Loge E.14
H-18.5-5.

PROGRESS REPORT

May, 1960

OFFICIAL FILE COPY
O. M. E.
RECEIVED JUN 21 1960

DATE	INITIALS	CODE

Docket No. DMEA-4947

Contract No. Idm-E 1224

Roland F. Beers, Inc. Troy, New York

TABLE OF CONTENTS

GEOPHYSICAL INVESTIGATION - March, April and May, 1960

- General Information
- Vertical Coil EM
  - South Harriman Grid and North Crawford Pond Ice Grid
  - Cross-over Offsets
  - Harriman Grid - A Second Conductor
  - Investigation and Comparison of the Alford Lake and Crawford Pond Conductors
- Potential Drop Ratio

LEASING ACTIVITY

- Leroy Williams Lease (No. 9.0-1-125)

STAGE III DRILLING

- General Information
- Drill Hole No. 14 (E-4)
- Drill Hole No. 15 (H-18.5-S)

DRILL LOGS

- Drill Hole No. 14 (E-4)
- Drill Hole No. 15 (H-18.5-S)

ASSAY DATA

- Assay Footage Intervals
- Union Assay Office Reports:
  May 9 - 13 - 24 - 26, 1960.

MAP SECTION

- Drill Hole Cross Sections, Drill Hole No. 14 (E-4)
  Drill Hole No. 15 (H-18.5-S)
- Drill Hole Location Map
- Leroy Williams Property Map (Lease No. 9.0-1-125)

GEOPHYSICAL INVESTIGATION - March, April and May, 1960

General Information

As the Stage III drilling progressed most of the geophysical work became detailed in nature and confined to the location of prospective drill holes. When time permitted additional geophysical investigations were conducted to provide information concerning the general area of interest. The more important of these projects concern the Vertical Coil EM and Potential Drop Ratio units and are summarized in the following text.

Vertical Coil EM

South Harriman Grid and North Crawford Pond Ice Grid

A reconnaissance with the Sharpe SE-100 unit was conducted during March to determine the number of conductors involved in this area of interest. Transmitter stations were located progressively 200' apart on Traverse 34S and readings were taken at receiver stations using 50' separation on Traverses 26S and 42S. This reconnaissance verified the contention that:

1. The Crawford Pond East Side conductor is an extension of the Harriman Grid "baseline" conductor.

2. That the Fuller's Island conductor either terminates in the vicinity of "100 Acre" Island or cannot be traced northward by the Sharpe SE-100 unit using conventional methods of operation.

3. That the Crawford Pond West Side and East Side conductors are two major conductors extending northward from the pond area.

Cross-over Offsets

In an attempt to verify the Sharpe cross-over offsets on the south end of the Harriman Grid the conductor was traced from south to north using the odd-numbered traverses. Two offsets occur between the following sets of coordinates:

1. 32S + 0.5E to 38S + 4E.

2. 28S + 0.6E to 30S + 0.7W.

Upon the completion of this reconnaissance both offsets were confirmed.

Harriman Grid - A Second Conductor

In the vicinity of the small pond on the Harriman Grid (coordinates 7S + 10E) the existence of a north-south conductor axis had previously been discovered by the Sharpe SE-100 unit during the reconnaissance of the east side of the Harriman Grid. In April this conductor was detailed and traced. Beginning with a transmitter setup at 4S + 9E the conductor was traced northward to 16N + 18E and then southward to Traverse 32S. Below 32S this conductor apparently merges with the Harriman Grid "baseline" conductor. It will remain for drilling to prove whether or not this conductor represents a "branch" of ultra-basic rock emanating from the same source as that which supplied the main conductor to the west. Until then the possibility remains that the convergence of this "eastern" conductor with the "baseline" conductor represents a gradual change in the attitude of the rocks involved, resulting in one conductor being superimposed on the other.

Investigation and Comparison of the Alford Lake and Crawford Pond Conductors

During the month of March the Sharpe SE-100 unit was used to trace the East Side conductor on Alford Lake. This conductor was successfully traced and exists between the coordinates 0 + 3.5W and 46N + 17E. The latter station is approximately 300' on the northeast shore and does not represent a termination of the conductor axis.

Attempts to extend the Harriman Grid conductor northward to Alford Lake met with failure because of power line and telephone line interference. An attempt to extend the Alford East Side conductor southward also met with failure because of power lines parallel to the conductor axis.

The Alford Lake West Side conductor was relocated and extended onto the southwest shore through the coordinates 12N + 19W. This conductor was then traced southward to connect with the Crawford Pond West Side conductor. It was noted during previous investigation on Alford Lake and Crawford Pond that the distances between their respective East and West conductors were comparable. Proof that the Alford West Side

conductor and the Crawford Pond West Side conductors are joined is substantial proof that Alford East Side conductor is an extension of the Crawford Pond East Side conductor.

Vertical Coil EM reconnaissance on Traverse 32N of the Alford Lake Ice Grid with transmitter stations on Traverse 24N provided evidence of two additional conductors of less magnitude located between the Alford Lake East and West conductors mentioned above. The additional cross-overs were located on Traverse 32N at 1.5W and 6.25E.

Potential Drop Ratio

During the latter part of April and the first part of May, a Potential Drop Ratio test was conducted on the Harriman Grid to determine the proper spacing of electrodes and to obtain data with respect to anomaly duplication. This test provided proof that past methods of operation were conducted in accordance with good practice.

In May a Potential Drop Ratio survey was made on the Harriman Grid with stations both east and west of the baseline included in the survey. This survey included Traverses 2S through 18S and 24S through 36S. This survey supplied additional and valuable information west of the baseline and made possible a more complete interpretation between the Traverses 22S and 2S.

LEASING ACTIVITY

Negotiations with Leroy Williams regarding the leasing of land located on the east shore of Crawford Pond were successfully concluded in May. This land is located adjacent to that of Elmer C. Hart and lies immediately to the south. An index map showing the location of this property is included in this report.

STAGE III DRILLING

General Information

With the completion of Drill Holes H-18.5-S and E-4, the Stage III drilling program conducted under the provisions of Docket No. DMEA-4947, work on Contract No. Idm-E 1224 and its amendments was terminated.

The primary purpose of this drilling program was to increase the known nickel-ore deposits in Knox and Lincoln Counties, Maine. The enormous

amount of work required to indentify, detail and evaluate anomalous trends for the purpose of diamond core drilling was often completed under difficult and even hazardous conditions. Close inspection of the drill logs, assay results, and lately the results of research on extractive metallurgy confirm the opinion that the result has justified the means. In an area such as this where the rocks are contorted, folded and twisted the most favorable of structural environments for the accumulation of base metal sulfides can be altered considerably in a few hundred feet. The abundant evidence now available supports the contention that the area of interest has sufficient length, probably many miles, to justify continued investigations. The Stage III drilling program was carried out in a manner which guaranteed the investigation of new areas of interest along the main anomalous trend, and not solely for the purpose of extending the immediate limits of the known deposits. Much of the success of the Stage III drilling program can be attributed to the adoption of such a procedure.

To enable rapid reference to the Stage III drill holes, they are listed in this report for reference as follows:

No.	Letter Designation	Name Designation	Grid	Date Drilled From	Date Drilled To
1	M-1	Lulu Miller #1	Burns	1/ 4/60	1/19/60
2	B-1	Brown #1	Burns	1/22/60	1/27/60
3	P-1	Perpall #1	Harriman	2/ 4/60	3/ 2/60
4	S-2	Spruce Isl. #2	C. P. Ice	2/29/60	3/ 9/60
5	E-1	East Side #1	C. P. Ice	3/ 4/60	3/17/60
6	F-2	Fuller's Isl. #2	C. P. Ice	3/10/60	3/16/60
7	S-3	Spruce Isl. #3	C. P. Ice	3/17/60	3/20/60
8	E-2	East Side #2	C. P. Ice	3/18/60	3/24/60
9	S-4	Spruce Isl. #4	C. P. Ice	3/21/60	3/28/60
10	E-3	East Side #3	C. P. Ice	3/25/60	3/31/60
11	H-32-S	Burkett #1	Harriman	4/ 4/60	4/12/60
12	P-2	Perpall #2	Harriman	4/14/60	4/20/60
13	H-15.8-S	Harriman #1	Harriman	4/21/60	4/28/60
14	E-4	East Side #4	C. P. Ice	4/30/60	5/13/60
15	H-18.5-S	Harriman #2	Harriman	5/ 2/60	5/18/60

The explanations regarding Drill Holes H-18.5-S and E-4 follow; the drill logs and cross-sections are included in this report.

