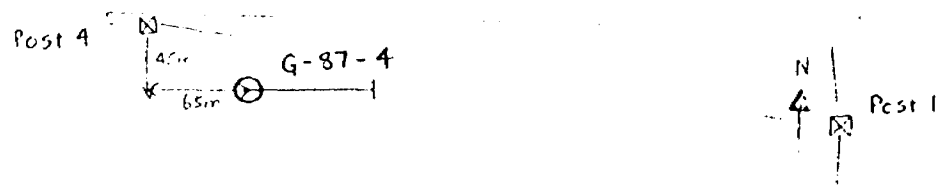
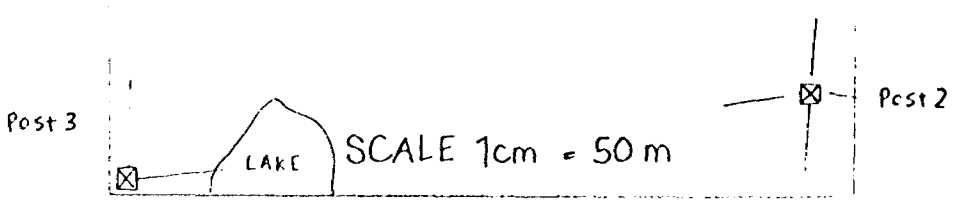
GEORDIE LAKE

COLLAR LOCATION SKETCH



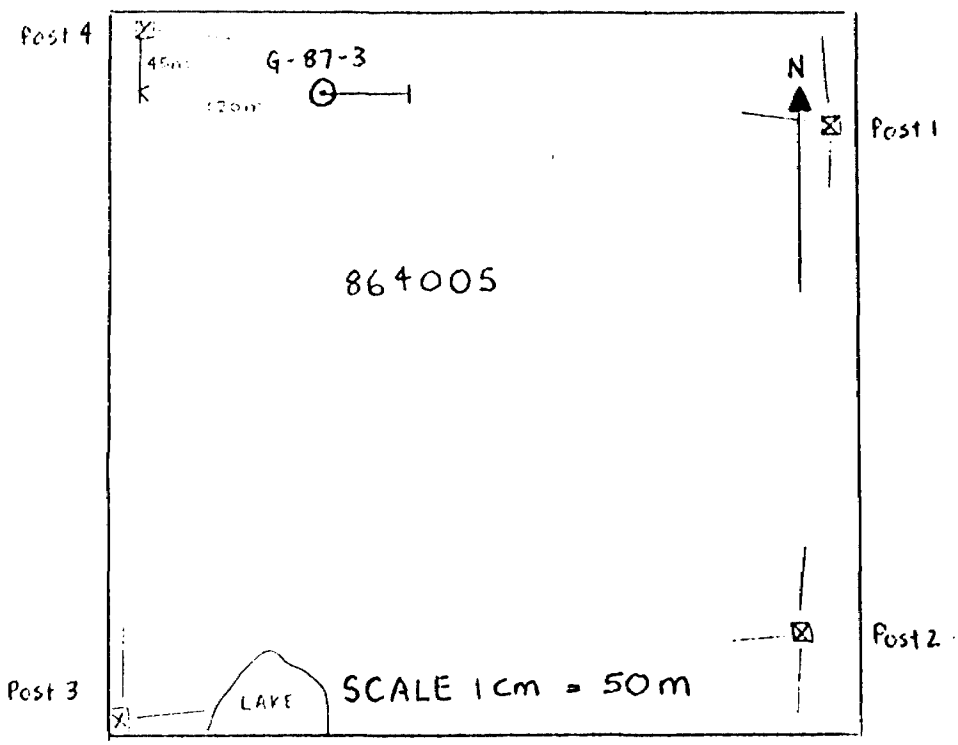
864005



Hole #: G-87-4
Bearing: 090
Dip-Collar: -45
Length: 116.0m

GEORDIE LAKE

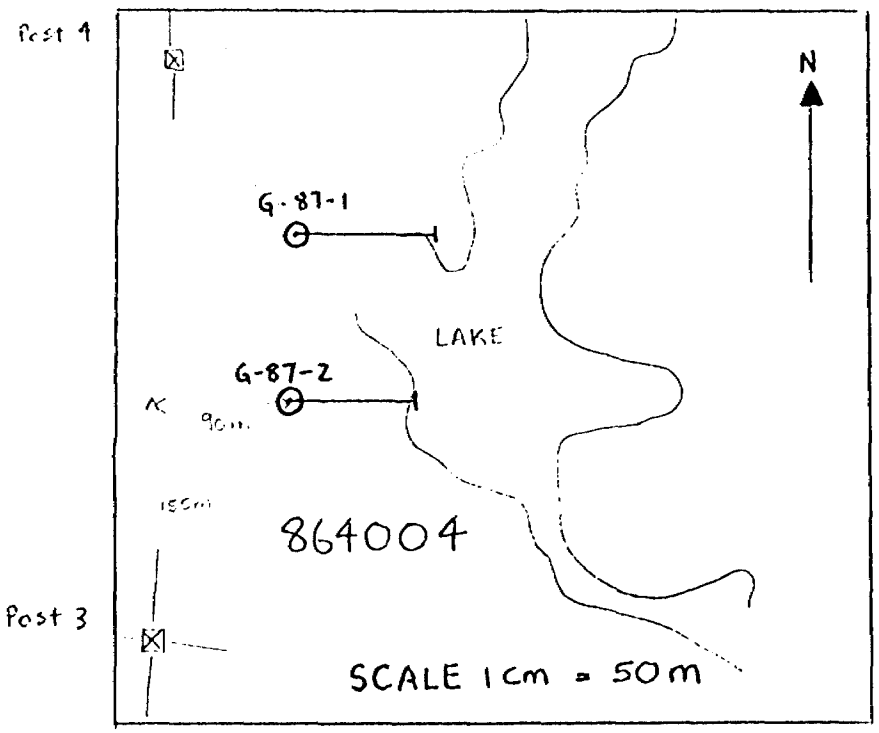
COLLAR LOCATION SKETCH



Hole #: G-87-3
Bearing: 090
Dip-Collar: -45
Length: 80.00m

GEORDIE LAKE

COLLAR LOCATION SKETCH

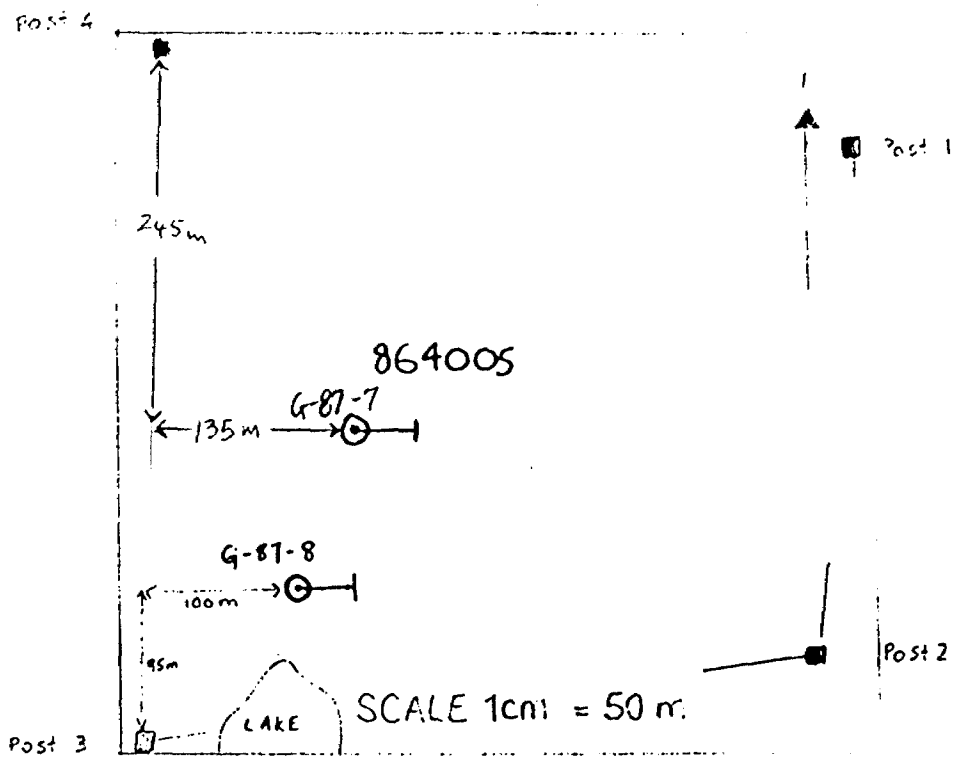


Hole #:	G-87-1
Bearing:	090
Dip-Collar:	-44
Latitude:	16+00S
Length:	125.0m

Hole #:	G-87-2
Bearing:	090
Dip-Collar:	-45
Latitude:	
Length:	118.0m

GEORDIE LAKE

COLLAR LOCATION SKETCH

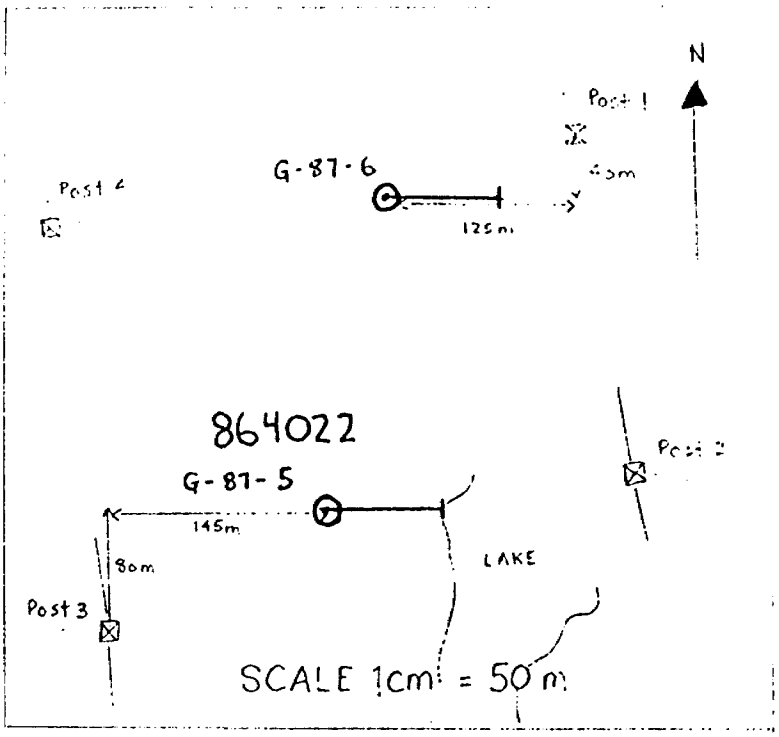


Hole #:	G-87-8
Bearing:	090
Dip-Collar:	-45
Length:	47.80m

Hole #: G-87-7
Bearing: 090
Dip Collar: -45
Length : 61.26m

GEORDIE LAKE

COLLAR LOCATION SKETCH



Hole #:	G-87-5	Hole #:	G-87-6
Bearing:	090	Bearing:	090
Dip-Collar:	-45	Dip-Collar:	-45
Length:	106.39m	Length:	103.00m

ST. JOE CANADA

DIAMOND DRILL HOLE RECORD

Hole No.	6-87-1	Northing	16+00S	Grid Orient		Depth	Dip	Azimuth	Test	Depth	Dip	Azimuth	Test	Started	NOV. 22, 1987	Logged by	A.D. MacTAVISH
Property	GEORDIE LAKE	Easting	3+40W	Grid Azim.		50.0	- 39			125.0	- 37		ACID	Finished	NOV. 24, 1987	Checked by	
Section	16+00S	Elevation		Length (M)	125.0									Drill Co.	FALCON	Core	
Claim No.	864004	Survey N.		Dip-Collar	-44.00									Drill No.		Comments:	
Target	GABBRO/SYENITE CONT.	Survey E.		Comp Bearing	090									Drill For.			

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu ppm

SUMMARY

0.00	1.83	CASING
1.83	30.04	ALTERED HORNBLENDE GABBRO
30.04	53.32	(HORNBLENDE) - PLAGIOCLASE PORPHYRY DYKE - (Possible Lamprophyre)
53.32	54.00	HIGHLY SHEARED AND ALTERED GABBRO
54.00	55.10	POTASSIC ALTERATION ZONE
55.10	59.34	ALTERED MAGNETITE MELAGABBRO
59.34	66.92	ALTERED MAGNETITE GABBRO
66.92	71.14	GABBRO
71.60	81.40	INTERLAYERED (?) GABBRO AND MELAGABBRO (mineralized)
81.40	109.38	ALTERED GABBRO (well mineralized)
109.38	119.12	ALKALI - FELDSPAR QUARTZ SYENITE
.12	123.37	AMPHIBOLE- PLAGIOCLASE PORPHRY DYKE (Lamprophyre ?)

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu ppm
123.37	125.00	ALKALI-FELDSPAR-QUARTZ SYENITE								
125.00	125.00	END OF HOLE								

FROM	TO	DESCRIPTION
0.00	1.83	CASING
1.83	30.04	ALTERED HORNBLENDE GABBRO - green, medium to coarse-grained, sub-ophitic texture, massive, locally fractured and occassionaly sheared - composed of 40% light grey to grey plagioclase laths which are sometimes (5-8%) rimmed by a pinkish potassium feldspar (due to deuteric potassic alteration?), 50-52% hornblende, now mainly altered to actinolite, 8-10% subhedral to euhedral magnetite (possibly titanomagnetite or ilmenite) grains up to 2mm in diameter - trace to <=0.5% very finely disseminated chalcopyrite (cp) and minor pyrrhotite (po) - potassic alteration of plagioclase feldspars to potassium feldspar tends to increase with depth and after 16.15m is characterized by pinkish slightly coarser grained patches where plagioclase has been almost totally altered to K-spar - also an increase in cp/po after 16.15 3.06: narrow shear at 18 degrees to core axis 8.40: irregular fracture at 6 degrees to core axis 11.36: hair thin carbonate filled fracture containing small blebs and some tiny seams of cp
15.90 -	16.15	- shear zone (fault ?) - the gabbro has been highly sheared to a well foliated, friable and crumbly, limonite stained rock. - shear planes are at approx. 10 degrees to the core axis (C.A) - magnetite and some sulphides are smeared along the shear planes (10% mag, <2% weathered sulphides, minor malachite staining) - some sericite observed.
16.15 -	22.00	- slightly to well mineralized with disseminated to coarse blebby cp usually associated with magnetite (ilmenite ?) - mag. usually occurs as partially rimming composite grains with the cp - 3-6% cp - best zone from 19.80 to 22.00 - 5-6% cp

SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu ppm
2001	16.15	17.00	0.85	89	-15	13	982
2002	17.00	18.00	1.00	131	-15	16	1920
2003	18.00	19.00	1.00	101	-15	14	1570
2004	19.00	20.00	1.00	136	-15	9	1840
2005	20.00	21.00	1.00	246	-15	18	2480
2006	21.00	22.00	1.00	321	-15	22	2960
2007	22.00	23.00	1.00	117	-15	9	1180
2008	23.00	24.00	1.00	95	-15	6	526
2009	24.00	24.77	0.77	97	-15	5	565

