.20	1.25	TR	tr	.000	10
			87547	262.00	262.50	.50	TR	tr	.000	7

From To  
(m.) (m.)

## Geology

Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
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unit. Contacts between clast rich and tuffaceous zones are gradational into one another.

At about 207.00m, the colour darkens to medium green grey and clasts begin to form a greater percentage of the core, say an average of 20%. Most are various shades of light to medium pink, greyish pink, grey or grey green in colour and range up to 15cm but average about 1-3cm. Also included in the clastic component are porphyritic fragments and feldspar crystals eroded from the syenitic/ trachytic terrain, but, no jaspers. It is the medium green grey, fine grained matrix that determines the overall colour of the host, which, notably, does not appear to contain any red jasper grains either. MS values seem to average around 6.00 to about 224.30m at which point they drop to a low range of 0.29 to 0.54 to 230.00m and then rise quickly to 23.5 within 1.5m before dropping down to 0.34 at 234.00m. Over the next few metres the susceptibilities again rise, peaking at 23.1, but averaging around 14.0 through a much darker phase of trachytic agglomerate that is broken out separately below. All through the various phases, the matrix remains moderately ankeritic, and veining, consisting of a few scattered wider dull white carbonate (quartz) veins to 3cm along with fine streaks, veinlets and gashes of ankerite, totals approximately 2%, concentrated mainly at the start. Mineralization remains weak throughout, occurring as trace fine py within the veins and their alteration halos.

203.24 203.44 Carbonated Zone - A series of dull white ankerite stringers to 1cm @ 32 DTCA form 25% of the interval. The veins contain a few isolated splashes of cp, are roughly centred on a zone of moderate alteration from 200.50- 207.00m, and exhibit lower MS values (0.21- 1.08).

212.18 212.35 Quartz-Carbonate Vein Zone - The interval contains two bounding dull white carbonate veins to 3cm with a central 1.5cm dull pink quartz vein, all trending at approximately 60 DTCA. The veins are lined with lime green sericite but do not contain any significant wall rock alteration and only trace sulphides.

221.70 221.78 Quartz-Carbonate Vein Zone - The core of this vein zone contains alternating bands of dull white carbonate, pink altered host, and sericite streaking @ about 60 DTCA with no visible sulphides.

225.45 226.65 Agglomerate (altered) - Three distinct carbonate +/-sericite +/-quartz alteration zones/ structures cut the core through this interval. Leading the interval is a 35cm wide, grungy looking, streaky light pink to beige to grey green, fractured/ foliated zone centred on a 1cm dirty white ankerite vein @ 35 DTCA that cuts weakly altered host. This is followed by a central weak zone from 225.40- 225.60m which is characterized by an upper weak sericite carbonate alteration slip @ 60 DTCA and several dull white ankerite veins to 1cm to the end. Finally, the interval ends on a 1.5- 3cm wide, pale pink















From To  
(m.) (m.)

## Geology

Sample No.	From (m.)	To (m.)	Len (m.)	Sul %	AU OZ/T	AU1 OZ/T	AU2 ppb
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- 447.00 451.35 Tuff Agglomerate Through this segment, the MS values rise slightly to a level around 0.40 and the colour changes to medium pink/ maroon grey although there is no perceptible source or reason for this change.
- 451.35 465.00 Agglomerate - The clast content increases to about 20% over the interval and the colour changes back to the more typical medium/ light olive green. Clasts are various shades of medium to dark green grey with the odd green carbonate altered one, elongate, subangular and appear unsorted and aligned in the plane of a weak foliation fabric and bedding @ 40 DTCA. A pale/ weak yellow wash to the colour is caused by a network of fine sericitic microfractures.
- 463.50 465.00 Fault Zone - The host is mildly to moderately crushed into a spider like/ cataclastic pattern down the core axis with fractures filled by black chlorite. The structure seems to be related to a mud lined chlorite fault @ 35 DTCA that ends the zone. Mineralization is trace. Corresponding with this fault, the colour of the host changes to medium/ dark maroon grey over the following 3m, gradually lightening to the normal medium olive grey by the end of the hole.
- 470.00 470.01 End of hole - The hole ends in trachyte agglomerate as described at 451.35m.