Drill Hole No. 15 (H-18.5-S)

Drill Hole No. H-15.8-S extended the ore-grade nickel deposit beneath the Harriman Grid an additional 150' southward. The information derived from this drill hole suggested that another hole be drilled farther south to test the possibility of a depth change. Drill Hole H-18.5-S was unsuccessful in cutting the mineralized ultra-basic at greater depth. This particular area of the Harriman Grid should be probed with a drill hole based on a possible change in attitude before resignation to a non-productive negative assumption.

Drill Hole No.14 (E-4)

The characteristics concerning the location of the collar, the azimuth, and the angle of this drill hole were explained in the April report. Basic rock in the form of gabbro was cut intermittently from 350' through 392' drill hole depths. Although the amount of sulfide in the gabbro increased with depth it was not considered significant above 384'.

A 5' band of peridotite containing approximately 30% pyrrhotite was cut at 358', but the strongly mineralized section occurred between 392' and 444' drill hole depths. Drill Hole E-4 extended the strongly mineralized ultra-basic body 700' south of Drill Hole E-3.

Confidence is expressed that the significantly mineralized section of the ultra-basic can be extended northward from Drill Hole E-3 and southward from Drill Hole E-4 by future drilling. Drill Hole E-4 adds to the evidence obtained from E-1 (42S + 4E) and from E-3 (52S + 3.75E) that the mineralized peridotite beneath the Vertical Coil EM trace lies between -100' and -200' below sea level. Accurate estimates of the attitude and magnitude of the orebody depend upon evidence provided by core drilling, and in this case must be delayed until the completion of a more extensive and detailed drilling program designed specifically for that purpose.

DRILL LOG

Hole No.:	E-4	Angle:	-41°
Location:	60.00S + 5.50E	Azimuth:	N 63° 30' W
	Crawford Pond	Depth:	495'
	Ice Grid	Elevation:	120' (water level + 10')
		Logged by:	R. R. Holmes

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"	Pegmatized 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.
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.
172'6"	-	191'11"	Schist: quartz, biotite, muscovite; minor chlorite; abundant garnet; strong pegmatization; calcite in fractures; 172'6" - 173'10" 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%.
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;

- Continued -

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.
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; numerous 1" to 2" bands of 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.

* * * Total Depth - 495'0" * * *

DRILL LOG

Hole No.:	H-18.5-S	Angle:	-45°
Location:	18.5 S + 2.55 E	Azimuth:	N 72° W
	Harriman Grid	Depth:	604'0"
		Elevation:	204'
		Logged by:	D. E. Wyke

Drill Hole Data:

0'0" - 2'8"	NX casing
0'0" - 8'0"	BX casing
2'0" - 2'8"	NX core
2'8" - 8'0"	BX core
8'0" - 604'0"	AX core

Depth	Lithology
0'0" - 2'0"	Overburden.
2'0" - 27'0"	Pegmatite: quartz, muscovite; minor biotite.
27'0" - 35'2"	Schist: quartz, hornblende, chlorite; quartz veinlets at 30° angle to core axis.
35'2" - 36'4"	Quartz: with 2" bands quartz-biotite schist.
36'4" - 41'11"	Schist: quartz, biotite, chlorite; possible minor graphite; minor hornblende.
41'11" - 43'11"	Pegmatite: quartz, biotite, muscovite.
43'11" - 49'9"	Schist: quartz, biotite.
49'9" - 51'10"	Pegmatite: quartz, biotite, muscovite.
51'10" - 57'8"	Schist: quartz, biotite; 52'5" - 53'3" quartz-biotite-muscovite pegmatite; 53'11" - 54'6" quartz-biotite-muscovite pegmatite.
57'8" - 63'7"	Schist: quartz, biotite; generally 1% pyrrhotite; pyrrhotite to 3% in upper and lower 12" zones; copper visible.

63'7"	-	74'2"	Pegmatite: quartz-biotite, muscovite; 72'6" - 73'2" quartz-biotite schist.
74'2"	-	114'6"	Schist: quartz, biotite; local graphite to 2%; minor garnet; pyrrhotite -1%; schistosity angle 75°; 2 narrow bands biotite schist at 96'0" and 97'8"; 103'0" - 103'9" altered hornblende schist; 112'0" - 114'6" increase in biotite, increase in pyrrhotite to 2%.
114'6"	-	116'8"	Marble: altered; biotite-rich top and bottom 4".
116'8"	-	119'6"	Schist: quartz, biotite; strong pegmatization.
119'6"	-	122'11"	Marble.
122'11"	-	133'10"	Schist: quartz, biotite; 128'11" - 129'10" marble; 131'9" - 132'4" marble.
133'10"	-	143'4"	Pegmatite: quartz dominant; minor biotite; minor tourmaline.
143'4"	-	145'2"	Schist: quartz, biotite; strong pegmatization.
145'2"	-	155'3"	Pegmatite: quartz, biotite; 153'5" - 153'11" quartz-biotite schist.
155'3"	-	159'6"	Schist: quartz, biotite; strong pegmatization.
159'6"	-	163'0"	Pegmatite: quartz, biotite.
163'0"	-	166'3"	Schist: quartz, biotite; strong pegmatization.
166'3"	-	186'0"	Pegmatite: quartz, biotite; bands of quartz-biotite schist.
186'0"	-	195'10"	Schist: quartz, biotite; strong pegmatization.
195'10"	-	203'3"	Pegmatite: quartz, biotite.
203'3"	-	206'7"	Schist: quartz, biotite.
206'7"	-	221'11"	Pegmatite: quartz, biotite; 213'7" - 221'11" abundant garnet.

221'11"	-	230'3"	Schist: quartz, biotite, garnet.
230'3"	-	237'0"	Schist: quartz, biotite; hornblende in lower 18".
237'0"	-	261'7"	Schist: quartz, hornblende; quartz, in 1/8" veinlets 55° to core axis; calcite in fractures.
261'7"	-	263'0"	Pegmatite: quartz, biotite.
263'0"	-	270'3"	Schist: quartz, hornblende; quartz in 1/8" veinlets at 55° to core axis; 265'8" - 266'6" quartz-biotite pegmatite; 268'6" - 269'0" quartz-biotite pegmatite.
270'3"	-	271'1"	Pegmatite: quartz, biotite.
271'1"	-	357'2"	Schist: quartz, biotite; minor chlorite; minor local garnet; minor graphite; generally strong pegmatization; several 2" to 6" bands of quartz-biotite pegmatite; minor pyrrhotite parallel to schistosity.
357'2"	-	366'10"	Schist: quartz, biotite, chlorite; minor graphite; minor pyrrhotite.
366'10"	-	386'3"	Pegmatite: quartz, biotite; fine-grained.
386'3"	-	388'7"	Peridotite: pyroxene, chlorite; altered; barren of sulfides.
388'7"	-	389'8"	Schist: quartz, biotite, chlorite.
389'8"	-	424'6"	Schist: quartz, biotite, chlorite; graphite to 2%; abundant garnet.
424'6"	-	434'1"	Schist: quartz, biotite, chlorite; minor garnet; minor graphite.
434'1"	-	435'10"	Schist: quartz, biotite, garnet; calcite in numerous fractures.
435'10"	-	446'1"	Pegmatite: quartz, biotite; quartz dominant; minor garnet; 440'7" - 441'3" hornblende-biotite schist.

446'1"	-	449'4"	Schist: quartz, hornblende, biotite; minor quartz-biotite schist.
449'4"	-	453'0"	Pegmatite: quartz, biotite; bitotite schist and hornblende schist bands in lower 24".
453'0"	-	464'4"	Schist: quartz, hornblende; quartz in 1/8" veinlets 60° to 70° to core axis; 463'5" - 463'9" quartz and calcite with 1/4" pyrrhotite crystals replacing feldspar.
464'4"	-	470'8"	Schist: quartz, hornblende; quartz in 1/8" veinlets at 50° to 70° to core axis.
470'8"	-	471'10"	Quartz: minor inclusions of hornblende schist.
471'10"	-	477'5"	Pegmatized hornblende schist.
477'5"	-	479'5"	Schist: quartz, hornblende; with 1/8" veinlets of quartz at 60° angle.
479'5"	-	483'7"	Pegmatite: quartz, biotite; inclusions of hornblende schist.
483'7"	-	486'9"	Pegmatized hornblende schist.
486'9"	-	594'0"	Schist: quartz, biotite; schistosity angle 45°; 493'6" - 494'6" quartz-biotite pegmatite; 527'2" - 528'1" hornblende schist; 534'1" - 535'2" quartz-biotite pegmatite; 541'8" - 542'0" quartz-biotite-hornblende schist; 553'3" - 553'6" quartz-biotite-hornblende schist; 557'9" - 558'2" quartz-biotite pegmatite; 572'2" - 573'4" quartz-biotite pegmatite with minor chlorite; 574'0" - 575'8" strongly pegmatized quartz-biotite-hornblende schist with large biotite crystals; 578'11" - 579'6" quartz-biotite pegmatite; 580'6" - 582'3" strongly pegmatized quartz-biotite-hornblende schist as above; 586'3" - 587'4" quartz-biotite pegmatite with minor chlorite;

594'0"	-	604'0"	Schist, quartz-biotite; minor hornblende; pegmatized; minor pyrrhotite in quartz veins; 594'0" - 594'4" quartz-biotite-hornblende schist; 594'9" - 595'9" quartz-biotite-hornblende schist.