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu ppm
	24.85 - 30.04	- rapid increase in K-spar rimmed plagioclase and potassic alteration in general - rock initially exhibits 4 to 10cm diameter patches of coarse to very fine-grained pinkish altered gabbro, but is eventually almost pervasively altered and becomes pinkish -green in colour - rimmed grains are very evident - sulphide percentage in this zone is less than in 16.15 - 22.00,usually 1-2% finely disseminated cp (po) with 8-10% grey-black magnetite	2010	25.10	26.00	0.90	40	-15	4	462
			2011	26.00	27.00	1.00	45	-15	6	547
			2012	27.00	28.00	1.00	51	-15	5	616
			2013	28.00	29.00	1.00	70	-15	9	851
			2014	29.00	30.00	1.00	74	-15	5	737
	24.77 - 25.10	- sheared and heavily broken zone -some core appears to have been ground up and lost - remnant fragments are quite limonitized and very altered.								
	29.43 - 29.49	- small portion of hornblende - plagioclase porphyry (possible edge of dyke).								
30.04	53.32	(HORNBLENDE) - PLAGIOCLASE PORPHYRY DYKE - (Possible Lamprophyre) - grey to dark grey in colour, massive with a slight to moderate alignment of plagioclase laths (alignment tends to vary down hole from approximately parallel to the C.A to about 25-30 degrees from C.A. near the lower contact) - upper contact is sharp, slightly irregular, appears to be very slightly chilled and is at 1-3 degrees from the C.A. - contact is present over approximately 90 cm of core - lower contact sharp and at between 50 and 55 degrees to core axis - composed of many minerals - the most prominent is the large plagioclase phenocrysts - light grey in colour, lath shaped, subhedral to euhedral in form, twinned, locally zoned and between 2mm and 5cm in length - plagioclase comprises 50 - 60% of dyke - amphibole is present in much smaller phenocrysts, 3-7mm in diameter, usually altered, dark green in colour and subhedral in form- sometimes altered to actinolite - amphibole content 5-7% in phenocryst form - calcite occurs associated with amphibole and as a very fine-grained constituent within groundmass - an emerald green, fractured, relatively hard mineral is commonly observed associated with feldspar crystals - possibly an epidote mineral? - has some characteristics of olivine? - groundmass is a fine-grained to very fine-grained mixture of amphiboles,									

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu ppm
		calcite, biotite (?) altered plagioclase - locally very fine-grained K-spar - fractures are commonly filled with calcite stringers and plagioclase (both phenocrysts and in groundmass) is potassically altered near these stringers - calcite stringers are commonly deformed								
			2015	30.00	31.00	1.00	31	-15	2	438
			2016	31.00	32.00	1.00	-2	-15	2	172
	41.10 - 41.33	- broken rock due to shearing and fracturing, veining and intense potassic alteration of plagioclase phenocrysts - numerous brecciated fractures are filled with calcite - siderite material - no preferred orientation to fractures								
	46.80 - 47.95	- highly sheared zone - sheared and altered, very friable and fissile, composed of chlorite and actinolite and some carbonate - faint slickensides observed locally - some of shearing is oriented at about 32 degrees to C.A but majority doesn't seem to have a preferred direction- some shears are parallel to core axis								
	47.95 - 50.00	- occassional narrow shears at between 12 and 36 degrees to C.A - majority are between 12 and 18 degrees to C.A. - usually quite chloritic and actinolitic								
	50.43 - 50.60	- broken rock in core								
	52.75 - 53.27	- broken ground - the occassional small bleb of chalcopyrite was observed within this unit - overall << 1% cp,(po)								
53.32	54.00	HIGHLY SHEARED AND ALTERED GABBRO - dark green to greenish black, much secondary amphibole and chlorite - slickensides common - moderately carbonatized - most shears are conjugate in nature at 29 and 126 degrees to core axis, some are filled with narrow carbonate stringers - no sulphides - 10 -12% magnetite								
54.00	55.10	POTASSIC ALTERATION ZONE - gabbro intensely altered, pink in colour								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu ppm
		- alteration decreases with depth and grades into next unit.								
55.10	59.34	ALTERED MAGNETITE MELAGABBRO - dark green to greenish black, fine to medium-grained with 5 to 8mm amphibole oikocrysts - 15-18% greyish plagioclase, 15-25% fine-grained euhedral magnetite, 60 -70% medium grained mafic minerals, mostly altered greenish to black clinopyroxene - generally massive with a few fractures, does not exhibit the characteristic subophitic texture observed from 1.84 to 30.04. 5.00 5.65: a few minor cp blebs and stringers over 3-5cm near narrow carbonate-rich shear at 55.70.								
59.34	66.92	ALTERED MAGNETITE GABBRO - quite similar to 55.10-59.34, however it is medium to coarse grained - contains about 35% greenish grey, sometimes potassically altered plagioclase - occassional very coarse-grained patches where plagioclase content increases to about 45% laths up to 1cm in length - plagioclase content increases gradually with depth to about 45-50% - near lower contact the rock is beginning to develop a sub -ophitic texture 60.41-60.80: very coarse-grained to pegmatitic zone 61.37-62.00: very coarse-grained 62.03-62.11: potassic alteration patches - 4-5cm in diameter 62.30-62.36: intense potassic alteration - slight increase in potassic alteration with depth, overall percentage ranges from 10-15% of rock - occassional altered fracture planes with variable angles to C.A - chloritic and amphibolitic alteration runs 3-5mm thick along fractures - nil to trace very finely disseminated cp and po.								
66.92	71.14	GABBRO - fine-grained, dense and massive, slightly altered rock with 50/50 split of								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu ppm
		light grey to greenish-grey plagioclase and slightly altered clinopyroxene, - 8-10% subhedral to euhedral magnetite grains - occassional calcite and dolomite filled fractures at 38 - 49 degrees to C.A. - vein filled fractures all exhibit 1-2cm wide slightly to moderately potassic alteration halos - some high angle fractures at 5-8 degrees to C.A. (usually uncemented) - upper and lower contacts with coarse to very coarse-grained rocks are relatively sharp over 2 or 3 grain width - possibly this is a fine-grained layer rather than a separate intrusion - upper contact at roughly 68 degrees to core axis - lower contact at roughly 90 degrees to core axis; more diffuse than upper contact; slightly gradational over 3-5cm.							
			2017	70.14	71.14	1.00	25	-15	7	290
71.60	81.40	INTERLAYERED (?) GABBRO AND MELAGABBRO (mineralized) - an alternating sequence of massive very coarse-grained to pegmatitic, sub-ophitic textured, slightly to moderately altered greyish-green gabbro units (or possibly layers) and massive fine to medium-grained, moderately altered, sometimes oikocrystic dark greenish-black melagabbro - contacts are gradational over 5-10 cm - potassic alteration is quite common within the coarser-grained gabbro layers, but it is relatively scarce within the finer-grained melagabbro layers - where alteration occurs the primary plagioclase laths are usually rimmed in pinkish K-spar and occasionally the plagioclase grains are almost totally consumed by the alteration- increases gradually with depth - pyroxenes in both rock types are usually partially altered to green and dark green fibrous amphiboles gabbros: 40-50% altered plagioclase laths up to 2cm in length, 45 -50 % partially altered mafic minerals (mostly very dark green to black clinopyroxene), 5 to 10% magnetite or titanomagnetite occurring in disseminated, <1-2mm, subhedral to euhedral grains melagabbro: 15-30% ocassionally altered plagioclase grains, 10-20% magnetite or titanomagnetite grains, sometimes 3-4 mm in diameter, altered pyroxene and amphiboles 50-74%, up to 1% interstitial greenish apatite								
			2018	71.14	72.14	1.00	62	-15	8	504
			2019	72.14	72.85	0.71	34	-15	10	287

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu ppm
	72.85 - 73.66	- melagabbro	2020	72.85	73.66	0.81	84	-15	6	317
			2021	73.66	74.50	0.84	31	-15	5	262
	74.50 - 78.88	- melagabbro	2022	74.50	75.50	1.00	229	-15	17	534
		- occassional 10-20cm thick coarse to very coarse-grained, potassically altered patches of gabbro	2023	75.50	76.50	1.00	522	40	33	823
			2024	76.50	77.50	1.00	1065	58	39	3250
			2025	77.50	78.19	0.69	667	24	44	3780
			2026	78.19	78.88	0.69	497	28	37	1510
			2027	78.88	79.88	1.00	950	48	52	4700
			2028	79.88	80.47	0.59	1062	43	48	3800
			2029	80.47	81.06	0.59	935	45	56	5290
	81.06 - 81.40	- gabbro to melagabbro - percentage of plagioclase is close to 35% and the rock could be either variety - narrow fractures are quite common - most are cemented by hair thin carbonate stringers, others are uncemented - potassic alteration and uralitization are common as reaction rims along cemented fractures - cemented variety are highly variable in orientation, ranging between 5 degrees to 90 degrees to C.A., with majority between 40 and 70 degrees to C.A. - uncemented fractures generally range between 20 and 28 degrees to core axis - occassional fractures subparallel to core axis.								
		Mineralization : highly variable								
	76.16 - 76.68	- initially quite sporadic and consists of <1% to 2% very finely to finely disseminated cp and po with <1% scattered composite blebs composed of cp/po/mag - some blebs are net - textured in appearance and are 1-2 cm in diameter.								
	76.68 - 81.06	- 2 to 4% small to large (1cm) cp-po-mag blebs - blebs tend to occur within coarser zones (layers)								
	81.06 - 81.40	- 3 to 8% composite cp-po-mag blebs with occassional narrow zones with trace to 3% blebs and disseminations.								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu ppm
81.40	109.38	ALTERED GABBRO (well mineralized) - very similar to gabbro observed between 71.60 to 81.40 except that there are no melagabbro layers - a few areas which are fine to medium-grained rather than coarse-grained to pegmatitic- this is possibly a grain size layering feature similar to that seen in the preceding unit								
			2030	81.06	82.06	1.00	735	31	40	4470
			2031	82.06	83.06	1.00	590	22	34	4990
			2032	83.06	84.06	1.00	538	35	35	4490
			2033	84.06	85.06	1.00	-2	-15	-1	2700
			2034	85.06	86.06	1.00	271	19	20	2560
			2035	86.06	87.06	1.00	250	-15	19	1940
			2036	87.06	88.06	1.00	381	17	22	1190
		88.81 - 89.11 - fine to coarse-grained gabbro	2037	88.06	89.06	1.00	412	22	24	2160
			2038	89.06	90.06	1.00	257	18	11	2350
			2039	90.06	91.06	1.00	261	-15	17	1830
			2040	91.06	92.06	1.00	777	93	33	2450
			2041	92.06	93.06	1.00	848	59	39	2150
			2042	93.06	94.06	1.00	818	44	55	6130
			2043	94.06	95.06	1.00	343	18	24	2530
			2044	95.06	96.06	1.00	607	38	40	3510
			2045	96.06	97.06	1.00	710	46	53	3960
			2046	97.06	98.06	1.00	737	51	56	5520
			2047	98.06	99.06	1.00	685	38	50	4650
			2048	99.06	100.06	1.00	462	29	46	4020
		100.15 - 100.96 - fine to medium-grained very magnetite or ilmenite-rich gabbro - also contains an ilmenite, cp vein 1.0 - 1.5 cm in thickness								
			2049	100.06	101.06	1.00	1488	69	75	19400
			2050	101.06	102.06	1.00	498	29	38	4280
			2051	102.06	103.06	1.00	488	29	42	4300
			2052	103.06	104.06	1.00	987	72	62	6400
			2053	104.06	105.06	1.00	598	28	43	7000
			2054	105.06	106.06	1.00	1751	28	62	5760
		106.36 - 106.64 - fine to medium-grained gabbro								
			2055	106.06	107.06	1.00	1824	49	60	9560
			2056	107.06	107.69	0.63	319	19	33	9770

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu ppm
	107.71 - 109.38	- potassically altered magnetite or ilmenite rich mineralized gabbro, gradational contact over 2 or 3 cm	2057	107.69	108.51	0.82	251	-15	17	5480
		- subophitic texture quite well developed throughout unit	2058	108.51	109.38	0.87	704	39	40	3400
		- fracturing is similar to above unit								
	93.00 - 4.00	- narrow moderately sheared area perpendicular to core axis								
		- magnetite/ilmenite increases with depth to make up 10-20% of rock locally								
		generally varies throughout unit from <2 to 8-10% and occurs finely disseminated, as coarse to very coarse composite blebs comprised of cp, po and mag (ilm ?), as narrow cp stringers, as cp/mag (ilm ?) veinlets, and as irregular, small amoeboid pods of cp, po and mag (ilm ?)								
		magnetite may be either titanomagnetite or ilmenite								
		bornite is observed locally as is covellite (minor)								
		in most instances, the mafic minerals in contact with or in close proximity to sulphide blebs are heavily altered to green amphibole								
	93.43	some small bornite blebs								
	103.46 - 104.26	narrow uralitized cp/po/mag stringer 1-2mm in width parallel to 8 degrees from the core axis.								
	105.13 - 105.20	very large composite bleb composed of cp, po and magnetite appears zoned with cp in middle, po around cp and then mag on outside suggests replacement								
	106.61 - 106.80	zone of small amoeboid pods (large blebs) of chalcopyrite rimmed with magnetite- area surrounding this zone is heavily potassically altered lower contact - sharp to diffuse and irregular								
109.38	119.12	ALKALI - FELDSPAR QUARTZ SYENITE								
		- reddish to reddish-orange in colour with dark green to greenish-black mottles (augite and amphibole grains)								
		- generally fine-grained to locally very fine-grained with 50 to 60% reddish alkali feldspars and 35 to 45% dark green to greenish-black pyroxenes								
		- trace to 10% interstitial quartz								
		- whole unit (within this hole) is fractured and broken								
		- 2 prominent fracture sets, one at approx. 10-28 degrees and the other at approx. 150 to 160 degreese								
		- a large number of irregular, fenitized fractures and veinlets containing greenish amphiboles and chlorite and sometimes calcite.								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu ppm
		- moderately to highly magnetic due to 5-8% very finely disseminated magnetite								
		- zones of fenitization occur at 112.00 to 112.30, 112.57 to 113.55								
		- <1% pyrite, usually along fractures								
		119.12-sharp contact with underlying unit at 28 degrees to C.A.								
			2059	109.38	110.38	1.00	21	-15	4	344
			2060	110.38	111.38	1.00	14	-15	3	261
			2061	111.38	112.38	1.00	3	-15	1	211
119.12	123.37	AMPHIBOLE- PLAGIOCLASE PORPHRY DYKE (Lamprophyre ?)								
		- similar to 30.04 to 53.32 - massive								
		- fewer plagioclase phenocrysts (10-20%) and more amphibole phenocrysts (5-10%)								
		- cut by the occassional carbonate - siderite veinlet								
		- some characteristics of a lamprophyre								
123.37	125.00	ALKALI-FELDSPAR-QUARTZ SYENITE								
		-same as 109.38 to 119.12								
125.00	125.00	END OF HOLE								

ST. JOE CANADA

DIAMOND DRILL HOLE RECORD

Hole No.	687.2	Northing	L17+00S	Grid Orient		Depth	Dip	Azimuth	Test	Depth	Dip	Azimuth	Test	Started	November 25, 1987	Logged by	A.D. MacTavish
Property	GEORDIE LAKE	Easting	3+30W	Grid Azim.		118.0	- 39							Finished	November 26, 1987	Checked by	
Section		Elevation		Length (M)	118.00									Drill Co.	Falcon Drilling	Core	BQ
Claim No.	864004	Survey N.		Dip-Collar	-45.00									Drill No.		Comments:	
Target	Min'd Gab/Sy Contact	Survey E.		Comp Bearing	90.00									Drill For.			