Date: 2004-OCT-07

GEOSCIENCE ASSESSMENT OFFICE  
933 RAMSEY LAKE ROAD, 6th FLOOR  
SUDBURY, ONTARIO  
P3E 6B5

QUEENSTON MINING INC.  
1116-111 RICHMOND STREET WEST  
TORONTO, ONTARIO  
M5H 2G4 CANADA

Tel: (888) 415-9845  
Fax: (877) 670-1555

**Submission Number:** 2.28405  
**Transaction Number(s):** W0480.01413

Dear Sir or Madam

**Subject: Approval of Assessment Work**

We have approved your Assessment Work Submission with the above noted Transaction Number(s). The attached Work Report Summary indicates the results of the approval.

At the discretion of the Ministry, the assessment work performed on the mining lands noted in this work report may be subject to inspection and/or investigation at any time.

If you have any question regarding this correspondence, please contact STEVEN BENETEAU by email at [steve.beneteau@ndm.gov.on.ca](mailto:steve.beneteau@ndm.gov.on.ca) or by phone at (705) 670-5855.

Yours Sincerely,



Ron C. Gashinski  
Senior Manager, Mining Lands Section

**Cc:** Resident Geologist

Queenston Mining Inc.  
(Claim Holder)

Wayne Russell Benham  
(Agent)

Assessment File Library

Queenston Mining Inc.  
(Assessment Office)