* * * Total Depth - 604'0" * * *

ASSAY FOOTAGE INTERVALS

For samples sent to Union Assay Office

Drill Hole No.	Assay No.	From	To
S-3	1	74' 0"	79' 3"
S-3	2	101' 2"	107' 8"
S-3	3	108' 1"	115' 2"
S-3	4	117' 8"	125' 5"
S-3	5	53' 11"	59' 3"
P-1	1	351' 0"	356' 0"
P-1	2	356' 0"	360' 0"
E-3	1	259' 8"	265' 0" - 5'+
E-3	2	265' 0"	270' 0" - 5
E-3	3	270' 0"	275' 0" - 5
E-3	4	275' 0"	281' 0" - 6
E-3	5	282' 0"	287' 0" - 5
E-3	6	287' 0"	291' 6" - 4.5
E-3	7	291' 6"	297' 6" - 6.0
F-2	1	109' 8"	112' 6"
S-2	1	185' 0"	189' 0"
S-2	2	175' 0"	185' 0"
H-15.8-S	2	309' 7"	314' 7"
E-3	3	270' 0"	275' 0"
E-1	1	282' 8"	287' 8" - 5'
H-15.8-S-1	1	286' 8"	291' 8" - 5'
H-15.8-S-1	2	309' 7"	314' 7" - 5
H-15.8-S-1	3	314' 7"	318' 7" - 4
H-15.8-S-1	4	319' 8"	323' 6" - 3.8
H-15.8-S-1	5	323' 6"	328' 6" - 5
H-15.8-S-1	6	333' 2"	338' 2" - 5
H-15.8-S-1	7	338' 2"	343' 2" - 5
H-15.8-S-1	8	343' 2"	348' 2" - 5
H-15.8-S-1	9	348' 2"	353' 2" - 5
H-15.8-S-1	10	353' 2"	358' 2" - 5
H-15.8-S-1	11	358' 2"	363' 2" - 5
H-15.8-S-1	12	363' 2"	368' 2" - 5
H-15.8-S-1	13	368' 2"	371' 4" - 3.2
H-15.8-S-1	14	371' 4"	376' 4" - 5
H-15.8-S-1	15	387' 3"	392' 3" - 5

21

105

see final report

Assay Footage Intervals - Continued

Drill Hole No.	Assay No.	From	To
E-4	1	357' 10"	362' 11"
E-4	2	398' 4"	403' 4"
E-4	3	403' 4"	408' 4"
E-4	4	408' 4"	413' 4"
E-4	5	413' 4"	418' 4"
E-4	6	418' 4"	424' 0"
E-4	7	424' 0"	429' 0"
E-4	8	429' 0"	434' 0"
E-4	9	434' 0"	439' 0"
E-4	10	~~439' 0"~~	~~445' 0"~~
E-4	11	393' 0"	398' 4"
E-4	12	388' 0"	393' 0"
E-4	13	383' 0"	388' 0"

46'

TELEPHONE 3-3302

Hand Sample Serial 86428-86444

ASSAY REPORT

UNION ASSAY OFFICE, Inc.

J. V. SADLER, President
A. C. SELBY, Vice-Pres. & Treas.
Lily M. Hottinger, Secretary

Salt Lake City 10, Utah

Mine Roland F. Beers Inc.

Box 84 Rockport, Maine

RESULTS PER TON OF 2000 POUNDS

May 9, 1960

Number	GOLD Ozs. per Ton	GOLD VALUE	SILVER Ozs. per Ton	LEAD Per Cent Wet	COPPER Per Cent Wet	INSOL. Per Cent	ZINC Per Cent	SULPHUR Per Cent	TUNGSTIC OXIDE Per Cent	IRON Per Cent	~~NICKEL~~ Per Cent Ni	Per Cent Co
S-3-1					0.113			3.35		10.0	0.274	0.029
S-3-2					0.182			16.15		29.8	0.833	0.102
S-3-3					0.176			4.79		11.4	0.256	0.044
S-3-4					0.063			1.71		6.8	0.160	0.036
S-3-5					0.239			9.70		19.2	0.666	0.058
P-1-1					0.119			1.86		5.0	0.205	0.036
P-1-2					0.081			2.37		5.2	0.235	0.036
E-3-1					0.283			13.47		26.4	0.792	0.073
E-3-2					0.308			11.55		26.8	0.686	0.073
E-3-3					0.289			14.89		33.2	0.873	0.088
E-3-4	.503 Cu	28.9 Fe	.789 Ni		1.026			16.08		29.2	0.802	0.080
E-3-5					0.598			12.43		24.0	0.684	0.080
E-3-6					0.344			13.32		24.6	0.703	0.073
E-3-7	.528	26.0 Fe	.568		0.233			6.21		15.8	0.371	0.036
F-2-1					0.031			4.13		8.6	0.006	None
S-2-1					0.302			30.41		49.0	1.879	0.176
S-2-2					0.226			7.79		16.2	0.225	0.036

Remarks

Charges $204.00

W. C. Wanless

TELEPHONE EM 3-3302

Hand Sample Serial 86959-61

Mine Roland F. Beers, Inc.

ASSAY REPORT

UNION ASSAY OFFICE, Inc.

J. V. SADLER, President
W. C. WANLASS, Vice-Pres. & Treas.
LILY M. HOTTINGER, Secretary

Salt Lake City 10, Utah

RESULTS PER TON OF 2000 POUNDS

May 13, 1960

NO	GOLD Ozs. per Ton	SILVER Ozs. per ton	LEAD Per Cent Wet	[redacted] Per Cent	INSOL. Per Cent	ZINC Per Cent	SULPHUR Per Cent	IRON Per Cent	LIME Per Cent	Per Cent	Per Cent	VALUE GOLD
				Sn								
E-3-3				None								
S-2-1				None								
S-2-2				None								

Remarks

Charges $ 12.00

W. C. Wanlass

TELEPHONE 3-3302

Hand
Sample Serial 87336-51

T. 7

ASSAY REPORT

UNION ASSAY OFFICE, Inc.

J. V. SADLER, President
A. C. SELBY, Vice-Pres. & Treas.
Lily M. Hottinger, Secretary

Salt Lake City 10, Utah

Mine Roland F. Beers Inc.

RESULTS PER TON OF 2000 POUNDS

May 24, 1960

Number	GOLD Ozs. per Ton	GOLD VALUE	SILVER Ozs. per Ton	LEAD Per Cent Wet	COPPER Per Cent Wet	Per Cent Ni	ZINC Per Cent	SULPHUR Per Cent	TUNGSTIC OXIDE Per Cent	IRON Per Cent	Per Cent Co	Per Cent Sn
E-1-1					0.126	0.301		4.60		10.0	0.029	ff
H-15-85-1-1					0.044	0.187		2.64		8.8	0.022	5 None
H-15-85-1-2					0.195	3.582		34.23		56.8	0.176	5
H-15-85-1-3				0.206	0.220	0.794	2.342	8.08		15.4	0.073	4 9.0
H-15-85-1-4					0.100	0.278		2.79		9.6	0.044	3.8
H-15-85-1-5				0.115	0.126	0.292	0.286	4.13		12.6	0.036	5 8.8
H-15-85-1-6					2.217	0.713		0.81		17.0	0.058	5
H-15-85-1-7				1.228	0.239	0.496	0.605	5.12		15.6	0.051	5 10.0
H-15-85-1-8					0.170	0.288		2.85		12.2	0.036	5
H-15-85-1-9					0.138	0.329		3.44		14.0	0.036	5
H-15-85-1-10					0.132	0.386		3.94		14.2	0.044	5
H-15-85-1-11					0.132	0.341		3.48		13.8	0.036	5
H-15-85-1-12				0.138	0.119	0.376	0.344	3.61		11.6	0.036	5 25.0
H-15-85-1-13					0.144	0.412		5.04		10.4	0.044	3.2
H-15-85-1-14				0.609	0.907	0.890	0.703	8.35		16.0	0.073	5 8.2
H-15-85-1-15					0.056	0.101		1.04		5.4	0.014	5

Remarks

Charges $ 196.00

W. C. Winters

TELEPHONE 3-3302

Hand Sample Serial 87483-95

ASSAY REPORT

UNION ASSAY OFFICE, Inc.