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cuppm

SUMMARY

0.00	5.54	CASING
5.54	10.14	ALTERED MAGNETITE MELAGABBRO
10.14	16.20	AMPHIBOLE-PLAGIOCLASE PORPHYRY DYKE (Possible Lamprophyre)
16.20	43.21	ALTERED GABBRO (Slightly to Moderately Mineralized)
44.05	49.15	MELAGABBRO TO GABBRO
49.15	52.68	ALTERED GABBRO
52.68	58.73	ALTERED GABBRO
58.73	61.50	ALTERED GABBRO
61.50	76.80	MELAGABBRO
76.80	93.10	ALTERED GABBRO (Mineralized)
93.10	96.94	HORNBLENDE CLINOPYROXENITE (Mineralized)
96.94	101.07	INTERLAYERED ALTERED GABBRO AND MELAGABBRO (Highly Mineralized)

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cuppm
101.07	103.05	HIGHLY ALTERED GABBRO (Mixed Zone?) - Well Mineralized								
103.05	118.00	ALKALI-FELDSPAR QUARTZ SYENITE								
118.00	118.00	END OF HOLE								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cuppm
0.00	5.54	CASING								
5.54	10.14	ALTERED MAGNETITE MELAGABBRO - fine-grained, massive with localized potassic alteration (5-10%) throughout - 20% subhedral, slightly potassically-altered plagioclase, 60-65% slightly to moderately altered subhedral clinopyroxene and some amphiboles, 15-20% subhedral to euhedral magnetite - trace to 1% very finely disseminated chalcopyrite, pyrrhotite - occasional fractures at approx. 16 deg. to CA, one at 28 deg. to CA - 7.96-8.85m - fractured and broken rock, fracture runs subparallel to CA - contact with underlying unit at approx. 16 deg. to CA, slightly irregular but sharp - 9.60-10.14m - 50-75% potassic alteration of gabbro								
10.14	16.20	AMPHIBOLE-PLAGIOCLASE PORPHYRY DYKE (Possible Lamprophyre) - dark grey rock composed of 0.5-2cm light grey, carlsbad twinned euhedral laths of plagioclase, 3-7m, subhedral to locally euhedral prismatic grains of amphibole (hornblende?), within an extremely fine-grained to fine-grained matrix of plagioclase, k-spar, amphibole, magnetite and pyroxene - plagioclase phenocrysts are sometimes host to a fractured, anhedral, glassy, emerald green mineral - upper and lower contacts are sharp and slightly irregular and slightly chilled - lower contact at approx. 32 deg. to CA - trace chalcopyrite								
			2062	14.20	15.20	1.00	9	-15	2	85
			2063	15.20	16.20	1.00	12	-15	1	85
16.20	43.21	ALTERED GABBRO (Slightly to Moderately Mineralized) - medium to very coarse-grained with 20-40% patches of potassic alteration which all tend to be coarser-grained than surrounding relatively unaltered gabbro - plagioclase within altered patches is partly to completely rimmed by k-spar and some grains have been totally replaced - subophitic in texture - unaltered rock composed of 35-40% grey to grey-green plagioclase laths, 5-8%								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cuppm
		subhedral to euhedral magnetite (maybe titanomagnetite or ilmenite), 55-58% black clinopyroxene with variable amounts of greenish hornblende and fibrous amphiboles (alteration products)								
		- massive to possibly weakly layered								
		- may be a few diffuse layers of slightly altered melagabbro to magnetite melagabbro- those more mafic zones occur at: 21.41-21.84m; 21.99-22.58m; 26.46-26.94m								
		- a few fractures, some cemented with calcite occur locally at between 10 and 14 deg. to CA and 30 to 35 deg. to CA								
		Mineralization:								
		- quite variable, but is composed of 1-3% disseminated to blebby chalcopyrite, pyrrhotite								
		- percentage is highly variable over short distances and gradually dies out down hole to about 1% disseminated to small blebs of chalcopyrite generally associated with patches of potassic alteration								
		- best mineralization occurs between contact at 16.20m and about 25.00m								
		- 21.54m - 1cm thick chalcopyrite, pyrrhotite veinlet associated with edge of patch of potassic alteration								
		- sulphide content increases slightly after 34m to about 44.70m								
		- increases to 2-3% locally								
0.00	43.21	44.05%MAGNETITE MELAGABBRO	2064	16.20	17.20	1.00	124	21	11	1730
		- unmineralized, fine-grained, almost ultramafic in character	2065	17.20	18.20	1.00	114	-15	17	1370
		- 10-15% dark greenish-grey plagioclase, 25-30% finely disseminated magnetite and 55-65% pyroxene	2066	18.20	19.20	1.00	109	-15	13	949
			2067	19.20	20.20	1.00	72	-15	9	863
		- massive, irregular relatively sharp contacts	2068	20.20	21.20	1.00	76	-15	7	487
		- no sulphides observed	2069	21.20	22.20	1.00	158	-15	19	2490
			2070	22.20	23.20	1.00	164	16	13	1440
			2071	23.20	24.20	1.00	144	17	18	1850
			2072	24.20	25.20	1.00	180	-15	48	2310
			2073	25.20	26.20	1.00	156	-15	21	1036
			2074	26.20	27.20	1.00	149	-15	11	851
			2075	27.20	28.20	1.00	68	-15	10	414
			2076	28.20	29.20	1.00	80	19	20	1220
			2077	29.20	30.20	1.00	49	-15	9	520
			2078	30.20	31.20	1.00	44	-15	10	448

FROM	TO	DESCRIPTION
44.05	49.15	MELAGABBRO TO GABBRO - beginning of unit is relatively complicated: 44.05 44.55 - mineralized potassically altered gabbro, medium to coarse-grained in nature - 1-3% blebs chalcopyrite and pyrrhotite 44.55 44.80 - fine-grained magnetite melagabbro similar to 43.21-44.05m 44.80 49.25 - is a relatively unaltered, variably textured gabbro which at times could be termed as melagabbro - medium to very coarse-grained (locally pegmatitic) and comprised of 30-40% greenish plagioclase laths up to 1cm in length, 8-15% prismatic and cubic magnetite or ilmenite grains (prismatic grains may be ilmenite), and 50-60% dark green to black clinopyroxene and amphibole
49.15	52.68	ALTERED GABBRO - similar to 16.20-43.21m - relatively unmineralized - <1% small blebs and finely disseminated chalcopyrite and pyrrhotite - upper and lower contacts relatively sharp, but irregular; upper at 70 deg. to CA; lower at 75 deg. to CA
52.68	58.73	ALTERED GABBRO - fine-grained slightly to moderately altered gabbro that grades very gradually into a medium-grained gabbro at lower contact - massive to very weakly layered- possible layering indicated by a slightly darker zone approx. 1cm thick spaced about 10-15cm apart in the central portions of the unit

SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cuppm
2079	31.20	32.20	1.00	53	-15	13	540
2080	32.20	33.20	1.00	64	-15	9	663
2081	33.20	34.20	1.00	78	-15	10	952
2082	34.20	35.20	1.00	85	-15	12	1011
2083	35.20	36.20	1.00	61	-15	6	730
2084	36.20	37.20	1.00	105	-15	18	1011
2085	37.20	38.20	1.00	215	16	12	2360
2086	38.20	39.20	1.00	284	19	18	1980
2087	39.20	40.20	1.00	468	27	29	3350
2088	40.20	41.20	1.00	361	38	23	3640
2089	41.20	42.20	1.00	290	16	30	2340
2090	42.20	43.21	1.01	626	37	22	1910
2091	43.21	44.05	0.84	860	47	46	2170
2092	44.05	44.55	0.50	489	26	37	2170
2093	44.55	45.55	1.00	133	15	14	253
2094	45.55	46.55	1.00	102	16	10	328

FROM	TO		DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cuppm
			- oriented at about 45 deg. to CA								
			- fractures are uncommon, however when present they will exhibit a narrow potassic reaction rim 2-5mm thick								
			- trace very finely disseminated chalcopyrite								
		52.78 53.05	- 1% small chalcopyrite blebs								
			- upper contact relatively diffuse over 1-3cm; can't measure orientation								
			- lower contact sharper at 39 deg. to CA								
58.73	61.50	ALTERED GABBRO									
			- 40-50% patches of potassic alteration within a medium to coarse-grained gabbro								
			- much coarser and more highly altered than 52.68-58.73m								
			- similar percentages of minerals at 52.68-58.73m except with 5% finely disseminated magnetite								
			- trace finely disseminated chalcopyrite								
			- potassic alteration decreases down hole and eventually grades into a hornblende oikocrystic melagabbro at about 61.50m								
			- plagioclase content drops off and pyroxene,amphibole and magnetite content increases								
61.50	76.80	MELAGABBRO									
			- unit is mostly a massive hornblende oikocrystic melagabbro								
			- medium-grained, greyish-black in colour								
			- throughout the unit are numerous 5-10cm thick patches of where potassically altered plagioclase increases to about 50-60% of rock; these patches are also coarse to very coarse-grained - possible layers?								
			- 5-8% disseminated magnetite								
			- fractures are occasionally observed at no particular orientation								
			- oikocrysts are subhedral to euhedral in form and up to 7mm in diameter								
		69.75 71.61	- potassic alteration increases to 25% of core - in coarse-grained irregular patches - drops off again after 71.61								
			- 75.35- rock could be either a gabbro or a melagabbro because plagioclase content is roughtly 35%								
			Mineralization								
			- trace chalcopyrite throughout most of unit								
			- 76.00-76.80m - 5-8% coarse composite blebs of bornite,rimmed with								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cuppm
		chalcopyrite, pyrrhotite and ilmenite(?) - some blebs greater than 1cm in diameter; mostly within a coarse-grained melagabbro portion of unit - lower contact is sharp, but irregular, and at roughtly 90 deg. to CA								
			2095	74.00	75.00	1.00	301	17	21	3370
			2096	75.00	76.00	1.00	574	35	41	4060
			2097	76.00	76.80	0.80	885	66	45	7360
76.80	93.10	ALTERED GABBRO (Mineralized) - similar to 16.20-43.21m - slightly more plagioclase (35-50%) - alteration is variable - subophitic texture - usually massive, locally fractured at variable orientations Mineralization - quite variable throughout unit from 1% very finely disseminated chalcopyrite and pyrrhotite to 5% coarse composite chalcopyrite and pyrrhotite blebs usually associated with ilmenite(?) (very difficult to quantify for any given area due to sporadic texture of sulphide concentrations) 86.20m - narrow chalcopyrite stringer - <2mm								
			2098	76.80	77.80	1.00	427	28	72	4410
			2099	77.80	78.80	1.00	483	29	33	4090
			2100	78.80	79.80	1.00	307	24	26	3250
			2101	79.80	80.80	1.00	200	19	16	1940
			2102	80.80	81.80	1.00	216	27	19	2290
			2103	81.80	82.80	1.00	165	-15	12	1500
			2104	82.80	83.80	1.00	146	-15	12	908
			2105	83.80	84.80	1.00	96	17	12	944
			2106	84.80	85.80	1.00	151	-15	27	1610
	86.50	93.10 - highly altered gabbro - potassic alteration of plagioclase ranges from 30-60% of rock - many grains completely altered to k-spar - sulphide content drops somewhat to 1-3% blebby chalcopyrite, pyrrhotite - contact with underlying unit is diffuse with a gradual increase in pyroxene and amphibole content and a drop in potassic alteration	2107	85.80	86.80	1.00	181	-15	16	1670
			2108	86.80	87.80	1.00	143	-15	14	1830
			2109	87.80	88.80	1.00	420	-15	44	927
			2110	88.80	89.80	1.00	100	-15	21	924
			2111	89.80	90.80	1.00	108	-15	10	935
	86.73	86.95 - fractured and broken core; fracture at about 5 deg to CA								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cuppm
	87.17 87.27	- sheared zone at about 88 deg. to CA;								
	87.80 87.90	- highly sheared zone								
		- very friable and crumbly								
		- shear roughly sub-parallel to CA								
	86.73 86.95	- fractured and broken core; fracture at about 5 deg. to CA								
			2112	90.80	91.80	1.00	212	-15	13	2180
			2113	91.80	92.44	0.64	393	24	25	2850
			2114	92.44	93.10	0.66	328	24	20	3190
93.10	96.94	HORNBLENDE CLINOPYROXENITE (Mineralized)								
		- coarse to very coarse-grained, massive, oikocrystic dark grey to black ultramafic rock								
		- 5-8% magnetite (ilmenite), 10-15% dark green to black hornblende and 77-85% black clinopyroxene (augite?)								
		- oikocrysts (10%) up to 0.5cm in diameter are composed of hornblende and are subhedral in form								
		- some slight potassic alteration near upper contact								
		- upper contact is gradational over 30cm with potassically altered plagioclase content almost totally disappearing - locally feldspathic near fractures								
		Mineralization								
		- 1% very finely disseminated chalcopyrite and pyrrhotite to locally 5% disseminated to blebby, chalcopyrite, bornite and pyrrhotite								
		- 93.10 95.85- 1-2% disseminated to small blebs chalcopyrite, pyrrhotite and occasional bornite								
		- 95.86 96.94- well mineralized with 2 to locally 10-12% disseminated to coarse blebby chalcopyrite, pyrrhotite, bornite - locally almost net textured								
		- 96.11m- thin 1-2m chalcopyrite stringer at 36 deg. to CA								
		- 96.32m - 1cm thick chalcopyrite/pyrrhotite veinlet at 23 deg. to CA								
		- 96.85m - 2mm chalcopyrite/pyrrhotite stringer at 64 deg. to CA								
		- lower contact is diffuse and gradational over 5-10cm								
			2115	93.10	94.10	1.00	423	17	26	2600
			2116	94.10	95.10	1.00	638	33	43	2590
			2117	95.10	95.85	0.75	845	42	45	3440
			2118	95.85	96.40	0.55	1725	111	87	2640
			2119	96.40	96.94	0.54	878	46	54	6540

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cuppm
96.94	101.07	INTERLAYERED ALTERED GABBRO AND MELAGABBRO (Highly Mineralized) - a series of alternating layers(?) of moderately to highly potassically altered medium to very coarse-grained pinkish to greyish-green gabbro and medium to coarse-grained, oikocrystic melagabbro (locally feldspathic hornblende clinopyroxenite) - oikocrysts are hornblende and 3-6mm in diameter - some of the gabbroic zones contain 60% altered plagioclase - texture is occasionally subophitic - rock tends to be massive - occasional fracturing observed at between 39 and 49 deg. to CA Mineralization - very well mineralized - ranges from the occasional narrow zone of 1-2% disseminated chalcopyrite, pyrrhotite (bornite) to small 3-5cm diameter patches containing 10-20% blebs chalcopyrite, pyrrhotite (bornite) - some blebs are 20%cm in diameter - overall average 7-12% disseminated to coarse blebby chalcopyrite, pyrrhotite, bornite								
			2120	96.94	97.94	1.00	2720-	141	155	4550
			2121	97.94	98.94	1.00	830	53	88	14340
			2122	98.94	99.94	1.00	386	50	29	5940
			2123	99.94	100.51	0.57	401	26	37	6460
			2124	100.51	101.07	0.56	651	53	81	5280
101.07	103.05	HIGHLY ALTERED GABBRO (Mixed Zone?) - Well Mineralized - fine to coarse-grained, highly altered potassically rock that was once a gabbro - pinkish-grey to grey in colour - composed of 20-70% k-spar with remnant plagioclase locally - 8-10% disseminated major ilmenite; 20-80% pyroxene (and amphibole); magnetite (ilmenite) increases to 20-25% near contact Mineralization - ranges from narrow zones of 1-2% disseminated chalcopyrite, pyrrhotite to areas of 8-15% disseminated and blebby chalcopyrite, pyrrhotite (bornite) - some blebs of chalcopyrite, pyrrhotite, ilmenite are 3-4cm in								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cuppm
		diameter								
		- 101.71m - 5cm x 1.5cm chalcopyrite, pyrrhotite, ilmenite bleb or pod								
		- 102.96m - 4cm x 2cm chalcopyrite, pyrrhotite, ilmenite bleb or pod surrounded by 20% disseminated sulphides and ilmenite								
		- some fractures throughout at 38 to 52 deg. to CA								
		- lower contact relatively sharp at 67 deg. to CA								
			2125	101.07	102.07	1.00	502	27	24	4030
			2126	102.07	103.05	0.98	6020	52	43	10090
103.05	118.00	ALKALI-FELDSPAR QUARTZ SYENITE								
		- fine to medium-grained, pinkish in colour, massive, slightly to moderately altered rock								
		- contains 50-70% k-spar, 5-6% very finely disseminated magnetite, 25-35% augite (clinopyroxene), trace to 10% interstitial quartz								
		- conjugate fractures at between 35 and 45 deg. to CA are common								
		- fractures usually contain carbonate stringers								
		- irregular fractures are ubiquitous and host minor feritization								
		- some fractures are subparallel to CA								
		- some chalcopyrite (<1%) present near fractures for 2-3m past the contact at 103.05m								
			2127	103.05	104.05	1.00	703	31	18	4770
			2128	104.05	105.05	1.00	55	-15	7	383
			2129	105.05	106.05	1.00	121	-15	12	1024
			2130	106.05	107.05	1.00	-2	-15	2	204
118.00	118.00	END OF HOLE								

ST. JOE CANADA — DIAMOND DRILL HOLE RECORD — Page #1 of

Hole No.	687.3	Northing	L19+00S	Grid Orient		Depth	Dip	Azimuth	Test	Depth	Dip	Azimuth	Test	Started	November 27, 1987	Logged by	A.D. MacTavish
Property	GEORDIE LAKE	Easting	3+01W	Grid Azim.		50.0	- 38			80.0	- 39			Finished	November 28, 1987	Checked by	
Section		Elevation		Length (M)	80.00									Drill Co.	Falcon Drilling	Core	BQ
Claim No.	86005	Survey N.		Dip-Collar	-45.00									Drill No.		Comments:	
Target	MIN'D GB/SY CONTACT	Survey E.		Comp Bearing	90.00									Drill For.			