Date / Time of Issue: Thu Oct 07 08:55:46 EDT 2004

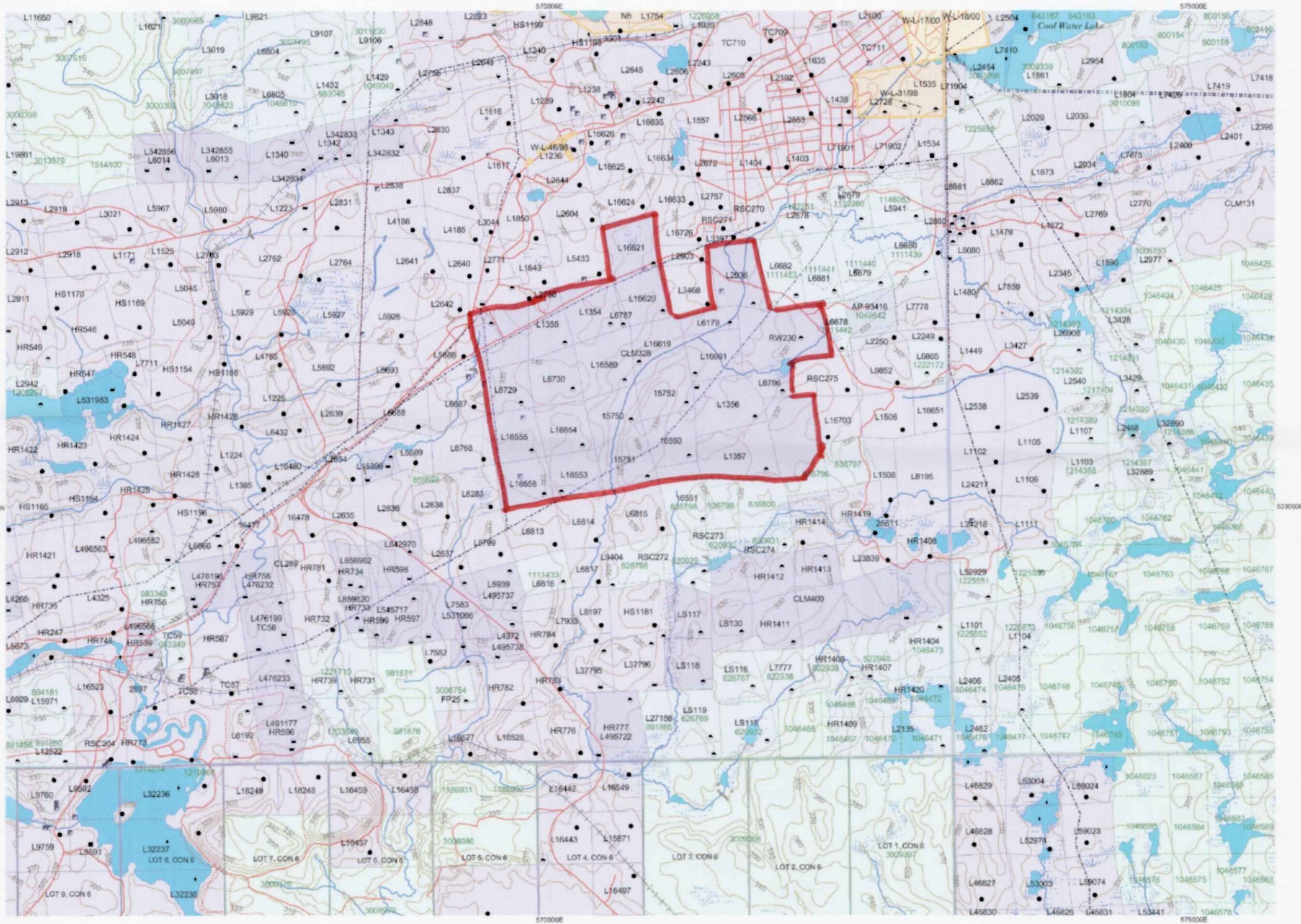
TOWNSHIP / AREA  
TECK

PLAN  
G-3719

ADMINISTRATIVE DISTRICTS / DIVISIONS

Mining Division  
Land Titles/Registry Division  
Ministry of Natural Resources District

Larder Lake  
TIMISKAMING  
KIRKLAND LAKE

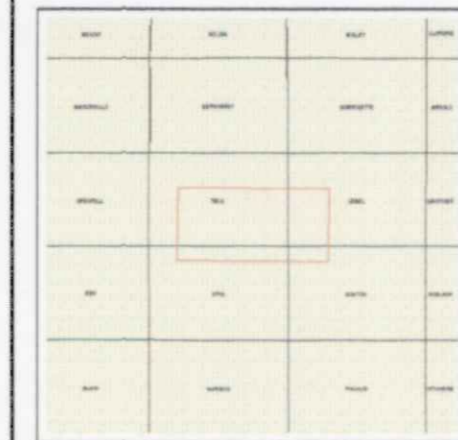


TOPOGRAPHIC

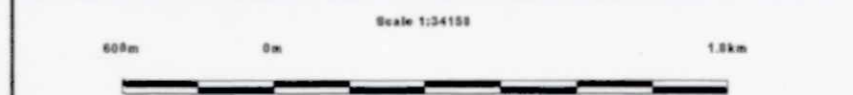
- Administrative Boundaries
- Township
- Concession Lot
- Provincial Park
- Indian Reserve
- Cliff, Pit & Pile
- Contour
- Mine Shafts
- Mine Headframe
- Railway
- Road
- Trail
- Natural Gas Pipeline
- Utilities
- Tower

Land Tenure

- Freehold Patent
  - Surface And Mining Rights
  - Surface Rights Only
  - Mining Rights Only
- Leasehold Patent
  - Surface And Mining Rights
  - Surface Rights Only
  - Mining Rights Only
- Licence of Occupation
  - Uses Not Specified
  - Surface And Mining Rights
  - Surface Rights Only
  - Mining Rights Only
- Land Use Permit
- Order In Council (Not open for staking)
- Water Power Lease Agreement



- Mining Claims
- Filed Only Mining Claims
- LAND TENURE WITHDRAWALS
  - 1254 Areas Withdrawn from Disposition
  - Mining Acts Withdrawal Types
    - Surface And Mining Rights Withdrawn
    - Surface Rights Only Withdrawn
    - Mining Rights Only Withdrawn
  - Order In Council Withdrawal Types
    - Surface And Mining Rights Withdrawn
    - Surface Rights Only Withdrawn
    - Mining Rights Only Withdrawn
- IMPORTANT NOTICES