J. V. SADLER, President
A. C. SELBY, Vice-Pres. & Treas.
Lily M. Hottinger, Secretary

Salt Lake City 10, Utah

Mine Roland F. Beers, Inc.

RESULTS PER TON OF 2000 POUNDS

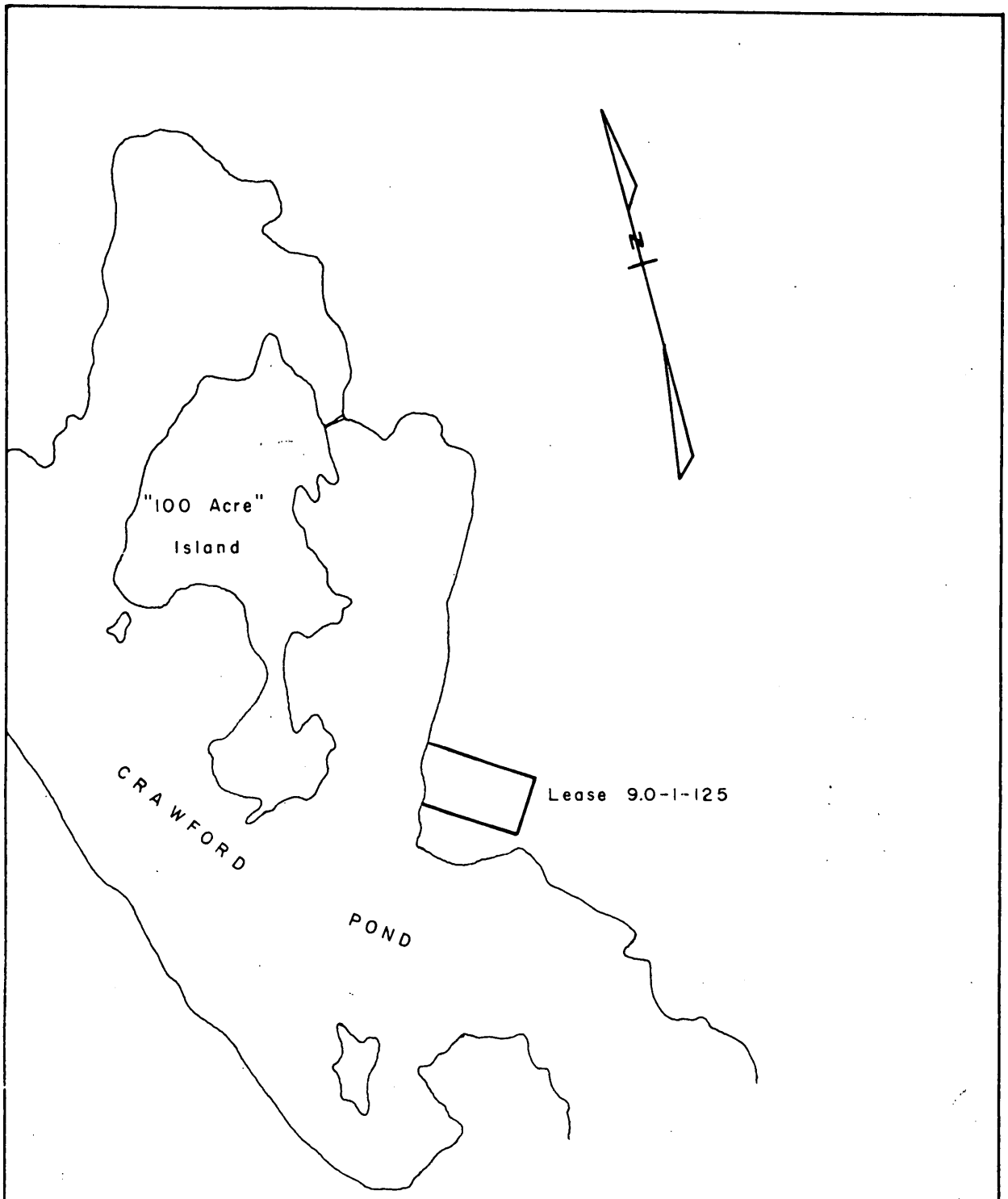
May 26, 1960

Number	GOLD Ozs. per Ton	GOLD VALUE	SILVER Ozs. per Ton	LEAD Per Cent Wet	COPPER Per Cent Wet	INSOL. Per Cent	ZINC Per Cent	SULPHUR Per Cent	~~TUNGSTIC ACID~~ Per Cent Ni	IRON Per Cent	~~XMPX~~ Per Cent Co	Per Cent Sn
E-4-1					0.138		5	8.00	0.475	15.6	0.073	
E-4-2					0.302		✓	12.43	0.784	25.8	0.088	
E-4-3					0.333		✓	15.81	0.967	31.2	0.110	
E-4-4					0.396		✓	19.53	1.077	32.2	0.117	None
E-4-5					0.655		✓	17.99	0.998	29.6	0.117	
E-4-6					0.422		5.5	9.38	0.601	20.6	0.073	
E-4-7					0.207		5.0	7.24	0.459	17.8	0.051	
E-4-8					0.258		✓	8.50	0.534	20.0	0.051	
E-4-9					0.390		✓	7.08	0.435	18.4	0.044	
E-4-10	Cu 0.349	Ni 0.706	Fe 26.6		0.245			~~4.07~~	~~0.274~~	~~12.4~~	~~0.044~~	
E-4-11					0.189		5.5	7.78	0.528	16.6	0.051	
E-4-12					0.453			5.64	0.347	12.0	0.036	
E-4-13					0.119			4.47	0.345	12.8	0.044	

Remarks

Charges $ 160.00

W. C. Edwards



LEASE DISTRIBUTION MAP

LEROY G. WILLIAM

Scale : 1in =1320 ft.

R.F. BEERS, INC. TROY, N.Y.

Fig 15

OFFICIAL FILE COPY
O. M. E.
RECEIVED MAY 23 1960

DATE	INITIALS	CODE
5-23	gad	110
		800
		500

PROGRESS REPORT

April 1960

Docket No. DMEA-4947

Contract No. Idm-E 1224

Roland F. Beers, Inc. Troy, New York

Logs H-32-5-1
P-2
H-158-5
E-4
Burdas #1 & #2

TABLE OF CONTENTS

STAGE III DRILLING

Supplement to March Report

General Information relative to:

Drill Hole No. 3 (P-1)
Drill Hole No. 4 (S-2)
Drill Hole No. 5 (E-1)
Drill Hole No. 6 (F-2)
Drill Hole No. 7 (S-3)
Drill Hole No. 8 (F-2)
Drill Hole No. 9 (S-4)
Drill Hole No. 10 (E-3)

Report on April Drilling

General Information relative to:

Drill Hole No. 11 (H-32-S-1)
Drill Hole No. 12 (P-2)
Drill Hole No. 13 (H-15.8-S)
Drill Hole No. 14 (E-4)

DRILL LOGS

Drill Hole No. 11 (H-32-S-1)
Drill Hole No. 12 (P-2)
Drill Hole No. 13 (H-15.8-S)
Drill Hole No. 14 (E-4)

Pack Sack Drill Hole Bird No. 1
Pack Sack Drill Hole Bird No. 2

DRILL HOLE CROSS-SECTIONS

Drill Hole No. 11 (H-32-S-1)
Drill Hole No. 12 (P-2)
Drill Hole No. 13 (H-15.8-S)

Drill Hole Location Map

STAGE III DRILLING

Supplement to March Report

General Information

With the completion of drill hole P-1 on March 2, 1960, a total effort began to complete the ice drilling while conditions were favorable. Because of the fluctuating conditions of the weather in the State of Maine, it is impossible to make a long-range prediction of ice conditions at the beginning of the season. The maximum ice thickness attained by freezing lake water is probably less than 13 inches. Without snow for protection water standing on the ice will, as a result of 12 hours of rain, go under the ice through cracks, widening the cracks to holes up to four feet in diameter with a whirlpool action. It is necessary that snow cover the ice to a depth of six inches to protect the ice through periods of rain and warm temperature. With such protection the ice will remain safe through at least twenty-four hours of rain, and the added moisture will remain on top of the ice until the following freezing period. Moisture held on top of the ice until it is frozen must account for the extra four inches to six inches of thickness that is necessary for safely operating heavy equipment on the ice. During the current season the ice conditions remained favorable through several periods of warm temperature accompanied by heavy rainfall. Two light snowfalls in succession created persistent ground blizzard conditions which lasted for a period of two weeks. Travel on the ice grid was extremely difficult since no path would remain broken for more than a few minutes. During the last three days of the ice drilling program heavy rain and warm weather were quickly making ice conditions unsafe for heavy equipment. Drill hole E-3 was stopped after cutting 32 feet of rock below the section of ore. Standing water two inches to four inches deep was present during the removal of the drill rig platform. Whirlpool action had widened the hole through the ice beneath the platform to approximately three feet in diameter. In removing the equipment from the ice all the heavy equipment broke through the ice approximately 50 feet from shore in three feet of water. All equipment was retrieved without damage.