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu ppm

SUMMARY

0.00	1.61	CASING
1.61	18.26	GABBRO TO MAGNETITE GABBRO
18.26	26.14	ALTERED GABBRO (Slightly to Moderately Mineralized)
26.14	32.03	FELDSPATHIC MAGNETITE CLINOPYROXENITE TO MAGNETITE MELAGABBRO (Mineralized)
32.03	40.80	GABBRO TO MAGNETITE GABBRO
40.80	54.08	GABBRO
54.08	64.23	MAGNETITE MELAGABBRO TO GABBRO (Mineralized)
64.23	64.84	MIXED ZONE (Mineralized)
64.84	65.25	MUD SEAM
65.25	80.16	ALKALI-FELDSPAR QUARTZ SYENITE
80.16	80.16	END OF HOLE

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu ppm
0.00	1.61	CASING								
1.61	18.26	GABBRO TO MAGNETITE GABBRO - massive, fine to medium-grained, sub-ophitic textured, oitocrystic dark greenish-grey rock - composed of 35-47% greenish laths of plagioclase (usually twinned), 5-15% finely disseminated to disseminated magnetite and 50-60% dark green to black clinopyroxene - initially very little potassic alteration of plagioclase, however with depth patches of alteration start to appear and become more abundant - patches are initially <1cm in diameter and medium to coarse-grained, gradually become bigger in size to about 3cm in diameter - plagioclase rimmed by pyroxene within these patches is very common; 8.54 - 1cm thick altered veinlet? at 27 deg. to CA - potassic alteration rims vein for 0.5cm 11.66 - 1cm thick syenite veinlet at between 2 and 10 deg. to CA Mineralization - initially <1% very finely disseminated chalcopyrite, however it increases with depth	2131	10.60	11.60	1.00	118	-15	11	1520
			2132	11.60	12.60	1.00	141	-15	15	1710
			2133	12.60	13.60	1.00	110	-15	10	1220
			2134	13.60	14.60	1.00	120	-15	13	1740
	14.60 - 18.26	- 1-2% (occasionally 3%) chalcopyrite (pyrrhotite) - disseminated to local small blebs - magnetite content varies considerably throughout unit and in some places reaches 10 - 15%	2135	14.60	15.60	1.00	71	-15	8	784
			2136	15.60	16.60	1.00	307	18	20	2320
			2137	16.60	17.60	1.00	522	26	34	3560
			2138	17.60	18.26	0.66	71	-15	11	550
	16.92 - 17.00	- series of fractures; one subparallel to CA; others at 27 deg. to CA - contact at 18.26m is irregular and somewhat diffuse over 1 or 2cm								
18.26	26.14	ALTERED GABBRO (Slightly to Moderately Mineralized) - coarse to very coarse-grained dark grey to pinkish-green (where altered) - similar mineral percentages to finer-grained gabbro observed between 1.61								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu ppm
		and 18.26m - patches of potassic alteration are coarser than rest of gabbro and k-spar commonly rims plagioclase - 5-7% disseminated magnetite Mineralization - 1-3% disseminated to blebby chalcopyrite, pyrrhotite throughout unit- nowhere is it particularly concentrated - 26.14m: lower contact is diffuse; grades into a magnetite melagabbro over about a meter;- patches of alteration stop								
			2139	18.26	19.26	1.00	166	20	19	940
			2140	19.26	20.26	1.00	167	-15	11	983
			2141	20.26	21.26	1.00	91	-15	9	396
			2142	21.26	22.26	1.00	110	-15	12	562
			2143	22.26	23.26	1.00	112	-15	10	763
			2144	23.26	24.26	1.00	239	-15	17	1690
			2145	24.26	25.26	1.00	343	-15	19	1760
			2146	25.24	26.14	0.90	458	21	30	2630
26.14	32.03	FELDSPATHIC MAGNETITE CLINOPYROXENITE TO MAGNETITE MELAGABBRO (Mineralized) - dark green to black; medium to locally very coarse-grained; oikocrystic massive rock - 3-15% greenish plagioclase, 10-25% disseminated magnetite, 10-15% secondary greenish amphibole and 45-77% clinopyroxenite (potassic augite) - grades from pyroxenite into melagabbro without contacts - 28.42m : potassic alteration of plagioclase around thin fractures observed only in a few small zones - 29.31-29.43m, 29.68-29.71m - alteration patches - 30.54-30.61m - alteration patch - 31.61-31.64m - alteration around fracture Mineralization - some areas have <1% disseminated chalcopyrite, pyrrhotite; others have 3-5% large composite blebs of chalcopyrite, pyrrhotite - 26.85-27.20m - 3-5% coarse chalcopyrite/pyrrhotite blebs - 28.00-28.15m - 3-5% coarse chalcopyrite/pyrrhotite blebs - 28.60-28.90m - 1-4% blebs chalcopyrite, pyrrhotite, bornite								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu ppm
		- 29.26-30.95m - 1-2% small blebs and disseminations chalcopyrite, pyrrhotite								
		- 30.95-32.03m - <1% very finely disseminated chalcopyrite and pyrrhotite								
		- contact at 32.03m relatively sharp at 33 deg. to CA								
			2147	26.14	26.85	0.71	703	36	36	2230
			2148	26.85	27.35	0.50	444	-15	19	1840
			2149	27.35	28.35	1.00	142	24	7	708
			2150	28.35	29.26	0.91	867	69	71	3010
			2151	29.26	30.26	1.00	321	31	24	1530
			2152	30.26	30.95	0.69	308	23	21	1400
			2153	30.95	32.03	1.08	48	-15	3	210
32.03	40.80	GABBRO TO MAGNETITE GABBRO								
		- coarse to very coarse-grained, locally pegmatitic, massive rock								
		- similar to 1.61-18.26m except that it is much coarser-grained and there is usually no more than trace very finely disseminated chalcopyrite and pyrrhotite								
		- magnetite content is highly variable ranging from 8 to locally 25% and ranges in grain size from very fine to medium-grained subhedral to euhedral crystal form								
		39.07 - 39.15 - 1-2% coarse blebs chalcopyrite; few fractures								
40.80	54.08	GABBRO								
		- initially fine-grained, dense and massive with 40-45% greenish plagioclase								
		- 5-10% finely disseminated magnetite and 45-55% dark green to black clino-pyroxene								
		- upper contact is gradational over 5-10cm centered around 40.80m								
		- occasional fractures filled with pinkish carbonate (<1-10mm thick) at highly variable, irregular orientations sometimes associated with hairline shears(?)								
		- the most constant orientation (30%) is about 25 deg. to CA								
		- trace very, very finely disseminated sulphides								
		- with depth the grain size gradually increases to medium-grained near the bottom of the unit								
		- lower contact is gradational over 3-5cm, quite diffuse								
		49.50 - 50.15 - slightly sheared, fractured and moderately brecciated alteration zone consisting of carbonitic, chloritic and potassic alteration								

FROM	TO	DESCRIPTION
		- fractures are mainly oriented at between 45 and 62 deg. to CA - zone is green in centre and pinkish to outside at edges - slight decrease in plagioclase content near lower contact
54.08	64.23	MAGNETITE MELAGABBRO TO GABBRO (Mineralized) - similar to rocks observed between 1.61 - 18.26m except that range in grain size is fine to coarse-grained and there is a decrease in the magnetite percentage and an increase in the plagioclase percentage with depth - hornblende oikocrystic in first 5 or 6m of unit - a few fractures observed at about 22 deg. to CA - both upper and lower contacts are gradational - as plagioclase increases so does potassic alteration - most prominent alteration occurs betwen 53.23 and 64.23m - rock is gabbroic from near 60m onwards Mineralization - increases with depth - 54.08m to about 58.00m - 1-3% disseminated and blebby chalcopyrite, pyrrhotite, bornite - some zones such as 56.70m contain 3% bornite - 58.00 - 64.23- 2-8% disseminated, coarse blebby and stringer chalcopyrite, pyrrhotite, bornite - 61.70 - 61.74- massive pod of chalcopyrite, pyrrhotite, ilmenite; some blebs are 2-3cm in diameter and almost not textured; lower contact gradational over 3-4cm

SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu ppm
2154	54.08	55.00	0.92	754	51	23	509
2155	55.00	56.00	1.00	1354	66	77	4880
2156	56.00	57.00	1.00	2152	99	122	12000
2157	57.00	58.00	1.00	1646	82	100	7350
2158	58.00	59.00	1.00	1614	95	99	10760
2159	59.00	60.00	1.00	999	52	66	6760
2160	60.00	61.00	1.00	551	112	34	14980
2161	61.00	62.00	1.00	182	19	18	1980
2162	62.00	63.00	1.00	316	15	28	2530
2163	63.00	63.60	0.60	567	42	58	4420

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu ppm
			2164	63.60	64.23	0.63	340	17	29	2510
64.23	64.84	MIXED ZONE (Mineralized) - hybridized, potassically altered rock - a combination of gabbro assimilated by the syenite - 40% k-spar, 10% plagioclase, 10% magnetite (or ilmenite), 40% clinopyroxene and minor secondary amphiboles Mineralization - 5-20% chalcopyrite, pyrrhotite in disseminations, coarse blebs, small pods and narrow stringers - 64.23 64.37- mostly small pods and large blebs of chalcopyrite								
			2165	64.23	64.84	0.61	735	45	35	5200
64.84	65.25	MUD SEAM								
65.25	80.16	ALKALI-FELDSPAR QUARTZ SYENITE - fine to medium-grained, massive, locally well-fractured rock containing trace to 10% quartz, 20-25% clinopyroxene and 65-75% alkali-feldspar - trace pyrite and chalcopyrite occasionally - amphibole and chloritic alteration along many fractures (fenitization) - thin carbonate stringers common								
			2166	65.25	66.25	1.00	708	39	49	5180
			2167	66.25	67.25	1.00	375	16	24	2590
			2168	67.25	68.25	1.00	200	-15	12	1490
		73.52 - 73.80 - broken ground 74.08 - 74.78 - broken ground 79.63 - 79.73 - broken ground								
80.16	80.16	END OF HOLE								

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DIAMOND DRILL HOLE RECORD

Hole No.	687.4	Northing	L19+00W	Grid Orient		Depth	Dip	Azimuth	Test	Depth	Dip	Azimuth	Test	Started	November 28, 1987	Logged by	A.D. MacTavi
Property	GEORDIE LAKE	Easting	3+50W	Grid Azim.		50.0	- 38			116.0	- 0			Finished	November 29, 1987	Checked by	
Section		Elevation		Length (M)	116.00									Drill Co.	Falcon Drilling	Core	
Claim No.	864005	Survey N.		Dip-Collar	-45.00									Drill No.		Comments:	
Target	MIN'D GB/SY CONTACT	Survey E.		Comp Bearing	90.00									Drill For.			

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	Pdppb	Ptppb	Auppb	Cuppm

SUMMARY

0.00	1.71	CASING
1.71	14.20	HORNBLENDE MELAGABBRO
14.20	17.44	ALTERED GABBRO TO HORNBLENDE GABBRO
17.44	19.50	HORNBLENDE MELAGABBRO
19.50	45.60	HORNBLENDE GABBRO TO GABBRO
45.60	48.60	MELAGABBRO TO MAGNETITE MELAGABBRO (Slightly Mineralized)
48.60	55.45	MAGNETITE MELAGABBRO TO ALTERED GABBRO (Mineralized)
55.45	65.38	ALTERED GABBRO TO MAGNETITE GABBRO
65.38	67.20	MAGNETITE MELAGABBRO
67.20	75.67	INTERLAYERED MAGNETITE MELAGABBRO AND ALTERED GABBRO (Mineralized)
75.67	77.64	GABBRO
77.64	94.14	GABBRO

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	Pdppb	Ptppb	Auppb	Cuppm
94.14	102.86	MAGNETITE MELAGABBRO (Mineralized)								
102.86	116.00	ALKALI FELDSPAR QUARTZ SYENITE								
116.00	116.00	END OF HOLE								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	Pdppb	Ptppb	Auppb	Cuppm
0.00	1.71	CASING								
1.71	14.20	HORNBLENDE MELAGABBRO - fine to coarse-grained, dark green, subophitic-textured, massive rock with about 30-40% hornblende, 25-30% greenish plagioclase, 5 to locally 10% finely disseminated magnetite, 20-40% black, dull lustred clinopyroxene (augite?) - trace very finely disseminated chalcopyrite (pyrrhotite) - hornblende usually is slightly altered to a lighter green actinolite - after 7m the rocks become slightly potassically altered (3-5% of rock) - alteration increases gradually with depth; near base of unit plagioclase content increases as well 9.20 9.45 - ground, broken and sheared core; shear zone?; no preferred orientation; very chloritic 9.83 10.36 - ground, broken, fractured and sheared core; some shears at 5 deg. to CA; others subparallel - very chloritic - shear zone 10.36 14.20 - faint regular bands or layers characterized by a slightly darker 1-3cm band at 60 deg. to CA - bands are approximately 10-15cm apart								
14.20	17.44	ALTERED GABBRO TO HORNBLENDE GABBRO - 20-40% potassic alteration of plagioclase grains - relatively uniformly spread throughout unit rather than in irregular patches - decreases at either end of unit - amphibole content varies from <10% to locally 20% - 5-10% magnetite - 35-45% partially altered plagioclase, 35-60% clinopyroxene - trace very finely to finely disseminated chalcopyrite (pyrrhotite) - banding similar to that observed from 10.36 - 14.20m throughout unit - both upper and lower contacts are gradational								
17.44	19.50	HORNBLENDE MELAGABBRO - very similar to 1.71 - 14.20m - grades unperceptably into a hornblende gabbro to gabbro at about 19.50m - contact over 20-30cm where plagioclase increases and hornblende decreases slightly								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	Pdppb	Ptppb	Auppb	Cuppm
19.50	45.60	HORNBLENDE GABBRO TO GABBRO - medium to locally coarse-grained, subophitic textured, massive rock composed of 35-40% greenish plagioclase locally potassically altered (rimmed), 5 to locally 10% finely disseminated magnetite - amphibole content varies from <5% to about 10% locally - pyroxenes, which are slightly altered to actinolite, locally make up 40-55% of rock - trace to 0.5% very finely disseminated chalcopyrite (pyrrhotite) - large number of very thin irregular amphibole and chlorite-filled fractures scattered throughout this unit ;no preferredorientation observed - potassic alteration is quite variable ranging from nil to affecting 40% of the rock locally (usually near a fracture) - plagioclase content and accompanying potassic alteration increase slightly with depth to about 41.50m then start to decrease again - fractures are uncommon, however where they occur there is no discernible preferred orientation - some fractures contain narrow <1.4mm thick carbonate veinlets - thicker carbonate stringers exhibit a narrow alteration halo up to 2cm in thickness - faint, slightly darker bands are spaced relatively evenly throughout this unit and are similar to those observed from 10.36 - 14.20m; spacing is locally much closer together (2-3cm apart) - subophitic texture becomes better developed with depth until about 41.50m then starts to fade with the drop in plagioclase content - alteration of hornblende (where present) and pyroxenes to actinolite increases slightly with depth after 41.50m - rock eventually grades into a melagabbro - lower contact is gradational over about 10-20cm								
45.60	48.60	MELAGABBRO TO MAGNETITE MELAGABBRO (Slightly Mineralized) - similar to 1.71 - 14.20m except there is much less hornblende (<5%) and the magnetite content ranges from about 5% to as much as 20% locally - usually finely disseminated to disseminated and irregular in occurrence although the magnetite content does tend to increase downhole - locally minor patches of potassic alteration occur	2169	45.60	46.60	1.00	38	-15	6	391
	47.17	47.35 - 3-5cm thick, medium to coarse-grained syenite vein								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	Pdppb	Ptppb	Auppb	Cuppm
		Mineralization - majority of unit hosts trace to <1% very finely disseminated chalcopyrite (pyrrhotite) - 47.85 48.60- a sudden increase in sulphide content to 1-3% disseminated to blebby sulphides (cp)								
			2170	46.60	47.60	1.00	40	-15	25	368
			2171	47.60	48.60	1.00	156	-15	14	1300
48.60	55.45	MAGNETITE MELAGABBRO TO ALTERED GABBRO (Mineralized) - the oikocrystic magnetite melagabbro is almost identical to that observed between 45.60 - 48.60m - within the melagabbro are a large number of irregular potassically altered gabbroic patches or zones which range from medium to very coarse-grained- tend to increase in number with depth until the melagabbro disappears at about 55.45m - fractures occur occasionally with no apparent preferred orientation Mineralization - quite variable from about 1% very finely disseminated chalcopyrite (pyrrhotite) to 2-4% blebs to coarse blebs of chalcopyrite and pyrrhotite with some bornite - slightly concentrated patches many times are associated with or within altered gabbroic patches									
			2172	48.60	49.60	1.00	204	18	14	2150
			2173	49.60	50.60	1.00	122	-15	5	1290
			2174	50.60	51.60	1.00	71	-15	3	934
			2175	51.60	52.60	1.00	126	-15	8	1520
			2176	52.60	53.60	1.00	455	22	17	2570
			2177	53.60	54.60	1.00	567	28	44	3510
			2178	54.60	55.45	0.85	170	-15	9	839
55.45	65.38	ALTERED GABBRO TO MAGNETITE GABBRO - medium to very coarse-grained, massive, greenish-black to pinkish in colour - a large number of irregular, variably-sized coarse to very coarse-grained patches of potassic alteration - within these patches k-spar rims most of the plagioclase grains and a few									