LAND TENURE WITHDRAWAL DESCRIPTIONS

Identifier	Type	Date	Description
W-L-14/96	Wam	Apr 17, 1996	SEC.35 W-L-14/96 17/04/96 M+S 195150
W-L-17/00	Wam	May 27, 2000	SEC.35 W-L-17/00 2000/05/27 S+M 195150
W-L-18/00	Wam	Apr 27, 2000	SEC. 35 W-L-18/00 2000/04/27 M+S 195150
W-L-31/98	Wm	Aug 11, 1998	SEC. 35 W-L-31/98 11/08/98 MRO
W-L-46/96	Ws	Oct 27, 1996	SEC.35 W-L-46/96 OCT 27/96 S.R.O. 195150

IMPORTANT NOTICES  
Areas under which special regulation, limitations or conditions exist that affect normal prospecting, staking and mineral development activities.

Those wishing to stake mining claims should consult with the Provincial Mining Recorders' Office of the Ministry of Northern Development and Mines for additional information on the status of the lands shown hereon. This map is not intended for navigational, survey, or land title determination purposes as the information shown on this map is compiled from various sources. Completeness and accuracy are not guaranteed. Additional information may also be obtained through the local Land Titles or Registry Office, or the Ministry of Natural Resources.

General Information and Limitations  
Contact Information:  
Provincial Mining Recorders' Office  
Wilket Green Miller Centre 933 Ramsey Lake Road  
Sudbury ON P3E 6B5  
Home Page: www.mndm.gov.on.ca/MNDMMINESLANDS/mismpnpgs.htm

This map may not show unregistered land tenure and interests in land including certain patents, leases, easements, right of ways, flooding rights, licences, or other forms of disposition of rights and interest from the Crown. Also certain land tenure and land uses that restrict or prohibit free entry to stake mining claims may not be illustrated.

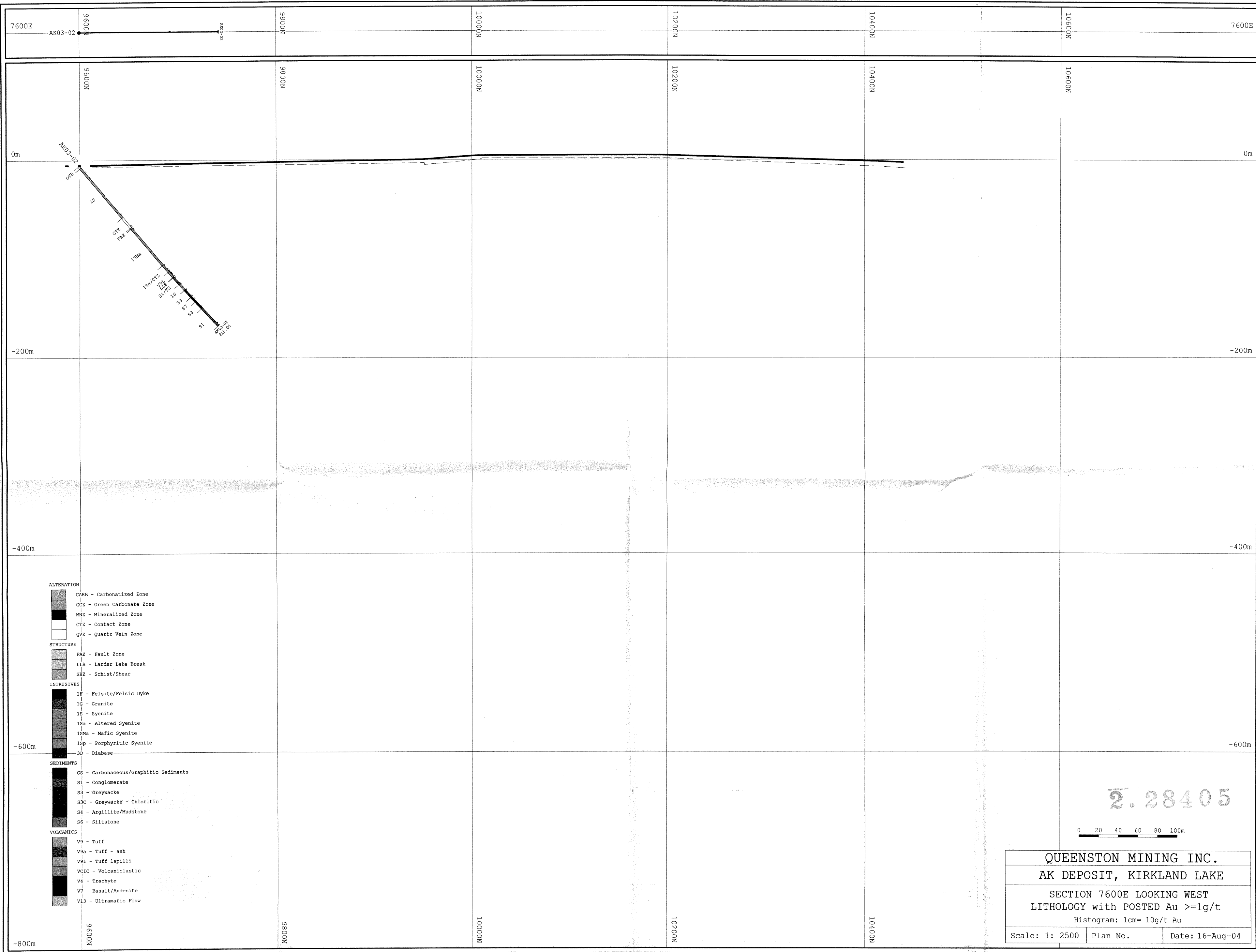
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PDRILL, ASSAY