Drill Hole No. 3 (P-1)

The characteristics of this drill hole were included in the February 1960 written report. The lithologic description of the core to the total depth of 662' is included in the March 1960 report for observation.

Drill Hole No. 4 (S-2)

As mentioned in the February 1960 report, this drill hole location was determined by extensive and detailed Magnetometer, Horizontal Coil EM and Vertical Coil EM surveys. The target was determined by the Vertical Coil EM unit to lie between the coordinates 91.0S & BL and 91.0S & 0.90W. An azimuth of N 42° W was chosen for the purpose of intercepting the conductor only a few degrees from a line normal to the strike of the surface trace without deviating too far from geophysical data obtained on traverse 91.0S. The -45° angle was designed to place the drill hole at a depth of 130' between the above coordinates. The quartz-biotite-chlorite schist containing up to 5% graphite was cut as the top of the bedrock at 51'10". Gabbro appears in the core at a drill hole depth of 127'10" and is present to 140'7". The gabbro is cut by pegmatite so that it is separated into zones ranging from 1' to 4' in thickness. From 175'0" to 188'4" veins of massive pyrrhotite occur, and the conclusion is made that the host rock is a quartz-biotite schist. The biotite-rich, pyroxene ultra-basic? lying below the pyrrhotite veins from 189'7" to 191'7" is essentially barren of sulfides, containing only 1% pyrrhotite. That there is insufficient ultra-basic rock present to justify the existence of approximately 4' of massive pyrrhotite is obvious. After considering the occurrence of massive pyrrhotite in drill holes S-1 (drilled 2/24/59 to 2/26/59) and S-2, the conclusion was made that the sulfide was "squeezed" out of a more generous ultra-basic body. Because of the dominant east dip of the rocks on the east shore of Crawford Pond the suggestion was strong that the major basic body lay to the east. Drill hole S-2 extended the equivalent of a 4' vein of massive pyrrhotite 350' northeastward from drill hole S-1, and the evidence provided by both cores led to the location of drill hole S-3.

Drill Hole No. 5 (E-1)

Drill Hole E-1 was drilled vertically through the East Side Conductor to determine the value of the Vertical Loop EM Survey at the north end of the ice grid. The location on traverse 42S and 4E resulted from the decision to drill as close to the pit (34S & 1.5E, see Harriman Grid) as possible without becoming involved in the conductor offset between 30S and 40S. Although the offset produced by the Vertical Loop EM Survey indicates favorable structure for the accumulation of nickel ore, the picture resulting from a single geophysical survey could be distorted. The problem of property control also dictated that the location of E-1 be as far south as traverse 42S until property negotiations underway could be resolved.

The Drill Log of E-1 is essentially separated into two parts because of an accident that happened at a drill hole depth of 241'. The core barrel

was accidentally dropped down the hole and broken. Attempts to retrieve the barrel by fishing were unsuccessful. An effort to enlarge the hole to a depth of 241' in order to retrieve the barrel resulted in the loss of the hole at approximately 208' in depth. From this depth a new hole was continued and the drill core saved. Correlation of the duplicated horizon was made by the Field Team and is presented in the cross-section of drill hole E-1 (March 1960 report). Gabbro is intermittently present in the core from a depth of 164'. The amount of pyrrhotite in the gabbro became significant below a depth of 276'. Chloritic peridotite was cut from 282' to 305'. The ultra-basic appears to be of the highly altered type found adjacent to the more favorable zones in previous drilling. The amount of pyrrhotite in schist, gabbro and peridotite is significant between 273' and 298'. Although the percentage is not considered ore-grade with respect to present standards of measurement, the value of the evidence produced by the drill hole cannot be overestimated.

Drill Hole No. 6 (F-2)

Magnetometer and Horizontal Loop EM Surveys during the winter of 1958 to 1959 provided an abundance of evidence that the Fuller's Island area was anomalous. It was not until 1960 that a conductor axis was located with the Vertical Loop EM equipment. This northeast-southwest conductor axis was surveyed in detail with the Sharpe SE-100 equipment and hole No. F-2 was designed to take advantage of the combined geophysical data. Although no ultra-basic rock was cut in the hole, the abundance of pyrrhotite in the core from 55' to 129' strongly suggests the presence of an ultra-basic body nearby, possibly at depth. Two parallel conductors were located approximately 200' apart trending through the Fuller's Island area. The conductors were located and defined on a special ice grid laid out with a baseline trend northeast-southwest and can best be seen presented on this grid. The eastern conductor was drilled since it provided the strongest geophysical data and correlated to the best advantage with the data supplied from surveys on the regular ice grid.

Drill Hole No. 7 (S-3)

The information provided by Magnetometer and Horizontal Coil EM surveys in the Spruce Island area, and the results of drill holes S-1 (1959) and S-2 suggested the location of S-3. This drill hole was designed to locate the ultra-basic source of the 4' vein of pyrrhotite cut by the two previous holes. The conductor axis determined by the Sharpe SE-100 unit was obviously the vein of pyrrhotite which was the ideal electrical conductor in the area. Attempts to project the conductor south of 94S were unsuccessful with the three types of

geophysical equipment used. The strike of the rocks on the shoreline east of Spruce Island is approximately east-west which is at a right-angle relative to the strike on the eastern shore of Crawford Pond from 40S to 76S. The possibility of structural control altering the north-south trend, the dominant east dip of the rocks, supported by the Magnetometer and Horizontal Coil EM anomaly east of the S-1 location, determined the location of S-3. Gabbro was cut at a drill hole depth of 50' and peridotite at 63'. The significantly mineralized ultra-basic was cut from 100' to 126'. The 4' of massive and semi-massive pyrrhotite is definitely in ultra-basic rock and not "squeezed" into the schist as noted in drill holes S-1 and S-2. The alternating sections of gabbro and peridotite suggest that drill hole S-3 cut a marginal portion of the ultra-basic body and that drill holes further to the east would cut a more generous mineralized section.

Drill Hole No. 8 (E-2)

Drill Hole E-2 was designed to intersect the East-Side Ice Grid Conductor between 42S and the Spruce Island area. An extensive and detailed Vertical Coil EM survey was made before locating the drill hole on traverse 74S. The cross-overs determined by the receiver unit on line 74S were run from varying transmitter-receiver separations both north and south. Cross-overs at 1.9W were obtained with the transmitter unit located on lines 66S and 82S. Bedrock was cut at 147' in the form of fine-grained quartz-biotite pegmatite which continued to a drill hole depth of 257'.

The rock cut to a total depth of 463' did not include ultra-basics or the quartz-biotite-chlorite schist containing minor graphite that has been determined by experience to border an ultra-basic body. Mineralization in the core was confined to minor pyrrhotite apparently replacing feldspar crystals in a pegmatized lime rock.

Drill Hole No. 9 (S-4)

This drill hole was designed to project the nickel ore northward from the S-3 location. The location was based on Sharpe SE-100 receiver cross-overs from transmitter locations both north and south. Rock types characteristically favorable to ultra-basic areas were cut from 54' to 281' drill hole depth. No ultra-basic rock was cut in the drill hole and it was assumed that the graphite present throughout the section accounted in part for the Sharpe cross-overs. There is a possibility that the location and direction of the powerline crossing

from the east mainland to Spruce Island could distort the geophysical picture a sufficient amount to cause a drill hole to miss the target. This power line location can be accurately located by a line drawn between the coordinates 92S & 2E and 90S & 2W.

