DRILL LOG

Hole No.: E-4
Location: 60.00 S + 5.50 E
Crawford Pond
Ice Grid

Angle: -41°
Azimuth: N. 63° 30' W.
Depth: 495'
Elevation: 320' (water level + 10')
Logged by: R. R. Holmes
5/30/60 to 6/13/60

Drill Hole Data:

0' 0" - 22' 0"	BX casing
18' 0" - 22' 0"	BX core
22' 0" - 495' 0"	AX core

Depth	Lithology
0' 0" - 18' 0"	Overburden.
18' 0" - 34' 10"	Schist: quartz, biotite, chlorite; calcite in fractures; 26' 11" - 27' 6" quartz-biotite pegmatite; 28' 7" - 29' 3" quartz-biotite pegmatite; 30' 3" - 31' 2" quartz-biotite pegmatite; pegmatites are biotite-rich; schistosity angle of schist 60° to 70° with core axis.
34' 10" - 40' 2"	Dolomite: numerous bands of biotite-rich schist.
40' 2" - 46' 6"	Schist: quartz, biotite; abundant basic feldspar; calcite in fractures; schistosity angle 65°.
46' 6' - 49' 9"	Dolomite: few biotite-rich bands of schist in lower 18".
49' 9" - 52' 4"	Schist: quartz, biotite; minor pyrrhotite; calcite in fractures; 49' 10" - 50' 1" dolomite with pyrrhotite.
52' 4" - 57' 1"	Dolomite: some 1/4" pyrrhotite crystals apparently replacing feldspar in pegmatized area; serpentine present; 53' 11" - 54' 7" altered and biotite-rich; 56' 3" - 57' 1" altered and biotite-rich.
57' 1" - 59' 3"	Schist: quartz, biotite; graphite minor; core fracturing during drilling.
59' 3" - 75' 8"	Pegmatised marble or dolomite: zones of micaceous and calcareous schist at: 60' 4" - 60' 10" 62' 0" - 63' 2" 63' 7" - 65' 0" 69' 7" - 75' 6" core fractured.

Drill Log: E-4

Depth	Lithology
75' 8" - 98' 6"	Marble: minor mica; 97' 7" - 98' 6" abundant mica.
98' 6" - 100' 0"	Pegmatite: quartz, biotite.
100' 0" - 103' 10"	Schist: quartz, biotite; schistosity angle 50° to 70°; 103' 6" - 103' 10" marble.
103' 10" - 107' 5"	Schist: quartz, hornblende, minor biotite.
107' 5" - 120' 7"	Schist: quartz, biotite.
120' 7" - 121' 8"	Pegmatite: quartz, biotite.
121' 8" - 127' 7"	Sand: cemented by calcite on top and bottom of section.
127' 7" - 132' 8"	Marble: with mica, probably phlogopite; minor pyrrhotite crystals.
132' 8" - 137' 3"	Schist: quartz, biotite, muscovite; schistosity angle 60° to 80°.
137' 3" - 143' 1"	Schist: quartz, biotite, chlorite.
143' 1" - 144' 5"	Schist: quartz, biotite; calcareous in top 6".
144' 5" - 148' 8"	Schist: quartz, biotite, chlorite.
148' 8" - 149' 8"	Pegmatite: quartz, biotite.
149' 8" - 150' 7"	Schist: quartz, biotite, chlorite.
150' 7" - 152' 6"	Marble: with bands of chlorite, mica schist.
152' 6" - 154' 7"	Schist: quartz, biotite, chlorite.
154' 7" - 163' 3"	Schist: quartz, biotite, chlorite; calcareous to 20%; 154' 9" - 154' 11" quartz-biotite pegmatite.
163' 3" - 164' 9"	Pegmatized marble: minor pyrrhotite.
164' 9" - 165' 6"	Pegmatite: quartz, biotite.
165' 6" - 172' 6"	Schist: quartz, biotite, chlorite; 171' 10" - 172' 6" quartz-biotite pegmatite.

Drill Log: E-4

Depth	Lithology
172' 6" - 191' 11"	Schist: quartz, biotite, muscovite; minor chlorite; abundant garnet; strong pegmatization; calcite in fractures; 172' 6" - 183' 10" zone of abundant garnet; 173' 10" - 174' 7" quartz-muscovite pegmatite; 175' 4" - 176' 9" quartz-muscovite pegmatite; 177' 1" - 177' 8" quartz-muscovite pegmatite.
191' 11" - 205' 11"	Schist: quartz, biotite muscovite; garnet present; several 2" to 6" bands of quartz-biotite pegmatite; schistosity angle 50°.
205' 11" - 207' 0"	Pegmatite: quartz, biotite, muscovite; minor garnet.
207' 0" - 236' 5"	Schist: quartz, biotite, muscovite; garnet present; several bands of quartz-biotite-muscovite pegmatite; minor calcite in fractures; schistosity angle 40° to 60°.
236' 5" - 268' 9"	Pegmatite: quartz, muscovite; minor garnet; 251' 0" - 256' 9" core fractured.
268' 9" - 274' 5"	Schist: quartz, biotite, chlorite; pyrrhotite to 5% parallel to schistosity; minor serpentine in fractures; schistosity angle 60° to 70°; 269' 7" - 271' 3" quartz-muscovite pegmatite with minor pyrrhotite.
274' 5" - 312' 8"	Schist: quartz, biotite, chlorite; graphite locally to 5%; garnet and serpentine present; minor pyrrhotite; several 2" to 6" bands of quartz-biotite pegmatite.
312' 8" - 314' 0"	Schist: quartz, biotite, hornblende; minor pyrrhotite.
314' 0" - 334' 9"	Schist: quartz, biotite, chlorite; graphite to 5% locally.
334' 9" - 348' 4"	Gabbro: with 2" to 6" bands quartz-biotite pegmatite; minor pyrrhotite.
348' 4" - 350' 3"	Pegmatite: quartz, biotite.
350' 3" - 357' 10"	Gabbro: with several bands quartz-biotite pegmatite; minor pyrrhotite.
357' 10" - 362' 11"	Peridotite: pyroxene, chlorite; minor biotite; serpentine in fractures; minor calcite in fractures; pyrrhotite 25% to 30%.