- ALTERATION**
- CARB - Carbonatized Zone
  - GCZ - Green Carbonate Zone
  - MNZ - Mineralized Zone
  - CTZ - Contact Zone
  - QVZ - Quartz Vein Zone

- STRUCTURE**
- FAZ - Fault Zone
  - LLB - Larder Lake Break
  - SHZ - Schist/Shear

- INTRUSIVES**
- 1F - Felsite/felsic Dyke
  - 1G - Granite
  - 1S - Syenite
  - 1Sa - Altered Syenite
  - 1SMa - Mafic Syenite
  - 1Sp - Porphyritic Syenite
  - 3D - Diabase

- SEDIMENTS**
- G5 - Carbonaceous/Graphitic Sediments
  - S1 - Conglomerate
  - S3 - Greywacke
  - S3C - Greywacke - Chloritic
  - S4 - Argillite/Mudstone
  - S6 - Siltstone

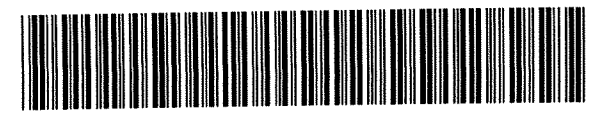
- VOLCANICS**
- V9 - Tuff
  - V9a - Tuff - ash
  - V9L - Tuff lapilli
  - VCIC - Volcaniclastic
  - V4 - Trachyte
  - V7 - Basalt/Andesite
  - V13 - Ultramafic Flow