Drill Hole No. 10 (E-3)

The last detailed Vertical Coil EM Survey on the ice grid determined the location of E-3. The survey began at traverse 20S on the Harriman grid and was continued through 58S on the ice grid. The location of E-3 was selected on traverse 52S to check the East-Side Conductor 1000' south of the drill hole E-1 location. The lithology of the rock cut from 135' to the total depth of 322' was characteristic of the more successful drill holes. Peridotite was cut at 224' and the heavily mineralized section of ore extended from 254' to 290' drill hole depth.

* * * * *

STAGE III DRILLING - APRIL

General Information

With the ice drilling completed, Stage III drilling continued on land on the Crawford Pond Prospect. Three drill holes were completed in April. They are designated as H-32-S-1, P-2, and H-15.8-S. In addition, one drill hole designated as E-4 was in progress and had attained a depth of 60' at the end of the month. The location of drill holes H-32-S-1, P-1 and E-4 was tentatively approved by telephone conversation by Mr. Williams of the OME Field Team. Formal approval has been received on drill hole H-32-S-1 from Mr. Robert A. Laurence, Executive Officer, OME, Region V by letter dated April 7, 1960. The drilling, as explained in the following text, is characterized by the intent to lengthen the nickel orebody on land in both northerly and southerly directions.

Drill Hole No. 11 (H-32-S-1)

The ice drilling program located the ultra-basic body on the Crawford Pond ice grid beneath the coordinates 42.00S & 4.00E (Drill Hole E-1) and 52.00S & 3.75E (Drill Hole E-3). Extensive Vertical Coil EM surveys run in both northward and southward directions had conclusively connected the nickel ore conductor on the Harriman grid with the

East-Side Conductor on the ice grid. Correlation of the Vertical Coil EM survey with the Self-Potential and Magnetometer surveys suggested the location of drill hole H-32-S-1. The specific location of the drill hole is approximately 180' north of the gossan pit located on the Harriman grid at 34.00S & 1.5E. In 1959 this pit had been drilled with the pack-sack unit providing core with significant sulfide. Two holes were drilled in the pit with the first hole (Bird #1) located at 33.75S & 1.50E. Since this first hole was cutting excessive pegmatite and quartz rock, the hole was terminated at 34'0". A second hole was drilled at 33.95S & 1.4E to a depth of 32'4", the core of which provided more adequate information about the sulfide content of the ultra-basic. Both logs of these pack-sack holes are submitted with this report for observation. Based on the information listed above, drill hole H-32-S-1 was designed to investigate the geophysical anomalies and expected to cut ultra-basic rock with significant sulfides. Peridotite was cut from 255' to 287' containing a maximum of 20% pyrrhotite. Based on the strength of the geophysical anomalies and the amount of pyrrhotite "squeezed" into the schist from 8'9" to 350'0" it is the opinion of the Field Team that full satisfaction was not derived from the drill hole with respect to the ultra-basic body at this location.

Drill Hole No. 12 (P-2)

Drill hole P-2 was designed to provide information with respect to the anomalies obtained from the various geophysical surveys on the north end of the Harriman grid and to supplement the information obtained from drill hole P-1. Since P-1 was designed to investigate the Potential-Drop-Ratio anomaly in addition to the anomalous values of the other geophysical surveys it was necessarily collared at 18N & 5.2E. This drill hole cut through the anomalous area defined by the Magnetometer, Horizontal Loop EM and Vertical Loop EM surveys at a depth of 400' to 500'. Although this horizon was masked by pegmatite, the possibility remained that the drill hole could have passed beneath the conductor horizon. Drill hole P-2 cut basic rock containing 5% to 12% finely-divided and disseminated pyrrhotite from 26' to 250' drill hole depth. This hole was stopped at 315' in pegmatite. No graphite was cut in this drill hole and it is the opinion of some company personnel that the amount of sulfide in the drill core is sufficient to represent the geophysical conductor. If this be true with respect to the Horizontal Loop EM survey then the progressively increased response toward the south suggests a corresponding increase in sulfide content toward the south and not necessarily a decrease in depth to the conductor.

Drill Hole No. 13 (H-15.8-S)

During the Stage II drilling program, Drill hole CP-5 (Location: 14.3S and 1.45E; Azimuth: N 72° W; Angle -45°) cut peridotite from 214' to 374' drill hole depth and was considered an extraordinarily valuable hole with respect to the sulfide content in the core. In an attempt to extend the nickel orebody to the south, drill hole CP-13 was drilled at the coordinates: Location 17S & 1.15E; Azimuth N 72° W; Angle -45°. Although CP-13 cut peridotite from 186' to 339' the sulfide content of the core did not exceed 10%. Drill hole CP-15 drilled at the following coordinates: Location 20S & 1.15E; Azimuth N.72° W; Angle -45°, cut no peridotite to the total depth of 450'. During the Stage III drilling program, drill hole H-15.8-S was designed to test the consistent and valid geophysical conductor at a different horizon. Peridotite was cut in this hole from 224' to 395' drill hole depth. The amount of sulfide in the core is significant to the extent that the reasons for designing the hole were justified. The drill log of H-15.8-S accompanies this report.

Drill Hole No. 14 (E-4)

In designing drill hole E-4, full account was taken of the mineralized ultra-basic horizons cut in drill hole E-1 and drill hole E-3. Both E-1 and E-3 were drilled through the ice on Crawford Pond during the Stage III drilling program. The coordinates of these two holes are:

Drill Hole No. 5 (E-1)
Location: 42.00S & 4.00E
Angle: -90°

Drill Hole No. 10 (E-3)
Location: 52.00S & 3.75E
Angle: -90°

The center of the ore zone on E-1 and E-3 was projected southward and used as the center of a target area below the Crawford Pond ice grid coordinates 59.10S & 2.40E. The diameter of the target area as determined by the width of the heavily mineralized portion of E-3 core is approximately 70'. An angle of -41° from the collar location of drill hole E-4 cuts the target area in the center. Based on information derived from E-3 it is expected that E-4 will cut diorite at 350' and cut peridotite at 375' drill hole depths. If the heavily mineralized horizon persists from E-3 to the target area of E-4, the center of the ore zone should be cut at approximately 430' drill hole depth in E-4. As mentioned in connection with the location of other drill holes, extensive Vertical Coil EM work was done on the Crawford Pond ice grid during the Stage III drilling program in preparation for the location of future drill holes such as E-4.

DRILL LOG

Hole No.:	H-32-S-1	Angle:	-90°
Location:	32S + 0.5E	Depth:	512'
	Harriman Grid	Elevation:	205.8'
		Logged by:	D. E. Wyke

Drill Hole Data:

0'0"	- 2'0"	BX casing
2'0"	- 8'6"	BX core
8'6"	- 512'0"	AX core

Depth			Lithology
0'0"	-	2'0"	Overburden.
2'0"	-	4'2"	Pegmatite: quartz, biotite.
4'2"	-	8'9"	Schist: quartz, biotite; strong pegmatization; minor chlorite; schistosity angle inconsistent; occasional pyrrhotite crystal; minor copper; sulfide probably associated with pegmatite.
8'9"	-	19'2"	Pegmatite: quartz, biotite.
19'2"	-	21'0"	Pegmatized rock: quartz-biotite schist at top and bottom of section; 19'5" - 20'3" pegmatized dolomite or marble with 1% to 3% pyrrhotite and minor serpentine and chlorite.
21'0"	-	33'5"	Pegmatite: quartz, biotite; occasional pyrrhotite crystal.
33'5"	-	34'5"	Diorite: fine-grained; -1% pyrrhotite; top and bottom altered.
34'5"	-	40'6"	Pegmatite: quartz, biotite.
40'6"	-	46'5"	Schist: hornblende; minor pyrrhotite; calcite on fractures; 44'5" - 45'4" pegmatized carbonate with 1% pyrrhotite in lower 3/4 zone.
46'5"	-	54'9"	Pegmatite: quartz, biotite; few narrow zones hornblende schist.