Drill Log: E-4

Depth	Lithology
362' 11" - 371' 3"	Pegmatite: quartz, biotite; fine-grained to 365' 11"; 367' 4" - 368' 0" biotite-rich peridotite; 369' 3" - 371' 3" pyrrhotite veins to 30% of volume;
371' 3" - 372' 4"	Gabbro: pyrrhotite 1% to 2%.
372' 4" - 373' 9"	Schist: quartz, hornblende, biotite; minor pyrrhotite.
373' 9" - 375' 6"	Gabbro: pyrrhotite to 1%.
375' 6" - 376' 11"	Pegmatite: quartz, biotite.
376' 11" - 392' 6"	Gabbro: 376' 11" - 384' 0" pyrrhotite to 2% 384' 0" - 388' 0" pyrrhotite 15% to 20% with high copper content; 388' 0" - 392' 6" pyrrhotite 20% with high copper content.
392' 6" - 444' 0"	Peridotite: pyroxene, chlorite; serpentine in fractures; altered; 392' 6" - 393' 1" pyrrhotite 20%; 393' 1" - 393' 8" pyrrhotite veins to 30% of volume; 393' 8" - 396' 2" pyrrhotite to 25%; 396' 2" - 397' 0" pyrrhotite veins to 60% volume; 397' 0" - 399' 2" pyrrhotite 15% to 30%; 399' 2" - 399' 6" pyrrhotite massive; 399' 6" - 399' 10" pyrrhotite 25%; end of altered zone; 399' 10" - 407' 7" pyrrhotite 30% to 40%; 407' 7" - 415' 7" pyrrhotite 40% to 70%; 415' 7" - 423' 3" pyrrhotite 40% to 50%; 423' 3" - 424' 10" quartz-biotite pegmatite with 25% pyrrhotite; 424' 10" - 435' 3" pyrrhotite 25% to 35%; 435' 3" - 441' 8" pyrrhotite 25% to 30%; 441' 8" - 444' 0" pyrrhotite 15% to 20%.
444' 0" - 444' 9"	Schist: hornblende, biotite; 1/4" vein copper; pyrrhotite to 20% of volume of section.
444' 9" - 474' 5"	Schist: quartz, biotite, chlorite; 444' 9" - 445' 6" pyrrhotite to 12% parallel to schistosity; 445' 6" - 474' 5" pyrrhotite to 5% parallel to schistosity.
474' 5" - 475' 0"	Schist: hornblende; minor quartz.

Drill Log: E-4

Depth	Lithology
475' 0" - 477' 0"	Schist: quartz, biotite; 475' 10" - 476' 3" quartz-biotite pegmatite.
477' 0" - 484' 4"	Schist: quartz, hornblende; quartz in 1/8" veinlets; mumerous 1" to 2" bands quartz-biotite pegmatite.
484' 4" - 485' 4"	Pegmatite: quartz, biotite.
485' 4" - 495' 0"	Schist: quartz, biotite; 491' 4" - 492' 8" quartz-hornblende-biotite schist.

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Total Depth 495' 0"

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Assays	Ni	Cu	Co	S	Fe	
E-4-1	0.475	0.138	0.073	8.00	15.6	(357'10" - 362'4"
E-4-2	0.784	0.302	0.088	12.43	25.8	(398'4" - 403'4"
E-4-3	0.967	0.333	0.110	15.81	31.2	(403'4" - 408'4"
E-4-4	1.077	0.396	0.117	19.53	32.2	(408'4" - 413'4"
E-4-5	0.998	0.655	0.117	17.99	29.6	(413'4" - 418'4"
E-4-6	0.601	0.422	0.073	9.38	20.6	(418'4" - 424'0"
E-4-7	0.459	0.207	0.051	7.24	17.8	(424'0" - 429'0"
E-4-8	0.534	0.258	0.051	8.50	20.0	(429'0" - 434'0"
E-4-9	0.435	0.370	0.044	7.08	18.4	(434'0" - 439'0"
E-4-10	0.274	0.245	0.044	4.07	12.4	(439'0" - 445'0"
E-4-11	0.528	0.189	0.051	7.78	16.6	(393'0" - 398'4"
E-4-12	0.347	0.453	0.036	5.64	12.0	(388'0" - 393'0"
E-4-13	0.345	0.119	0.044	4.47	12.8	(383'0" - 388'0"

E-4-4 for tin = none