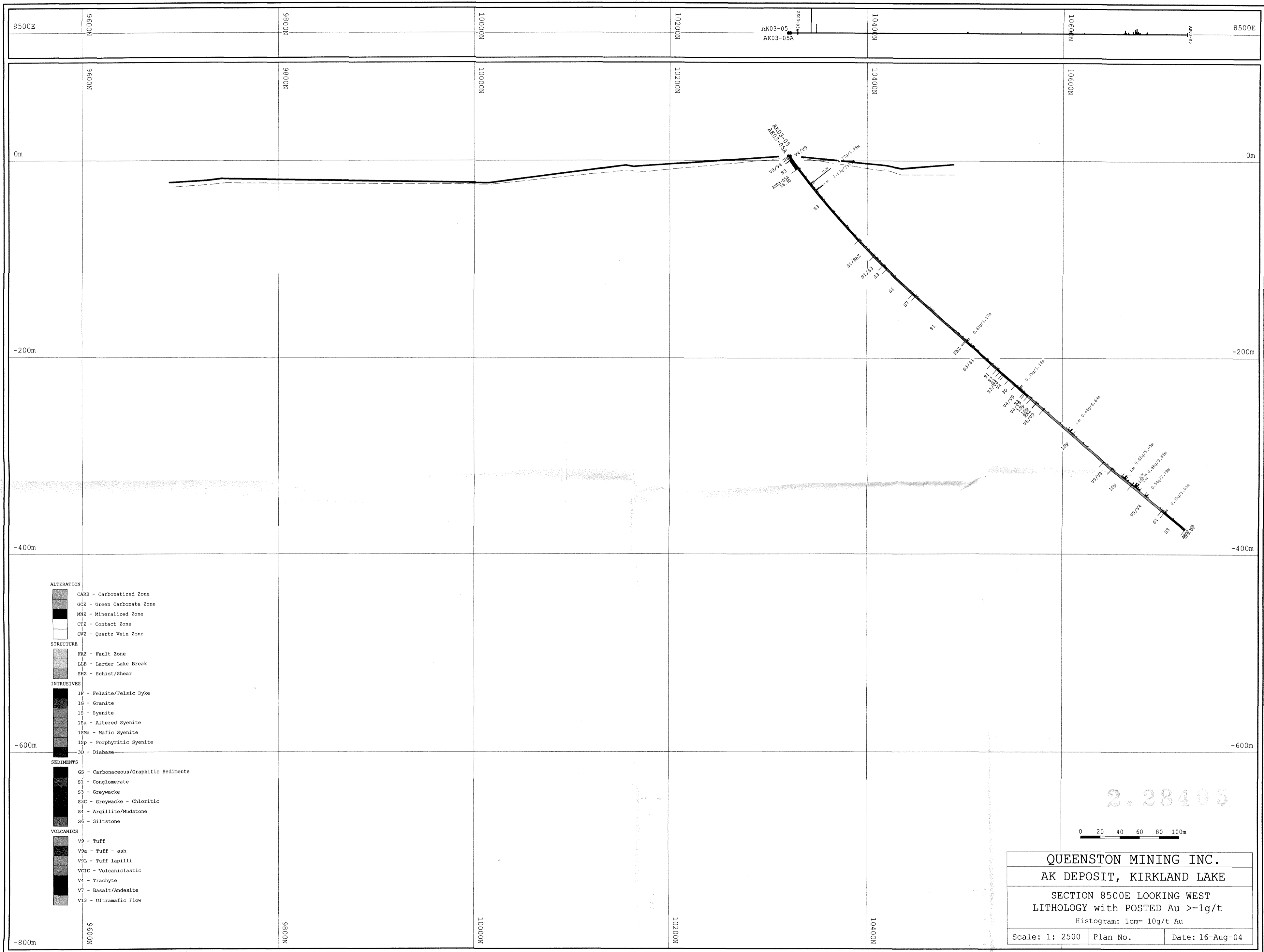
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0 20 40 60 80 100m

QUEENSTON MINING INC.  
 AK DEPOSIT, KIRKLAND LAKE  
 SECTION 7600E LOOKING WEST  
 LITHOLOGY with POSTED Au >=1g/t  
 Histogram: 1cm= 10g/t Au  
 Scale: 1: 2500 | Plan No. | Date: 16-Aug-04