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	Pdppb	Ptppb	Auppb	Cuppm
		have been totally replaced - unaltered portions composed of subophitic textured plagioclase (35-45%) and pyroxene (40-45%), with 10-25% disseminated magnetite - only a few fractures observed at about 21 deg. to CA - upper and lower contacts gradational over 3-5cm Mineralization - initially 2-4% disseminated to coarse blebby chalcopyrite and pyrrhotite (born) but this drops very quickly to trace to 1% finely disseminated chalcopyrite (pyrrhotite) after 56.75m								
			2179	55.45	56.45	1.00	336	34	16	4820
			2180	56.45	57.45	1.00	86	-15	3	752
			2181	57.45	58.45	1.00	83	-15	2	681
65.38	67.20	MAGNETITE MELAGABBRO - fine to medium-grained, oikocrystic, massive, dark grey in colour - occasional coarse-grained feldspathic zones slightly to moderately potassically altered - slight subophitic texture - composed of 20-35% greenish plagioclase, 15-25% disseminated magnetite, 45-65% slightly altered blackish clinopyroxene (augite) - trace very finely disseminated chalcopyrite - contact at 67.20m irregular but relatively sharp - upper contact is diffuse								
			2182	65.38	66.38	1.00	564	30	28	2360
			2183	66.38	67.20	0.82	401	33	17	1460
67.20	75.67	INTERLAYERED MAGNETITE MELAGABBRO AND ALTERED GABBRO (Mineralized) - this unit is a highly variable mixture of coarse to very coarse-grained: i) massive magnetite melagabbro composed of 10-30% greenish plagioclase, 10-30% coarsely disseminated magnetite and 40-80% dark greenish-black to black clinopyroxene i) corase-grained to locally pegmatitic potassically altered gabbro with 45-60% greenish plagioclase rimmed by pink k-spar, <5% magnetite and 35-50% clinopyroxene - the melagabbro is usually oikocrystic								

FROM	TO		DESCRIPTION	SAMPLE	FROM	TO	WIDTH	Pdppb	Ptppb	Auppb	Cuppm
				2184	67.20	68.20	1.00	355	37	24	3010
				2185	68.20	69.20	1.00	192	21	10	979
				2186	69.20	70.20	1.00	318	40	20	3050
	70.33	70.39	- broken and fractured zone								
	70.55	70.66	- broken and fractured zone								
			- portions of this unit are slightly to moderately fractured at between 30 and 62 deg. to CA								
			Mineralization								
			- unit is well mineralized initially but gradually drops off until only trace finely disseminated chalcopyrite is present								
			- 67.20 - 70.70- 3-15% disseminated to large composite blebs of chalcopyrite, pyrrhotite								
			- 70.20 - 70.50- 15% large composite chalcopyrite blebs								
			- 70.70 - 75.67- trace to <1% finely disseminated chalcopyrite (pyrrhotite)								
				2187	70.20	70.70	0.50	668	62	108	9510
				2188	70.70	71.70	1.00	178	21	23	1720
				2189	71.70	72.70	1.00	54	-15	1	306
75.67	77.64	GABBRO									
			- medium to coarse-grained, massive, subophitic textured, greyish to dark grey, occasionally potassically altered rock								
			- 5-10% disseminated magnetite, 40-45% plagioclase, 45-55% clinopyroxene								
			- trace to <1% finely disseminated chalcopyrite (pyrrhotite)								
			- numerous calcite-filled fractures - veinlets range between <1mm to 5mm in diameter								
			- orientations are variable but many range between 42 and 53 deg. to CA								
			- both upper and lower contacts are gradational over 2-3cm								
77.64	94.14	GABBRO									
			- fine-grained, massive, greyish gabbro								
			- very similar to 75.67-77.64m except that it is finer-grained								
			- 90.57-94.14m becomes slightly coarser-grained to about medium-grained overall and begins to become slightly more mafic (less plagioclase/more pyroxene)								
			- gradually begins to grade into a melagabbro								
			- lower contact gradational over 2-3cm with underlying melagabbro								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	Pdppb	Ptppb	Auppb	Cuppm
		- trace very finely disseminated chalcopyrite (minor pyrrhotite)								
		- slight increase in alteration of pyroxenes to actinolite								
94.14	102.86	MAGNETITE MELAGABBRO (Mineralized)								
		- similar to 65.38 - 67.20m								
		- fine to coarse-grained with occasional very coarse-grained to pegmatitic feldspathic patches								
		- some amphibole due to alteration of pyroxenes								
		- plagioclase increases slightly from 101.40m to contact								
		- magnetite ranges from 10% to some localized zones of 30-35% coarse-grained magnetite								
		Mineralization								
		- 97.06-102.86m - 2-10% disseminated, coarse composite blebs, irregular net-textured patches and a few narrow stringers								
		- very difficult to nail down percentages due to sporadic nature of mineralization - chalcopyrite, pyrrhotite (born)								
		- 101.21-101.62m - 5-8% blebs of bornite								
		- contact at 102.86m is sharp at about 37 deg. to CA								
			2190	94.14	95.14	1.00	414	34	16	639
			2191	95.14	96.14	1.00	1419	91	182	4920
			2192	96.14	97.06	0.92	1777	96	91	8140
			2193	97.06	98.06	1.00	1023	53	59	6930
			2194	98.06	99.06	1.00	2173	114	115	6070
			2195	99.06	100.06	1.00	1455	70	113	8210
			2196	100.06	101.06	1.00	1484	69	100	12640
			2197	101.06	102.06	1.00	1196	43	88	8840
			2198	102.06	102.86	0.80	577	30	34	4390
102.86	116.00	ALKALI FELDSPAR QUARTZ SYENITE								
		- reddish to pinkish in colour, fine to medium-grained, massive, heavily fractured locally, and fenitized along most fractures								
		- near contact contains 50-60% pyroxene - this drops off downhole to average about 20-30%								
		- trace to 10% quartz, 30-70% k-spar								
		- many conjugate fractures ranging from 12 to 16 deg. to CA								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	Pdppb	Ptppb	Auppb	Cuppm
		Mineralization								
		- 1-5% disseminated to blebby chalcopyrite and pyrite near contact								
		- gradually drops off downhole until:								
		- 108.59 - 3cm thick chalcopyrite, pyrrhotite vein								
		- 109.12 - 2cm thick chalcopyrite,pyrrhotite, magnetite vein								
		- only trace chalcopyrite, pyrrhotite, pyrite past this point								
			2199	102.86	103.86	1.00	1308	52	71	8540
			2200	103.60	104.86	1.26	935	53	49	6880
			2201	104.86	105.86	1.00	361	23	31	3400
			2202	105.86	106.86	1.00	593	38	40	4700
			2203	106.86	107.86	1.00	329	21	14	2250
			2204	107.86	108.86	1.00	96	-15	6	877
			2205	108.86	109.86	1.00	405	31	31	2530
			2206	109.86	110.86	1.00	20	-15	2	154
			2207	110.86	111.86	1.00	14	-15	2	109
116.00	116.00	END OF HOLE								

ST. JOE CANADA DIAMOND DRILL HOLE RECORD Page 01 of

Hole No.	687.5	Northing	14+00S	Grid Orient		Depth	Dip	Azimuth	Test	Depth	Dip	Azimuth	Test	Started	NOVEMBER 30, 1987	Logged by	A.D. MacTAVISH
Property	GEORDIE LAKE	Easting	2+61W	Grid Azim.		50.0	- 38			106.4	- 37			Finished	DECEMBER 1, 1987	Checked by	
Section	14+00S	Elevation		Length (M)	106.39m									Drill Co.	FALCON	Core	
Claim No.	864022	Survey N.		Dip-Collar	-45									Drill No.		Comments:	
Target	MIN'D GAB/SY CONTACT	Survey E.		Coop Bearing	090 DEG.									Drill For.			

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct

SUMMARY

0.00	1.17	CASING
1.17	61.28	ALTERED VARI-TEXTURED GABBRO
61.28	70.15	MAGNETITE MELAGABBRO (MINERALIZED)
0.15	81.99	ALTERED VARI-TEXTURED GABBRO
81.99	87.00	MELAGABBRO TO MAGNETITE MELAGABBRO (MINERALIZED)
87.00	88.24	ALTERED GABBRO (MINERALIZED)
88.24	89.30	HORNBLENDE-PLAGIOCLASE DYKE (POSSIBLE LAMPROPHYRE)
89.30	91.18	ALTERED GABBRO (MINERALIZED)
91.18	96.89	ALKALI FELDSPAR-QUARTZ SYENITE
96.89	98.88	TRACHYTE DYKE
98.88	104.32	ALKALI FELDSPAR-QUARTZ SYENITE
.32	105.30	TRACHYTE DYKE

ST. JOE CANADA

PROPERTY - GEORDIE LAKE HOLE - 687.5 PAGE # 2

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
105.30	106.39	ALKALI FELDSPAR-QUARTZ SYENITE								
106.39	106.39	END OF HOLE								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
0.00	1.17	CASING								
1.17	61.28	ALTERED VARI-TEXTURED GABBRO - fine to very coarse grained, locally pegmatitic - grey-green to pink-grey, massive, moderate to high potassic alteration throughout, subophitic texture - 35-50% grey to green plagioclase, usually Carlsbad twinned, < 5 to 10% disseminated magnetite, 40 -60% variably altered, sometimes dendritic textured clinopyroxene - usually trace finely disseminated cp & bornite with minor pyrrhotite - locally approaches 1% - occasionally fractured at highly variable orientations - usually slightly chloritic and altered to amphiboles - some carbonate - grain size is highly variable over short distances, however average grain size is coarse to very coarse-grained - where very coarse-grained to pegmatitic, this unit exhibits pyroxene crystals that are skeletal in nature, and clusters of crystals that are dendritic or radial in form - alteration is highly variable in its effect on the unit - 10-60% potassic alteration of plagioclase grains characterized by rims of K-spar or almost totally replaced plagioclases - alteration of pyroxene to actinolite is also observed - some areas exhibit epidote - some narrow hairline fractures exhibit 2-3 mm thick potassic alteration rims								
		20.19 - 20.42 - broken, ground core								
			2208	19.62	20.62	1.00	107	-15	10	.03
			2209	20.62	21.62	1.00	635	34	36	.24
			2210	21.62	22.62	1.00	799	34	37	.41
			2211	22.62	23.62	1.00	726	34	52	.5
		43.20 - 49.50 - epidote alteration(3-5%)								
		Mineralization - 20.62 - 22.50 - 1-3% finely disseminated to blebby cp,bornite, pyrrhotite - blebs are usually composite with cp rimmed by bornite & cp - 52.35 - 53.30 - < 1 to 3% disseminated to blebby cp & some pyrrhotite - 55.17 - 55.25 - two thin(< 1-2 mm) cp & pyrrhotite stringers - 55.25 - 60.60 - < 1-2% disseminated cp, bornite, pyrrhotite								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
		- 60.60 - 61.28 - 3-8% cp, bornite, pyrrhotite (disseminated to blebby)								
			2212	51.35	52.35	1.00	68	-15	6	.04
			2213	52.35	53.35	1.00	295	-15	17	.09
			2214	53.35	54.35	1.00	148	-15	16	.05
			2215	54.35	55.35	1.00	80	21	9	.04
			2216	55.35	56.35	1.00	43	-15	2	.04
			2217	56.35	57.35	1.00	98	-15	4	.04
			2218	57.35	58.35	1.00	158	-15	4	.03
			2219	58.35	59.35	1.00	70	-15	2	.04
			2220	59.35	60.35	1.00	124	-15	10	.08
			2221	60.35	61.28	0.93	616	33	33	.23
61.28	70.15	MAGNETITE MELAGABBRO (MINERALIZED)								
		- medium to very coarse grained, massive, very dark green to black								
		- numerous coarse grained to pegmatitic gabbro patches showing potassic alteration								
		- 10-30% greenish, twinned plagioclase, 10-25% fine to coarse grained magnetite, and 45-80% occasionally altered clinopyroxene								
		- up to 10% hornblende observed occasionally								
		- upper contact diffuse over 30-40 cm								
		- fractures are common and are filled with chlorite & actinolite-no discernible preferred orientation in most - some cluster around 90 deg to core axis								
		- potassic alteration of plagioclase usually confined to gabbroic patches which are very similar to the rocks described from 1.17-61.28								
		- clinopyroxenes exhibit the same dendritic, skeletal & radial crystal textures although it is harder to detect								
		- plagioclase content increases gradually after about 66m								
		- lower contact is gradational over about 20cms								
		Mineralization								
		- 3-10% disseminated & blebly cp,bornite and some pyrrhotite from 61.28 to about 69.20								
		- 69.20-70.15 - sulphide percentage drops quickly to < 1% disseminated cp, bornite, pyrrhotite								

FROM	TO	DESCRIPTION
0.15	81.99	ALTERED VARI-TEXTURED GABBRO - similar to (1.17-61.28) - slightly more potassic alteration of plagioclase - 73.00-73.40 30% of a greenish alteration mineral (epidote?) - trace to < 1% very finely disseminated cp & minor pyrrhotite throughout most of unit with a slight increase to about 1% near lower contact - lower contact is irregular and gradational over 1-2 cms
81.99	87.00	MELAGABBRO TO MAGNETITE MELAGABBRO (MINERALIZED) - similar to (61.28-70.15) - fine to coarse-grained - fewer feldspathic patches - magnetite content varies from 5-20% locally - plagioclase content increases gradually with depth to about 35% at base of unit - lower contact relatively sharp @ 15 deg to core axis Mineralization - quite variable throughout

SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
2222	61.28	62.28	1.00	724	39	39	.25
2223	62.28	63.28	1.00	1102	50	86	.4
2224	63.28	64.28	1.00	716	39	31	.1
2225	64.28	65.28	1.00	1348	70	69	.31
2226	65.28	66.28	1.00	526	17	14	.2
2227	66.28	67.28	1.00	152	-15	10	.1
2228	69.28	70.15	0.87	812	43	10	.19
2231	70.15	71.15	1.00	108	21	12	.04
2232	71.15	72.15	1.00	110	19	13	.06
2233	72.15	73.15	1.00	65	-15	6	.04
2234	73.15	74.15	1.00	53	-15	5	.04
2235	74.15	75.15	1.00	66	-15	8	.04
2236	75.15	76.15	1.00	85	-15	6	.05
2237	76.15	77.15	1.00	193	-15	11	.14
2238	77.15	78.15	1.00	270	-15	19	.2
2239	78.15	79.15	1.00	323	15	35	.23
2240	79.15	80.15	1.00	191	-15	8	.11
2241	80.15	81.15	1.00	181	-15	7	.16
2242	81.15	81.99	0.84	91	-15	1	.08

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
		- ranges from 1-5% disseminated to blebly cp - some pyrrhotite & bornite								
			2243	81.99	82.99	1.00	816	28	26	.31
			2244	82.99	83.99	1.00	1071	47	56	.54
			2245	83.99	84.99	1.00	566	21	35	.35
			2246	84.99	85.99	1.00	173	-15	8	.14
			2247	85.99	87.00	1.01	535	26	33	.37
87.00	88.24	ALTERED GABBRO (MINERALIZED) - fine-grained,massive, sub-ophitic textured rock with strong potassic alteration - 50% potassic-altered plagioclase, 5-15% finely disseminated magnetite, and 35-45% clinopyroxene - clinopyroxene is locally altered to actinolite & chlorite near fractures - upper and lower contacts are sharp (upper at 25 deg/CA, lower irregular) Mineralization - 1-6% disseminated to blebby cp with a few < 1mm cp stringers - some minor pyrrhotite									
			2248	87.00	87.62	0.62	431	20	40	.35
			2249	87.62	88.24	0.62	480	-15	24	.42
88.24	89.30	HORNBLENDE-PLAGIOCLASE DYKE (POSSIBLE LAMPROPHYRE) - dark grey massive dyke containing 25-30% light greyish-green plagioclase phenocrysts (lath-shaped) up to 3cm long and 20-25% altered, euhedral hornblende phenocrysts up to .5 cm in diameter - matrix is extremely fine-grained (aphanitic) - carbonate stringers occur near upper contact (< 1-2 mm in diameter) @ 65 deg to core axis - lower contact sharp, but very irregular									
			2250	88.24	89.30	1.06	12	20	11	.08
89.30	91.18	ALTERED GABBRO (MINERALIZED) - the same as 87.00-88.24								

ST. JOE CANADA

DIAMOND DRILL HOLE RECORD

Hole No.	687.8	Northing	L22+00S	Grid Orient		Depth	Dip	Azimuth	Test	Depth	Dip	Azimuth	Test	Started	06/12/87	Logged by	J. Paul
Property	GEORDIE LAKE	Easting	3+30W	Grid Azim.		47.8	- 38							Finished	07/12/87	Checked by	
Section		Elevation		Length (M)	47.80									Drill Co.	Falcon Drilling	Core	RQ
Claim No.	864005	Survey N.	L22+00S	Dip-Collar	-45.00									Drill No.		Comments:	
Target	MIN'D GR/SY CONTACT	Survey E.	3+30W	Comp Bearing	90.00									Drill For.			

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct

SUMMARY

0.00	3.82	CASING
3.82	10.21	MELAGABBRO
10.21	20.10	GABBRO
20.10	28.64	MELAGABBRO (Mineralized)
28.64	30.61	GABBRO (Mineralized)
30.61	37.56	ALKALI-FELDSPAR QUARTZ SYENITE AND ALTERED GABBRO
37.56	47.80	ALKALI FELDSPAR QUARTZ SYENITE
47.80	47.80	END OF HOLE

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
0.00	3.82	CASING								
3.82	10.21	MELAGABBRO - coarse-grained, dark grey in colour, massive, some fractures - 30-35% greyish plagioclase laths, 3-5% fine-grained magnetite, 0-5% black amphiboles, 50-67% clinopyroxene, often altered to actinolite - very minor patches of potassic alteration of plagioclase-tends to occur in slightly coarser areas Mineralization - ranges from trace to <=0.5% - predominantly disseminated chalcopyrite - up to 3% cp and po along some fractures - grain size decreases towards end of interval into medium-grained								
10.21	20.10	GABBRO - fine to locally medium-grained, grey in colour, massive with some irregularly oriented fractures - composed of 35-45% plagioclase, occassionally altered to potassium feldspar, 0-5% finely disseminated magnetite, 50-65% black pyroxene - fractures show no preferred orientation- often filled with chlorite and have more potassic alteration - 17.30- fracture at 48 degrees to core axis, filled with up to 10% cpy 18.58 - 18.80 - up to 0.5% disseminated cpy surrounded by green alteration haloes 19.47 - 19.69 - extremely highly altered - chlorite, potassically altered and calcareous along fractures 19.69 - 20.10 - grades into medium to coarse-grained								
20.10	28.64	MELAGABBRO (Mineralized) - medium to coarse-grained, dark grey in colour, massive - composed of 15-20% plagioclase, 2-3% finely disseminated magnetite, 77-83% clinopyroxene, commonly altered to green actinolite - potassic alteration absent except along some fractures								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
		- fractures uncoemon - no preferred orientation - calcareous or chloritic								
		Mineralization - 20.53-20.89- trace to 0.5% disseminated cpy - 20.89-23.00- nil to trace sulphides, disseminated bornite and cpy along one chlorite fracture (48 degrees to core axis) at 21.57 - 25.90-26.60 - trace -0.5% disseminated cpy - 26.60 -28.64 - 3-8% cpy - coarsely and finely disseminated, blebby and stringers								
			2367	21.89	22.90	1.01	562	41	52	.18
			2368	22.90	23.90	1.00	1099	63	74	.38
			2369	23.90	24.90	1.00	908	47	58	.46
			2370	24.90	25.90	1.00	2186	104	124	.9
			2371	25.90	26.60	0.70	1471	80	86	.42
			2372	26.60	27.60	1.00	1050	53	63	.39
			2373	27.60	28.64	1.04	1204	72	79	.43
28.64	30.61	GABBRO (Mineralized) - medium-grained, greyish in colour, massive (few fractures) - 45-60% plagioclase laths, 40-55% pyroxenes - fractures randomly oriented and slightly to non-calcareous - some potassic alteration towards base of interval Mineralization - 28.64-30.61 - same as interval 26.60 to 28.64								
			2374	28.64	29.64	1.00	737	43	109	.56
			2375	29.64	30.61	0.97	688	52	76	.75
30.61	37.[redacted]	ALKALI-FELDSPAR QUARTZ SYENITE AND ALTERED GABBRO - core alternates between syenite and gabbroic and altered gabbroic rocks - syenite generally orangy in colour, fine to medium-grained - 50-60% reddish - orange alkali feldspar, 35-45 mafics and 5-10% quartz - large number of fractures- prominent set at approx. 12 to 24 degrees to C.A. - fractures are commonly fenitized or calcareous								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
		- contacts beetween gabbroic and syenitic rock are gradational - gabbroic material is roughly 50% plagioclase or potassically altered plagioclase and 50% mafics (pyroxenes) - approximate intervals are: - 30.61-32.71m - syenitic - 32.71-32.85m - gabbroic - 32.85-33.12m - syenitic - 33.12-34.04m - gabbroic - 34.04-34.58m - syenitic - 34.85-37.23m - gabbroic - 37.23-37.56m - very mafic syenite - extremely altered gabbro - 37.79-39.71m - only has 0.63m of core and lots of rubble from 38.24 - 39.54m Mineralization - only occurs approximately 10cm into syenite - 30.61-30.71m - 0.5% chalcopyrite - also trace - 0.5% chalcopyrite - finely disseminated in gabbroic areas							
			2376	30.61	31.61	1.00	56	15	8	.06
			2377	31.61	32.71	1.10	49	-15	4	.05
			2378	32.71	33.71	1.00	3	-15	-1	.01
			2379	33.71	34.71	1.00	-2	-15	-1	.01
			2380	34.71	35.71	1.00	5	-15	-1	-.01
			2381	35.71	36.71	1.00	-2	-15	1	.01
			2382	36.71	37.56	0.85	-2	-15	-1	.01
37.56	47.80	ALKALI FELDSPAR QUARTZ SYENITE - similar to interval 30.61-32.71m with locally very fine-grained patches - extremely fractured with prominent set at 15 - 20 deg. and secondary set at 50 - 65 deg.								
			2383	37.56	39.56	2.00	-2	-15	-1	-.01
			2384	39.56	40.56	1.00	19	-15	-1	.03
47.80	47.80	END OF HOLE								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
		Mineralization								
		- same as 87.00-88.24								
			2251	89.30	90.30	1.00	464	30	30	.35
			2252	90.30	91.18	0.88	332	31	23	.2
91.18	96.89	ALKALI FELDSPAR-QUARTZ SYENITE								
		- fine to medium-grained, pink, massive to locally heavily fractured rock								
		- trace-10% quartz, 40-70% k-spar, 20-50% clinopyroxene, locally altered to actinolite and chlorite along numerous irregular hairline fractures (fenitization)								
			2253	91.18	92.18	1.00	82	-15	7	.08
			2254	92.18	93.18	1.00	160	-15	21	.11
			2255	93.18	94.18	1.00	29	-15	4	.02
	94.86 - 95.10	- broken and fractured rock								
		- lower contact sharp @ 18 deg/CA								
96.89	98.88	TRACHYTE DYKE								
		- very fine-grained syenite dyke with small 1-3mm K-spar phenocrysts								
		- pinkish-grey, massive								
		- matrix composed of 50/50% K-spar and clinopyroxene								
		- upper and lower contacts sharp & chilled;lower one in broken rock, difficult to get orientation								
98.88	104.32	ALKALI FELDSPAR-QUARTZ SYENITE								
		- identical to 91.18-96.89								
	102.93 - 103.63	- very fine-grained (aphanitic), chloritic mafic dyke								
		- subparallel to core axis								
104.32	105.30	TRACHYTE DYKE								
		- similar to 96.89-98.88								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
105.30	106.39	ALKALI FELDSPAR-QUARTZ SYENITE - identical to 91.18-96.89								
106.39	106.39	END OF HOLE								

ST. JOE CANADA

DIAMOND DRILL HOLE RECORD

Hole No.	687.6	Northing	L12+00S	Grid Orient		Depth	Dip	Azimuth	Test	Depth	Dip	Azimuth	Test	Started	December 2, 1987	Logged by	A.D. MacTavish
Property	GEORDIE LAKE	Easting	2+25W	Grid Azim.		50.0	- 38							Finished	December 4, 1987	Checked by	
Section		Elevation		Length (M)	103.85									Drill Co.	Falcon Drilling	Core	BQ
Claim No.	864022	Survey N.		Dip-Collar	-45.00									Drill No.		Comments:	
Target	MIN'D GB/SY CONTACT	Survey E.		Comp Bearing	90.00									Drill For.			

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct

SUMMARY

0.00	1.00	CASING
1.00	10.09	INTERLAYERED ALTERED VARI-TEXTURED GABBRO AND MELAGABBRO
11.09	28.56	ALTERED VARI-TEXTURED GABBRO
28.56	35.36	GABBRO TO MELAGABBRO (Mineralized)
35.36	43.58	ALTERED GABBRO
43.58	44.40	MELAGABBRO (Mineralized)
44.40	54.40	ALTERED VARI-TEXTURED GABBRO
54.40	58.66	GABBRO TO MAGNETITE MELAGABBRO
58.66	67.96	ALTERED VARI-TEXTURED GABBRO
67.96	69.72	MELAGABBRO (Mineralized)
69.72	79.91	ALTERED GABBRO TO MELAGABBRO
79.91	89.79	MELAGABBRO (Mineralized)

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
89.79	90.31	HYBRIDIZED ALKALI-FELDSPAR QUARTZ SYENITE								
90.31	90.98	ALTERED MELAGABBRO (Mineralized)								
90.98	103.85	ALKALI-FELDSPAR QUARTZ SYENITE								
103.85	103.85	END OF HOLE								

FROM	TO	DESCRIPTION
0.00	1.00	CASING
1.00	10.09	INTERLAYERED ALTERED VARI-TEXTURED GABBRO AND MELAGABBRO - an intimate, gradational alternation between grey to pinkish, medium to very coarse-grained massive, potassically-altered (patchy) gabbro and a slightly to moderately altered dark grey, medium to very coarse-grained melagabbro - all contacts are gradational over 10-15cm - the altered vari-textured gabbro is composed of 35 - 45% usually k-spar-rimmed plagioclase crystals, 5-10% disseminated magnetite, and 45-60% black clinopyroxene (augite?), locally altered to greenish actinolite - the melagabbro is composed of 25 - 35% sometimes k-spar-rimmed plagioclase, 5 - 10% disseminated magnetite and 55 - 70% occasionally altered clinopyroxene - potassic alteration is much less intense within the melagabbro - the melagabbro is also locally slightly to moderately well mineralized - melagabbro units occur at 4.35-5.15m; 5.39-6.06m; 7.75-9.00m; 9.57-10.09m Mineralization - best mineralization occurs within or near the melagabbro units as disseminations and blebs and narrow stringers along thin shears - 1.00 - 4.35m - trace very finely disseminated chalcopyrite (minor pyrrhotite) - 4.35-5.39m - <1 to locally 2-3% disseminated to blebby chalcopyrite, some bornite - 5.39-6.06m - 2-4% disseminated to blebby chalcopyrite, bornite and some hair thin chalcopyrite stringers - 6.06-7.75m - trace to <1% disseminated chalcopyrite (pyrrhotite) - 7.75-9.00m - 1-5% disseminated, blebby and stringer chalcopyrite, bornite - narrow 1-3mm thick chalcopyrite, bornite stringer, irregular but roughly subparallel to CA for most of this unit - 9.00-10.09m - trace to 1% finely disseminated to small blebs chalcopyrite (minor pyrrhotite)

SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
2256	3.35	4.35	1.00	212	22	15	.1
2257	4.35	5.39	1.04	330	-15	25	.24
2258	5.39	6.06	0.67	878	55	52	1.04

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
			2259	6.06	7.00	0.94	178	-15	15	.21
			2260	7.00	7.75	0.75	592	31	33	.39
			2261	7.75	8.40	0.65	3650	235	38	1.34
			2262	8.40	9.00	0.60	149	-15	13	.27
			2263	9.00	10.09	1.09	97	-15	7	.04
			2264	10.09	11.09	1.00	59	-15	8	.04
11.09	28.56	ALTERED VARI-TEXTURED GABBRO - similar to altered vari-textured gabbro described in the unit located at 1.00 - 10.09m except that there are no distinctly separate melagabbro units enclosed within it - alteration is quite variable throughout unit - ranging from <5% to greater than 50% potassic alteration of plagioclase feldspars - major portion >30% alteration - fracturing occurs occasionally with one set ranging between 3 and 16 deg. to CA and another set at between 32 and 38 deg. to CA - other fractures occur but are irregular in nature - fractures at 3 to 16 deg. to CA tend to contain hair thin carbonate stringers and are quite chloritic, possibly indicating some shearing - sulphides range from trace to <1% finely disseminated chalcopyrite and some pyrrhotite - plagioclase content decreases gradually with depth as does potassic alteration - upper contact relatively gradational - over 5-10cm - lower contact gradational over 2-3cm									
			2265	26.56	27.56	1.00	33	-15	4	.04
			2266	27.56	28.56	1.09	30	-15	3	.03
28.56	35.36	GABBRO TO MELAGABBRO (Mineralized) - dark greenish-grey to dark grey, medium to locally very coarse-grained, massive, unaltered to slightly altered rock - 20 - 40% greenish to greyish plagioclase, 5-10% disseminated magnetite and 50-75% slightly altered clinopyroxene - pyroxenes are skeletal, dendritic and radial in crystal form - plagioclase content varies considerably over short distances Mineralization - varies considerably throughout unit:									