54'9"	-	60'0"	Schist: hornblende; numerous 1/8" veins of quartz.
60'0"	-	66'3"	Pegmatite: quartz, biotite.
66'3"	-	71'8"	Schist: hornblende; 1/8" veins quartz; 70'8" - 71'8" strong pegmatization.
71'8"	-	73'7"	Pegmatite: quartz, biotite.
73'7"	-	75'3"	Pegmatized carbonate.
75'3"	-	77'4"	Pegmatite: quartz, biotite.
77'4"	-	78'11"	Schist: hornblende with 1/8" quartz veins.
78'11"	-	110'10"	Pegmatite: quartz, biotite; 79'0" - 79'8" quartz-biotite schist; 88'8" - 89'7" top 3" biotite-rich with 1% pyrrhotite and lower part hornblende schist; 105'0" - 105'8" quartz-biotite schist.
110'10"	-	113'6"	Schist: quartz, biotite; chlorite; minor graphite; strong pegmatization; generally irregular schistosity angle; 1% to 5% pyrrhotite parallel to schistosity.
113'6"	-	120'0"	Pegmatite: quartz, muscovite; minor garnet.
120'0"	-	130'6"	Schist: quartz, biotite; muscovite, chlorite; minor graphite; pyrrhotite to 1%.
130'6"	-	139'0"	Pegmatite: quartz, muscovite; minor garnet.
139'0"	-	171'6"	Schist: quartz, biotite, chlorite; graphite 1% to 2%; pyrrhotite 2% to 5% parallel to schistosity; 149'9" - 150'5" dominantly quartz; 151'9" - 152'2" quartz-muscovite pegmatite 155'2" - 155'11" quartz-muscovite pegmatite
171'6"	-	179'0"	Pegmatite: quartz, biotite, muscovite.

179'0"	-	186'5"	Schist: quartz, biotite, chlorite; minor garnet; probable serpentine; minor graphite; generally 2% to 5% pyrrhotite; 182'4" - 183'6" quartz, muscovite pegmatite.
186'5"	-	187'8"	Quartz with localized abundant biotite.
187'8"	-	204'0"	Pegmatite: quartz, biotite.
204'0"	-	216'8"	Schist: quartz, biotite, chlorite; possible serpentine; 2% to 5% pyrrhotite parallel to schistosity; 213' - 215' schistosity angle 40° to 45°.
216'8"	-	219'5"	Pegmatite: quartz, biotite; lower 5" quartz-muscovite pegmatite with several large masses pyrrhotite associated with quartz.
219'5"	-	231'0"	Schist: quartz, biotite, chlorite; minor garnet; minor graphite; 224'4" - 224'11" several large masses pyrrhotite associated with quartz.
231'0"	-	234'9"	Schist: quartz, biotite, chlorite; 1% to 5% pyrrhotite; minor graphite and garnet.
234'9"	-	237'10"	Pegmatite: quartz, biotite, muscovite.
237'10"	-	240'1"	Pegmatized quartz-biotite schist with abundant garnet.
240'1"	-	241'10"	Pegmatite: quartz, biotite.
241'10"	-	255'10"	Schist: quartz, biotite, chlorite; bands of quartz-muscovite pegmatite; schistosity angle 50°.
255'10"	-	261'9"	Peridotite: pyroxene, chlorite, anthophyllite, serpentine; pyrrhotite 5% to 15%; 257'7" - 259'0" quartz, biotite pegmatite; 260'9" - 261'2" quartz, biotite pegmatite; 261'2" - 261'9" biotite-rich peridotite? with serpentine on fractures.
261'9"	-	275'0"	Peridotite: pyroxene, chlorite; serpentine; pyrrhotite 1% to 2%.

275'0"	-	278'4"	Pegmatite: quartz, biotite; probable inclusions of biotite-rich ultrabasic from 277'2" - 277'10".
278'4"	-	282'0"	Peridotite: pyroxene, chlorite, serpentine; pyrrhotite to 5%.
282'0"	-	282'7"	Pegmatite: quartz with pyrrhotite in 1/8" veinlets.
282'7"	-	287'4"	Peridotite: biotite-rich: altered; 1% to 2% pyrrhotite: 285'2" - 285'10" quartz-biotite pegmatite; 286'5" - 287'4" quartz-biotite pegmatite.
287'4"	-	293'10"	Schist: quartz, biotite, chlorite; minor graphite; pyrrhotite 2% to 5% parallel to schistosity.
293'10"	-	294'6"	Pegmatite; quartz, biotite, garnet.
294'6"	-	296'3"	Schist: hornblende; thin bands of quartz; 1% pyrrhotite.
296'3"	-	297'0"	Pegmatite: quartz, biotite; 2" band biotite schist in center of section.
297'0"	-	312'2"	Schist: quartz, biotite, chlorite; garnet present; minor graphite; pyrrhotite 2% to 5%; 310'3" - 311'2" quartz; 310'10" - 311'2" pyrrhotite vein cutting core approximately 1" in thickness; 311'6" - 312'2" quartz-biotite pegmatite.
312'2"	-	317'0"	Schist: quartz, biotite; schistosity angle 55°.
317'0"	-	326'10"	Schist: hornblende with quartz stringers; 317'10" - 319'5" quartz-biotite pegmatite.
326'10"	-	328'10"	Pegmatite: quartz, biotite, muscovite.
328'10"	-	331'6"	Schist: quartz, biotite.
331'6"	-	337'4"	Pegmatite: quartz, biotite.
337'4"	-	338'9"	Schist: hornblende.

338'9"	-	350'4"	Schist: quartz, biotite, chlorite; highly pegmatized; pyrrhotite to 1%; schistosity angle 65°.
350'4"	-	355'2"	Pegmatite: quartz with minor biotite; garnet lower 6".
355'2"	-	372'6"	Schist: quartz, biotite.
372'6"	-	377'9"	Pegmatite: quartz, muscovite, garnet.
377'9"	-	415'5"	Schist: quartz, biotite; strong pegmatization in some zones 1' to 3' in thickness; few zones include chlorite; only minor mineralization.
415'5"	-	427'10"	Schist: hornblende; calcite in fractures.
427'10"	-	512'0"	Schist: quartz, biotite; minor zones with chlorite; schistosity angle 40° to 50°; 463'0" - 464'2" hornblende schist.

* * * Total Depth - 512'0" * * *

DRILL LOG

Hole No.	P-2	Angle:	-90°
Location:	20N + 2.25E	Depth:	315'
	Harriman Grid	Elevation:	290.5' a.s.l.
		Logged by:	D.E. Wyke

Drill Hole Data:

0'0" - 26'6"	BX casing
26'6" - 27'7"	BX core
27'7" - 315'0"	AX core

Depth	Lithology
0'0" - 26'6"	Overburden.
26'6" - 33'6"	Peridotite: pyroxene, chlorite; finely divided and disseminated pyrrhotite to 10%.
33'6" - 39'0"	Pegmatite: quartz, biotite.
39'0" - 44'6"	Peridotite: pyroxene, chlorite; finely divided and disseminated pyrrhotite to 10%.
44'6" - 47'0"	Pegmatite: quartz, biotite.
47'0" - 47'9"	Peridotite: pyroxene, chlorite; finely divided and disseminated pyrrhotite to 10%.
47'9" - 48'7"	Pegmatite: quartz, biotite.
48'7" - 59'5"	Diorite: fine-grained; pyrrhotite to 20%.
59'5" - 61'2"	Pegmatite: quartz, biotite; biotite-rich below 60'5".
61'2" - 67'6"	Diorite: fine-grained; pyrrhotite to 1%.
67'6" - 76'3"	Pegmatite: quartz, biotite; 68'8" - 69'2" quartz-diorite; 73'2" - 74'9" biotite-rich pegmatite.
76'3" - 94'9"	Peridotite: pyroxene, chlorite, anthophyllite; pyrrhotite generally 5% to 8%; sulfide finely divided and disseminated; 83'8" - 84'4" quartz-biotite pegmatite; 84'4" - 85'6" biotite and chlorite-rich peridotite; 86'0" - 94'9" pyrrhotite 8% to 10%.

94'9"	-	98'3"	Pegmatite: quartz, biotite.
98'3"	-	99'5"	Peridotite: pyroxene, chlorite, biotite; pyrrhotite to 3%.
99'5"-	-	100'1"	Pegmatite: quartz, biotite.
100'1"	-	106'0"	Peridotite: pyroxene, chlorite; pyrrhotite to 3%.
106'0"	-	116'4"	Peridotite: pyroxene, chlorite; pyrrhotite 8% to 10%; 109'3" - 110'2" quartz-biotite pegmatite.
116'4"	-	120'4"	Pegmatite: quartz, biotite.
120'4"	-	121'6"	Peridotite: pyroxene, chlorite; minor biotite; pyrrhotite 5%.
121'6"	-	195'5"	Pegmatite: quartz, biotite.
195'5"	-	204'9"	Peridotite: pyroxene, chlorite; pyrrhotite 8% to 10%; anthophyllite lower 8".
204'9"	-	208'8"	Pegmatite: quartz, biotite.
208'8"	-	220'3"	Peridotite: pyroxene, chlorite; pyrrhotite 8% to 10%; sulfide finely-divided and disseminated.
220'3"	-	245'1"	Pegmatite: quartz, biotite; biotite-rich lower 8".
245'1"	-	250'0"	Gabbro: ? biotite-rich; pyrrhotite -1% to 1%.
250'0"	-	259'1"	Pegmatite: quartz, biotite.
259'1"	-	265'9"	Pegmatite: quartz, muscovite; minor garnet.
265'9"	-	273'9"	Quartz: minor tourmaline.
273'9"	-	315'0"	Pegmatite: quartz-muscovite and quartz-biotite; minor garnet; minor tourmaline.