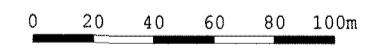
*LB*





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  - IG - Granite
  - IS - Syenite
  - ISa - Altered Syenite
  - ISMa - Mafic Syenite
  - ISp - Porphyritic Syenite
  - 3D - Diabase
- SEDIMENTS**
- GS - Carbonaceous/Graphitic Sediments
  - S1 - Conglomerate
  - S3 - Greywacke
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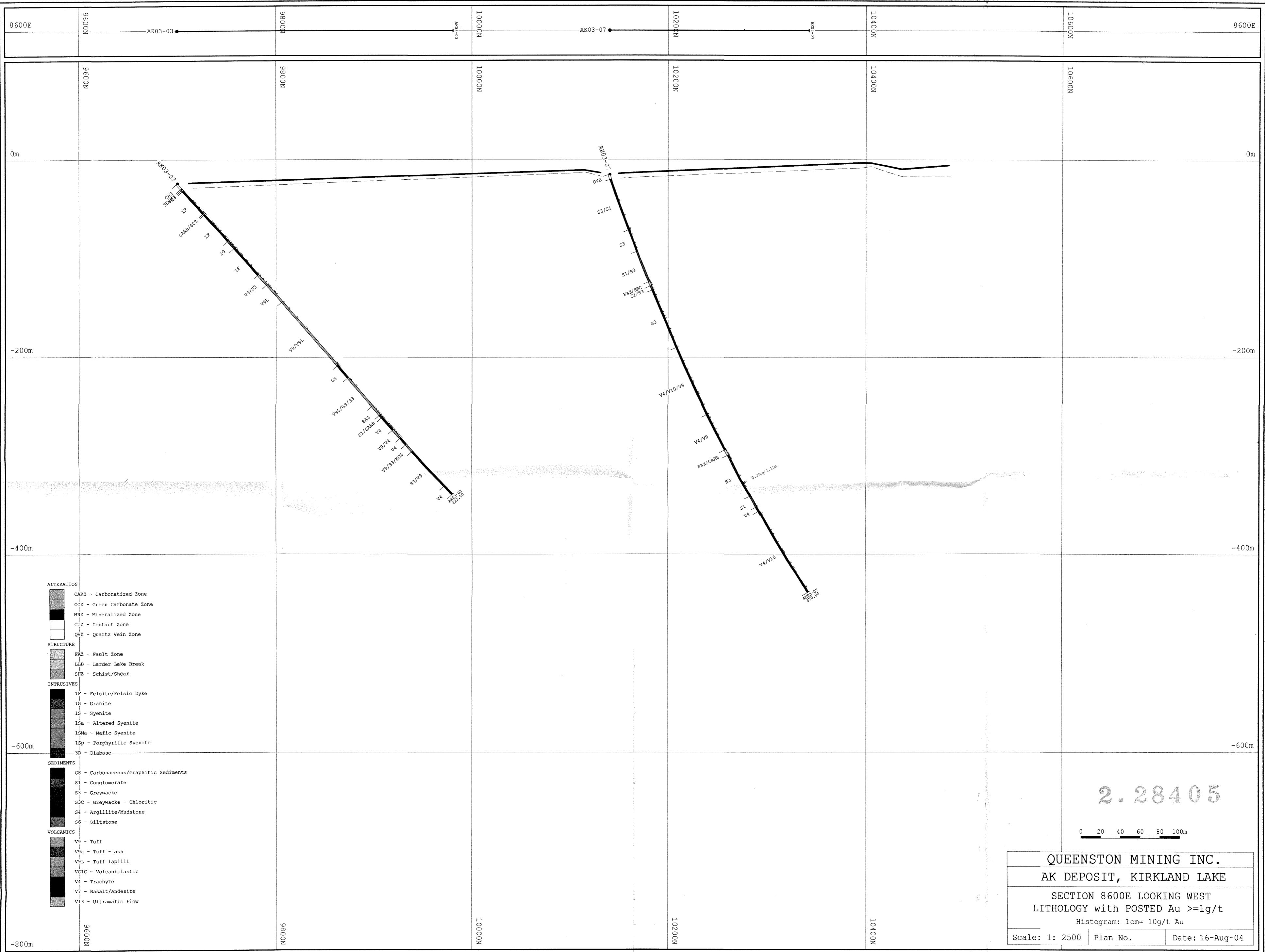
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QUEENSTON MINING INC.  
 AK DEPOSIT, KIRKLAND LAKE  
 SECTION 8500E LOOKING WEST  
 LITHOLOGY with POSTED Au >=1g/t  
 Histogram: 1cm = 10g/t Au  
 Scale: 1: 2500    Plan No.    Date: 16-Aug-04

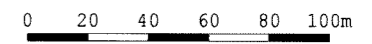
NB





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KB