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
		- 28.56-29.39m - trace to <1% very finely disseminated chalcopyrite								
		- 29.39-30.86m - 1-3% disseminated to blebby chalcopyrite with some bornite								
		- 30.86-33.62m - up to 1% disseminated to locally blebby chalcopyrite								
		- 33.62-34.38m - 1-4% bornite and chalcopyrite - finely disseminated to blebby								
		- 34.38-35.36m - <1% to locally 2% chalcopyrite - disseminated to small blebs								
			2267	28.56	29.39	0.83	42	-15	9	.03
			2268	29.39	30.10	0.71	267	15	20	.1
			2269	30.10	30.86	0.76	480	36	22	.1
			2270	30.86	31.86	1.00	139	22	6	.04
			2271	31.86	32.86	1.00	378	26	22	.11
			2272	32.86	33.62	0.76	317	23	16	.05
			2273	33.62	34.38	0.76	1462	79	121	.35
			2274	34.38	35.36	0.98	351	31	26	.1
35.36	43.58	ALTERED GABBRO								
		- coarse to very coarse-grained, locally pegmatitic, massive, pinkish-grey in colour								
		- 20-40% of plagioclase is rimmed by k-spar due to potassic alteration								
		- 40-55% greyish to greenish rimmed plagioclase, 5-10% disseminated magnetite, 45-55% black clinopyroxene								
		- few fractures throughout most of unit, however at 42.73-43.29m an irregular vein, narrow shear, or shear fracture cuts through the core subparallel to CA								
		- slickensides are readily observable within the chloritic sides of the feature								
			2275	35.36	36.36	1.00	149	19	17	.06
			2276	36.36	37.36	1.00	48	-15	6	.04
			2277	37.36	38.36	1.00	76	-15	7	.05
			2278	38.36	39.36	1.00	68	-15	8	.04
	39.46 -	40.12 - a marginally melagabbro unit which is gradational with surrounding gabbro								
		- 20-30% alteration of pyroxene to actinolite								
		Mineralization								
		- most of unit has trace to <1% very finely disseminated chalcopyrite (pyrrhotite)								
		- a few areas had some enrichment:								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
		- 35.36-35.75m - approx. 1% blebby chalcopyrite								
		- 39.46-40.12m - <1 to 1% disseminated chalcopyrite with a couple of hair thin chalcopyrite stringers								
		- 40.20-40.50m - slightly sheared and chloritic gabbro with 1-2% hair thin chalcopyrite stringers								
			2279	39.36	40.20	0.84	131	-15	9	.04
			2280	40.20	40.70	0.50	124	-15	7	.09
			2281	40.70	41.70	1.00	58	-15	5	.03
			2282	41.70	42.70	1.00	78	-15	7	.04
			2283	42.70	43.58	0.88	111	-15	5	.05
43.58	44.40	MELAGABBRO (Mineralized)								
		- similar to 28.56-35.36m								
		- rock is variable in plagioclase content								
		- gradational contacts on either end of unit								
		Mineralization								
		- <1 to locally 3% disseminated to blebby, very locally hairline stringers of chalcopyrite (bornite)								
			2284	43.58	44.40	0.82	284	18	20	.19
44.40	54.40	ALTERED VARI-TEXTURED GABBRO								
		- similar to 11.09-28.56m								
		- occasionally fractured, sometimes at about 90 deg. to CA and other times at between 15 - 30 deg. to CA								
		- quite chloritic along some irregular fractures near 53.00m								
		- trace very finely disseminated chalcopyrite (pyrrhotite)								
			2285	44.40	45.40	1.00	126	16	12	.09
			2286	45.40	46.40	1.00	71	-15	7	.06
			2287	53.40	54.40	1.00	58	-15	6	.04
54.40	58.66	GABBRO TO MAGNETITE MELAGABBRO								
		- similar to 28.56-35.36m								
		- upper contact relatively diffuse and irregular								
		- lower contact quite gradational - grades into an altered unit								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
		- plagioclase content and amount of potassic alteration increase with depth								
		Mineralization								
		- sporadic throughout unit								
		- 54.50-54.91m - 1-4% disseminated to blebby chalcopyrite and bornite - most are composite grains								
		- rest of unit ranges from trace to 1% chalcopyrite (bornite)								
			2288	54.40	55.40	1.00	291	-15	22	.09
			2289	55.40	56.40	1.00	92	-15	7	.03
			2290	56.40	57.40	1.00	130	-15	4	.05
			2291	57.40	58.40	1.00	65	-15	2	.05
58.66	67.96	ALTERED VARI-TEXTURED GABBRO								
		- similar to 44.40-54.40m								
		- <1% finely disseminated sulphides until near lower contact								
		- 67.60-67.96m - 1-3% disseminated to blebbly chalcopyrite								
			2292	58.40	59.40	1.00	45	-15	-1	.05
			2293	65.96	66.96	1.00	50	-15	3	.05
			2294	66.96	67.96	1.00	137	-15	12	.11
67.96	69.72	MELAGABBRO (Mineralized)								
		- locally becomes a magnetite melagabbro with 10-20% disseminated magnetite								
		- similar to 43.58-44.40m - fewer altered plagioclase-rich patches								
		Mineralization								
		- 1-3% disseminated to blebby composite grains of bornite and chalcopyrite								
		- upper and lower contacts are both diffuse								
			2295	67.96	68.96	1.00	368	18	30	.25
			2296	68.96	69.72	0.76	142	-15	9	.09
69.72	79.91	ALTERED GABBRO TO MELAGABBRO								
		- similar to 28.56-35.36m								
		- plagioclase content and potassic alteration decrease with depth								
		- rock grades in and out of gabbro and melagabbro with very								

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
		gradational contacts - locally a subophitic texture is visible - generally trace to <1% disseminated chalcopyrite, however there are a few minor concentrations near 1% chalcopyrite, specifically near melagabbro zones - sulphides increase after 77.70m Mineralization - 77.70-79.91m - <1 to locally 2% chalcopyrite, bornite as disseminations, blebs and locally along fractures as thin discontinuous smears								
			2297	69.72	70.72	1.00	51	-15	-1	.05
			2298	70.72	71.72	1.00	33	-15	-1	.04
			2299	71.72	72.72	1.00	115	-15	7	.09
			2300	72.72	73.72	1.00	171	-15	5	.05
			2301	73.72	74.72	1.00	112	-15	5	.06
			2302	74.72	75.72	1.00	69	-15	3	.05
			2303	75.72	76.70	0.98	354	22	20	.11
			2304	76.70	77.70	1.00	331	28	30	.15
			2305	77.70	78.70	1.00	428	35	19	.18
			2306	78.70	79.30	0.60	504	33	26	.4
			2307	79.30	79.91	0.61	727	46	56	.39
79.91	89.79	MELAGABBRO (Mineralized) - similar to 67.96-69.72m - more mineralization - localized feldspathic patches that exhibit potassic alteration - clinopyroxenes exhibit good skeletal, dendritic and radial textures Mineralization - variable, but usually over 2% - always a finely disseminated background of 1-2% chalcopyrite and bornite - 2-4%,locally 8% bornite and chalcopyrite in small to large composite blebs - lower contact is gradational over 4-5cm - altered plagioclase content increases rapidly near contact									
			2308	79.91	80.91	1.00	1174	66	92	.63
			2309	80.91	81.91	1.00	1455	97	80	.84

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
			2310	81.91	82.91	1.00	614	39	46	.34
			2311	82.91	83.91	1.00	1865	87	122	.96
			2312	83.91	84.91	1.00	1073	49	78	.51
			2313	84.91	85.91	1.00	1486	67	110	.76
			2314	85.91	86.91	1.00	1001	79	66	.24
			2315	86.91	87.91	1.00	719	42	38	.33
			2316	87.91	88.91	1.00	934	46	40	.45
			2317	88.91	89.79	0.88	356	21	18	.25
89.79	90.31	HYBRIDIZED ALKALI-FELDSPAR QUARTZ SYENITE - 40-50% pink to orange k-spar and 50% black clinopyroxene - massive fine to locally medium-grained - large number of irregular amphibole and chlorite-bearing fractures - fenitization - 0-10% quartz - locally mineralized along fractures - 1-2% localized chalcopyrite								
			2318	89.79	90.31	0.52	734	38	36	.33
90.31	90.98	ALTERED MELAGABBRO (Mineralized) - similar to 79.91-89.79m except that plagioclase has locally been altered by potassic alteration - 3-6% disseminated to blebby, locally thin stringers of chalcopyrite - upper and lower contacts irregular but sharp; possible xenolith?								
			2319	90.31	90.98	0.67	647	36	31	.4
90.98	103.85	ALKALI-FELDSPAR QUARTZ SYENITE - fine to medium-grained, pink in colour, massive to locally fractured - numerous irregular fenitized fractures (1-3mm in thickness) exhibiting amphibole and chlorite - conjugate fractures common at 30-40 deg. to CA - 60-80% k-spar, 0-5% magnetite, 15-40% clinopyroxene and trace chalcopyrite and pyrrhotite								
			2320	90.98	91.98	1.00	6	-15	2	.01
			2321	91.98	92.98	1.00	2	-15	-1	.02
			2322	92.98	95.98	3.00	227	18	22	.2

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
103.85	103.85	END OF HOLE								

ST. JOE CANADA

DIAMOND DRILL HOLE RECORD

Hole No.	G-87-7	Northing	L21+03S	Grid Orient	090	Depth	Dip	Azimuth	Test	Depth	Dip	Azimuth	Test	Started	December 5/87	Logged by	A.D. MacTavish
Property	GEORDIE LAKE	Easting	2+99W	Grid Azim.	0									Finished	December 6/87	Checked by	
Section		Elevation		Length (M)	61.26									Drill Co.	Falcon	Core	BQ
Claim No.	864005	Survey N.		Dip-Collar	-45									Drill No.		Comments:	
Target	MIN'D GB/SY CONTACT	Survey E.		Comp Bearing										Drill For.			

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct

SUMMARY

0.00	1.43	CASING
1.43	13.23	MAGNETITE MELAGABBRO (MINERALIZED)
13.23	22.27	MELAGABBRO TO MAGNETITE MELAGABBRO
22.27	31.60	GABBRO
31.60	41.76	MELAGABBRO TO MAGNETITE MELAGABBRO (SLIGHTLY TO MODERATELY MINERALIZED)
41.76	42.23	MIXED ZONE (MINERALIZED)
42.23	62.26	ALKALI-FELDSPAR QUARTZ SYENITE
62.26	62.26	END OF HOLE

FROM	TO	DESCRIPTION
0.00	1.43	CASING
1.43	13.23	MAGNETITE MELAGABBRO (MINERALIZED) - Fine to locally medium-grained, massive, dark grey in colour, alteration observed locally - 15-35% greenish, twinned plagioclase, 10 to 20% finely disseminated magnetite, 45-75% clinopyroxene (poss-augite) - pyroxene sometimes alters to actinolite - potassic alteration occurs where concentrations of medium to coase-grained plagioclase- produces k-spar while rimming the plagioclase laths - coarser grain size may be due to alteration process - alteration of pyroxene to actinolite is quite common locally - fractures observed occasionally with no apparent preferred orientation - fractures usually lined by chlorite - grain size increases very gradually near base of unit - lower contact is gradational over 3 or 4cm Mineralization - percentage of mineralization is quite variable throughout unit - 1.43-2.41: 1 to locally 3-4% finely disseminated to coarse blebby cp (minor po) - 2.41-3.19: 10-20% disseminated to coarse blebby, to veins of cp - cp rich syenite veinlet 1-1.5cm thick crosscuts the core at about 7 degrees to core axis - 3.19-5.42: about 1 to locally 3% disseminated to blebby cp - 6.48: 2mm thick cp veinlet at 18 degrees to core axis - 7.69-10.13: general 1% very finely disseminated cp - occasional small zones with up to 3% small blebs cp - 10.13-14.09: <1% very finely disseminated cp (very minor po)

SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
2323	1.43	2.41	0.98	222	24	24	.22
2324	2.41	3.19	0.78	684	55	89	1.5
2325	3.19	4.18	0.99	100	-15	7	.12
2326	4.19	4.80	0.61	117	-15	12	.1
2327	4.80	5.42	0.62	178	-15	15	.12
2328	5.42	6.42	1.00	382	31	28	.33

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
			2329	6.42	7.02	0.60	336	22	32	.32
			2330	7.02	7.69	0.67	489	25	26	.24
			2331	7.69	8.69	1.00	122	-15	8	.09
			2332	8.69	9.69	1.00	358	-15	18	.14
			2333	9.69	10.69	1.00	567	30	33	.26
			2334	10.69	11.69	1.00	539	28	30	.17
			2335	11.69	12.69	1.00	634	38	32	.15
			2336	12.69	13.23	0.54	357	31	31	.14
13.23	22.27	MELAGABBRO TO MAGNETITE MELAGABBRO - Coarse to very coarse-grained, massive dark grey rock, exhibiting small localized patches of potassic alteration - 20-35% green plagioclase, 5-15% disseminated magnetite, 50-75% black, skeletal, dendritic and sometimes radical textured clinopyroxene - few fractures observed - potassic alteration occurs within areas of slightly increased plagioclase percentage - magnetite percentage is quite variable locally - trace very finely disseminated cp	2337	13.23	14.23	1.00	184	19	15	.06
		18.67 - 18.86 - Irregular, very chloritic shear, slickensides well-developed								
22.27	31.60	GABBRO - Fine to medium-grained, massive, locally fractured, slightly altered potassically and the formation of actinolite from clinopyroxe - most of unit has a subophitic texture - 35-45% green plagioclase, 5-10% magnetite (locally),45-60% slightly altered black clinopyroxene - most potassic alteration occurs near fractures and narrow veinlets - some fractures are irregular with no particular orientation, usually quite chloritic, other fractures are also chloritic but range from 12-30 degrees to core axis - others are subparallel to core axis and some are almost perpendicular to core axis - potassic alteration tends to increase with depth until 30.70m where it basically disappears - plagioclase content starts to drop off after 30.70m and the gabbro grades into melagabbro at about 31.60m									

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
		- trace to near 1% very finely disseminated cp (po)								
		- 31.55--chloritic sheared zone at 90 deg to core axis								
			2338	28.60	29.60	1.00	37	-15	6	.03
			2339	29.60	30.60	1.00	84	-15	6	.08
			2340	30.60	31.60	1.00	101	-15	9	.08
31.60	41.76	MELAGABBRO TO MAGNETITE MELAGABBRO (SLIGHTLY TO MODERATELY MINERALIZED)								
		- similar to 13.23-22.27m except that it ranges from fine to coarse-grained and is oikocrystic								
		- plagioclase content drops as low as 10%								
		- unit is locally fractured and sheared								
			2341	31.60	32.40	0.80	357	22	26	.19
			2342	32.40	33.40	1.00	619	42	50	.23
			2343	33.40	34.40	1.00	736	33	31	.09
			2344	34.40	35.40	1.00	495	31	37	.15
	35.81 - 36.88	- zone of much fracturing and some shearing at about 36 to 41 deg. to core axis	2345	35.40	36.40	1.00	888	38	50	.58
		- area is chloritized as are all fracture surfaces observed								
		- other fractures in unit have similar orientation								
		Mineralization								
		- is quite variable throughout unit:								
		- 31.60-32.40: 2-3% disseminated to blebby cp and bornite, locally narrow 1-2cm zones of 5-8% cp (born)								
		- 32.40-39..63: trace to 1%, locally 2% finely disseminated cp, bornite								
		- 39.63-41.76: 2-7% finely disseminated to coarse blebby, local stringers of cp with some bornite								
		- some blebs are 1cm in diameter and are usually composite cp/born grains								
		- much of finely disseminated cp and born occurs within diffuse concentrated zones 2-4cm in diameter								
		- numerous hairline stringers throughout								
		- 41.71: 1-2cm cp veinlet at 75 deg at 75 deg. to core axis								
			2346	36.40	37.40	1.00	811	39	48	.52
			2347	37.40	38.40	1.00	902	31	45	.27

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
			2348	38.40	39.00	0.60	473	15	24	.1
			2349	39.00	39.63	0.63	712	34	41	.24
			2350	39.63	40.63	1.00	2034	87	100	.75
			2351	40.63	41.18	0.55	1230	47	51	.19
			2352	41.18	41.76	0.58	708	23	233	.72
41.76	42.23	MIXED ZONE (MINERALIZED) - Hybridized syenite which has assimilated gabbro and sulphides - pinkish grey, massive, fine-grained rock composed of highly variable amounts of plagioclase and k-feldspar, and k-feldspar rimmed plagioclase and clinopyroxene, usually altered to actinolite Mineralization - 1-10% disseminated to blebby cp								
			2353	41.76	42.23	0.47	269	-15	30	.36
42.23	62.26	ALKALI-FELDSPAR QUARTZ SYENITE - Fine to medium-grained, massive to highly broken and fractured locally - numerous irregular fenitized fractures throughout unit - composed of 40-70% k-feldspar, 5% magnetite and 30-45% clinopyroxene - clinopyroxene content drops off somewhat with depth - 0-10% quartz - some fractures are at about 31 degrees to core axis and others at 0 to 5 deg. to core axis - broken rock at 41.82 to 41.96m, 47.6 to about 48.60m, 49.00 to about 49.50 - seems like a lot Mineralization - quite variable: - 41.23-54.10: 1-10% disseminated locally blebby chalcopyrite associated with fractures and fenitized zones - content gradually decreases with depth.								
			2354	42.23	43.23	1.00	11	-15	2	.01
			2355	43.23	44.23	1.00	-2	-15	-1	.01
			2356	44.23	45.23	1.00	24	-15	-1	.42
			2357	45.23	46.23	1.00	153	-15	7	.27

FROM	TO	DESCRIPTION	SAMPLE	FROM	TO	WIDTH	PDppb	PTppb	Auppb	Cu pct
			2358	46.23	47.23	1.00	26	-15	-1	.03
			2359	47.23	48.23	1.00	310	-15	9	.4
			2360	48.23	49.23	1.00	174	-15	7	.17
			2361	49.23	50.23	1.00	43	-15	3	.05
			2362	50.23	51.23	1.00	-2	-15	-1	-.01
			2363	51.23	52.23	1.00	302	-15	32	.25
			2364	52.23	53.23	1.00	185	-15	12	.15
			2365	53.23	54.23	1.00	705	34	84	1.49
			2366	54.23	55.23	1.00	6	-15	2	.01
62.26	62.26	END OF HOLE								

W8800400569

Ministry of Northern Development and Mines
Ontario

Report of Work
(Geophysical, Geological, Geochemical and Expenditures)

DOCL W88
Mining

42D16SE0020 2.11743 SEELEY LAKE

900

Type of Survey(s)	Township or Area
Geochemical	Seeley Lake G-613

Claim Holder(s)	Prospector's Licence No.
Bond Gold Canada Inc	T-3608

Address: 1100-20 Adelaide St East Toronto Ont M5C 2T6

Survey Company	Date of Survey (from & to)	Total Miles of line Cut
Bond Gold Canada Inc.	20 Day / 11 Mo. / 87 Yr. — 8 Day / 12 Mo. / 87 Yr.	

Name and Address of Author (of Geo-Technical report)
A. MacTavish, Bond Gold Canada Inc, Box 1161, Thunder Bay, Ont. P7C 4X9

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical - Electromagnetic	
	Geophysical - Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	Geophysical - Radiometric	
	Geophysical - Other	
	Geological	
	Geochemical	
Man Days	Geophysical	Days per Claim
Complete reverse side and enter total(s) here	Electromagnetic	
	Magnetometer	
	Radiometric	
	Other	
	Geological	
	Geochemical	
Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

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1988

ONTARIO GEOLOGICAL SURVEY
ASSESSMENT FILES
OFFICE
DEC 14 1988
RECEIVED

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
TB	864006	32
	864023	20
	864025	20
	864026	20
	864027	20
	864064	20
	864065	20
	864066	20
	864067	20
	864068	20
	864070	20
	864098	30
	864099	20
	929254	20
	939266	20
	864004	20
	864005	20
	864022	20
	864069	20
	864071	20
	864072	20
	864073	20
	864100	20

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
TB	864132	20
	864133	20
	929252	20
	929253	20
	864131	20
	864157	20
	864158	20
	864159	20
	940277	20
	940278	20
	940279	20
	940280	20
	940281	20
	864074	20
	864075	20
	864076	20
	864077	20
	864078	20
	864079	20
	864080	20
	864081	20
	864082	20
	864083	20

(cont'd on next page)

Total number of mining claims covered by this report of work: 48

Expenditures (excludes power stripping)

Type of Work Performed	Performed on Claim(s)
Analyses	864004, 864005, 864022

Calculation of Expenditure Days Credits

Total Expenditures		Days Credits
$ 14,738.30	÷ 15 =	982

Instructions
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Date	Recorded Holder or Agent (Signature)
Oct. 19/88	R. Jowett

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
982	October 25 1988	
	Date Approved as Recorded	Branch Director
	9 Dec 88	

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying	Date Certified	Certified by (Signature)
Robin Jowett Box 385, Rockwood, Ont N0B 2K0	Oct 19/88	R. Jowett

1362 (85/12)

Ontario

Ministry of Northern Development and Mines

Report of Work

(Geophysical, Geological, Geochemical and Expenditures)

Mining Act

Instructions: — Please type or print.
— If number of mining claims traversed exceeds space on this form, attach a list.

Note: — Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.
— Do not use shaded areas below.

Type of Survey(s)	Township or Area

Claim Holder(s)	Prospector's Licence No.

Address

Survey Company	Date of Survey (from & to) Day | Mo. | Yr. | Day | Mo. | Yr.	Total Miles of line Cut

Name and Address of Author (of Geo-Technical report)

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical	
	· Electromagnetic	
	· Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	· Radiometric	
	· Other	
	Geological	
	Geochemical	

Man Days		Days per Claim
Complete reverse side and enter total(s) here	Geophysical	
	· Electromagnetic	
	· Magnetometer	
	· Radiometric	
	· Other	
	Geological	
	Geochemical	

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
TB	864084	20			
	864085	20			

...CEIVED
OCT 25 1988

Total number of mining claims covered by this report of work. [illegible]

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures				Total Days Credits
$	÷	15	=	

Instructions

Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

For Office Use Only		
Total Days Cr. Recorded	Date Recorded	Mining Recorder
	Date Approved as Recorded	Branch Director

Date	Recorded Holder or Agent (Signature)
Oct 24/88	[signature]

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying

Date Certified	Certified by (Signature)
Oct 24/88	[signature]

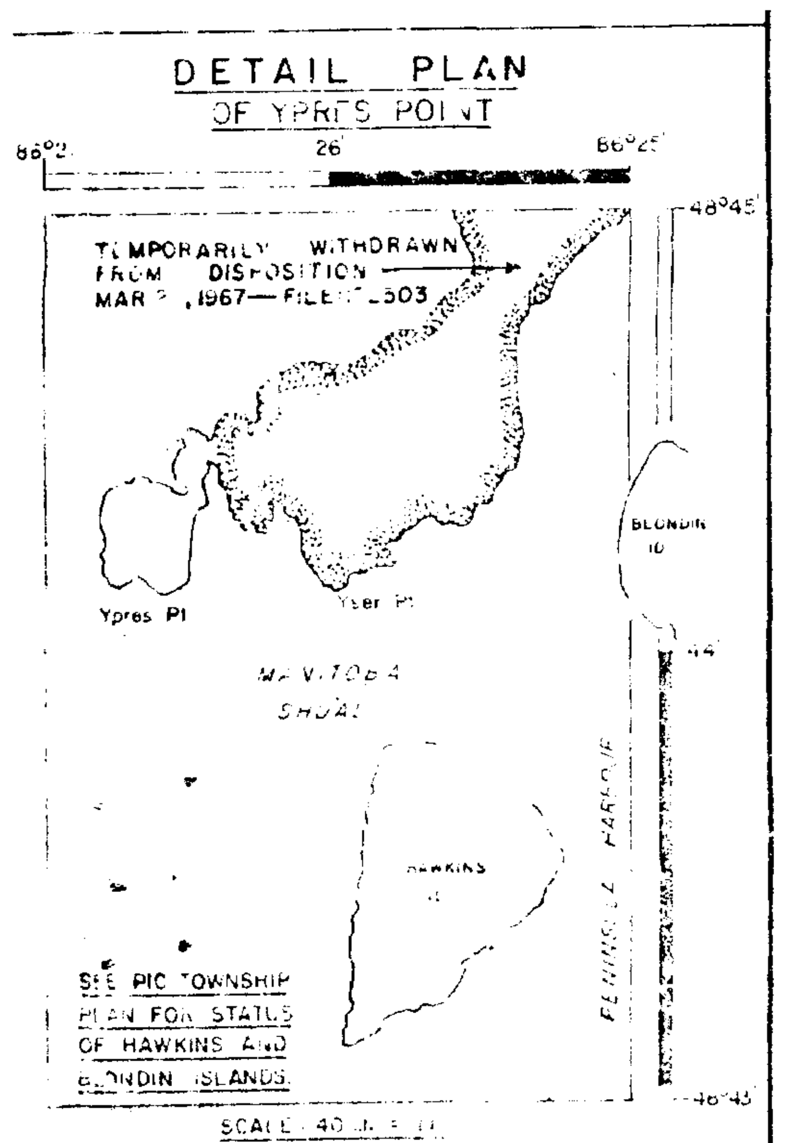
362 (85/12)

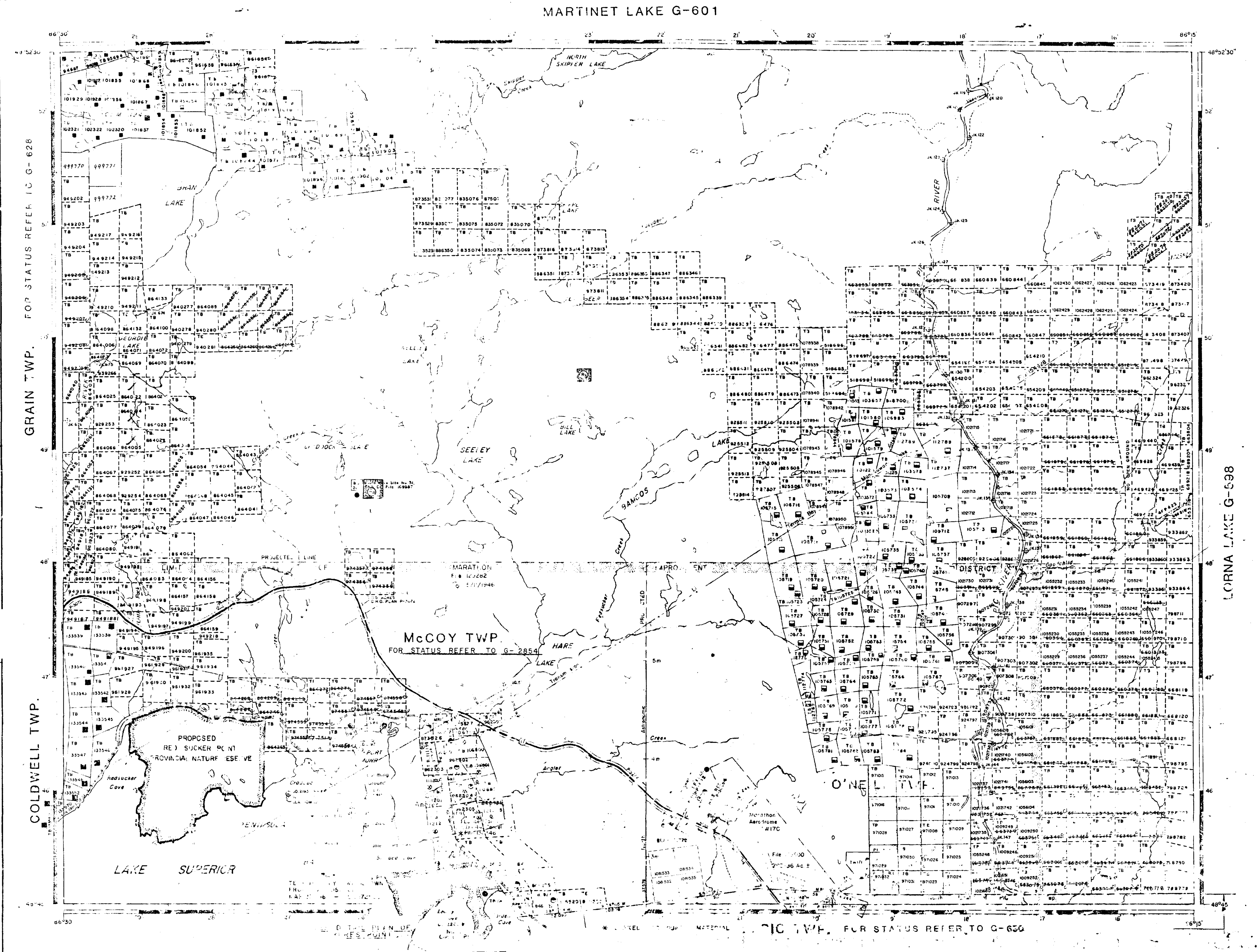
REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

S.R. - SURFACE RIGHTS M.R. - MINING RIGHTS

	Description	Order No.	Date	Disposition	File
R3	SEC 36/80	V 28/83	20/10/83	S.R.O.	
R4	SEC 36/80	WNCR 3/82	09/06/82	S.R.O.	





REFERENCES

AREA SHOWN THUS ▨ IS WITHDRAWN FROM STAKING PURSUANT TO PROVISIONS OF SECTION 32 OF THE MINING ACT, R.S.O. 1980, CHAPTER 268.
DISPOSITION BY EXPLORATORY LICENCE OF OCCUPATION ONLY

LAND UNDER WATER OF LAKE SUPERIOR IS WITHDRAWN FROM STAKING BY ORDER IN COUNCIL, DATED APRIL 30, 1912

RECEIVED THUNDER BAY

LEGEND

RESERVATIONS
ORIGINAL SHORE LINE
MARSH OR MUSKEG
MINES ✗
TRAVERSE MONUMENT ⊕

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT SURFACE & MINING RIGHTS	●
" SURFACE RIGHTS ONLY	
" MINING RIGHTS ONLY	
LEASE SURFACE & MINING RIGHTS	■
" SURFACE RIGHTS ONLY	
" MINING RIGHTS ONLY	
LICENCE OF OCCUPATION	
ORDER IN COUNCIL	
RESERVATION	
CANCELLED	
SAND & GRAVEL	

SCALE 1 INCH = 40 CHAINS

AREA

SEELEY LAKE

M.N.R. ADMINISTRATIVE DISTRICT

TERRACE BAY

MINING DIVISION

THUNDER BAY

LAND TITLES / REGISTRY DIVISION

THUNDER BAY

Ministry of Natural Resources
Land Management Branch
Ontario

Date FEBRUARY 1982

Number G-613