* * * TDA - 315'0" * * *

DRILL LOG

Hole No. H-15.8 -S
Location: 15.80S + 1.85E
Harriman Grid

Angle: -45°
Depth: 421'
Elevation: 183'6"
Logged by: D. E. Wyke

Drill Hole Data:

0'0"	- 11'1"	NX casing
0'0"	- 12'0"	BX casing
8'9"	- 11'1"	NX core
11'1"	- 12'0"	BX core
12'0"	- 421'0"	AX core

Depth			Lithology
0'0"	-	8'9"	Overburden.
8'9"	-	11'7"	Pegmatite: quartz, biotite.
11'7"	-	18'6"	Schist: quartz, biotite, hornblende; schistosity angle 30°.
18'6"	-	27'8"	Schist: quartz, biotite, chlorite; minor graphite.
27'8"	-	86'0"	Pegmatite: quartz, biotite; medium to fine-grained; numerous 2" to 6" bands of quartz-biotite schist.
86'0"	-	95'2"	Schist: quartz, biotite, hornblende; schistosity angle 50°; 86' 0" - 86'4" abundant garnet; 89'10" - 92'8" abundant garnet.
95'2"	-	98'10"	Schist: quartz, biotite, hornblende; poor schistosity; 2" to 4" bands of quartz-biotite schist.
98'10"	-	101'7"	Pegmatite: quartz, biotite; essentially a strongly pegmatized quartz-biotite schist; 100'10" - 101'6" quartz-hornblende with calcite in fractures.
101'7"	-	124'7"	Schist: quartz, biotite; schistosity angle 55° 108'6" - 111'6" garnet present; hornblende increase gradual in lower 3'.

124'7"	-	141'10"	Schist: quartz, hornblende; quartz in thin stringers at 30° angle; abundant calcite in fractures.
141'10"	-	151'7"	Schist: quartz, biotite; schistosity angle 47°.
151'7"	-	157'3"	Schist: hornblende; numerous quartz stringers cutting core at 45°.
157'3"	-	162'2"	Pegmatite: quartz, biotite; bands of hornblende schist; probably a pegmatized hornblende schist; abundant calcite on fractures in hornblende zones.
162'2"	-	183'7"	Schist: quartz, hornblende; quartz in stringers; 164'6" - 165'2" quartz dominant; 166'0" - 168'5" quartz dominant; 181'4" - 182'3" quartz dominant.
183'7"	-	190'2"	Schist: alternating quartz-biotite and quartz-biotite-hornblende; several quartz-biotite pegmatite zones 2" to 4"; 185'3" - 185'8" biotite-rich zone with minor pyroxene, chlorite, and 5% pyrrhotite.
190'2"	-	210'4"	Schist: quartz, biotite, chlorite; minor graphite; serpentine in fractures; 2 narrow 4" zones with hornblende and biotite; pyrite in vugular core lower 8"; pyrrhotite generally 1% through core parallel to schistosity; schistosity angle 65°.
210'4"	-	213'11"	Schist: quartz, biotite, hornblende.
213'11"	-	224'1"	Schist: quartz, biotite, chlorite; graphite 2% to 5%; graphite content higher lower 18", approximately 5% to 10%.
224'1"	-	242'2"	Peridotite: pyroxene, chlorite; 224'1" - 228'10" pyrrhotite 8% to 10%; 228'10" - 237'9" pyrrhotite 2% to 5% with less chlorite than adjacent zones; 237'9" - 242'2" pyrrhotite 8% to 10%.

242'2"	-	246'1"	Pegmatite: quartz, biotite; abundant fine-grained biotite.
246'1"	-	252'2"	Schist: quartz, biotite; strong pegmatization: 246'1" - 246'4" 1/8" pyrrhotite vein; 247'2" - 247'3" 1" pyrrhotite vein; 247'6" - 252'2" pyrrhotite to 20% with several bands of biotite-rich peridotite.?
252'2"	-	256'10"	Pegmatite: quartz dominant; minor biotite and muscovite; 255'5" - 256'1" band of biotite and chlorite-rich peridotite with 1% pyrrhotite.
256'10"	-	258'2"	Peridotite:? biotitite and chlorite-rich; pyrrhotite to 1%.
258'2"	-	259'3"	Pegmatite: quartz dominant; minor biotite and muscovite; minor garnet.
259'3"	-	276'9"	Peridotite: pyroxene, chlorite; biotite-rich in upper and lower 12"; 260'2" - 264'0" pyrrhotite 10% to 15%; 264'0" - 265'6" quartz-biotite pegmatite; 265'6" - 276'9" pyrrhotite 8% to 12%.
276'9"	-	280'5"	Pegmatite: quartz, biotite; 1/4" vein pyrrhotite at 278'2". 279'3" - 279'9" pyroxene-chlorite peridotite, biotite-rich, 1% pyrrhotite.
280'5"	-	290'8"	Peridotite: pyroxene, biotite and chlorite-rich; pyrrhotite 2% to 5%; a 2" peg vein at 290'1" with 50% pyrrhotite.
290'8"	-	295'8"	Pegmatite: quartz, biotite; 290'8" - 291'9" pyrrhotite veins amounting to 25% rock volume; 293'2" - 293'6" peridotite, barren.
295'8"	-	309'7"	Quartz-Diorite: finely divided pyrrhotite to
309'7"	-	314'7"	Massive pyrrhotite with high copper content.
314'7"	-	315'6"	Pegmatite: pyrrhotite to 30% of volume.

315'6"	-	318'7"	Peridotite: pyroxene, chlorite; pyrrhotite to 30%.
318'7"	-	319'8"	Pegmatite: quartz, biotite.
319'8"	-	328'6"	Peridotite: pyroxene, chlorite; pyrrhotite 15% to 25%.
328'6"	-	331'0"	Pegmatite: quartz, biotite.
331'0"	-	332'4"	Peridotite: biotite and chlorite-rich; pyrrhotite to 25% in center 4" of zone.
332'4"	-	333'4"	Pegmatite: quartz, biotite.
333'4"	-	376'4"	Peridotite: pyroxene, chlorite; generally 15% to 20% pyrrhotite; lower 19" pyrrhotite to 30% with high copper content.
376'4"	-	386'0"	Pegmatite: quartz, biotite; pyrrhotite veinlets in fractures to 2% total volume.
386'0"	-	395'6"	Peridotite: anthophyllitic; pyrrhotite to 5%.
395'6"	-	398'5"	Pegmatite: quartz, biotite; numerous 1" to 2" bands biotite-rich.
398'5"	-	421'0"	Schist: quartz, biotite, chlorite; graphite 1% to 3%; pyrrhotite to 1% parallel to schistosity; schistosity angle 60° to core axis.

* * * Total Depth 421'0" * * *

DRILL LOG

Hole No.:	E-4	Angle:	-41°
Location:	60.00 S + 5.50 E.	Depth:	In process
	Crawford Pond	Elevation:	120' a.s.l.
	Ice Grid	Logged by:	R. Holmes

Drill Hole Data: (Through 30 April 1960)

0'0" - 22'0"	BX casing
18'0" - 22'0"	BX core
22'0" - 60'0"	AX core

Depth			Lithology
0'0"	-	18'0"	Overburden.
18'0"	-	34'10"	Schist: quartz, biotite, chlorite; calcite on fracture surfaces; 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 crystals.
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"	-	60'0"	Pegmatized marble or dolomite.

* * * Total Depth to date 60'0" * * *

DRILL LOG

Hole No.	Bird #1	Depth:	34'0"
Location:	33.75S + 1.5E	Angle:	-90°
		Logged by:	
Elevation:	173.4'		D. E. Wyke

Core size: EX

Depth			Lithology
0'0"	-	2'6"	gossan, no core recovery.
2'6"	-	23'3"	peridotite with heavy sulfides (pyrrhotite 30%, chalcopyrite 1%); chloritic lower 15".
23'3"	-	28'11"	quartz biotite pegmatite; minor sulfide in veinlets; 25'10" - 26'2" zone of heavy sulfide (pyrrhotite 30%, chalcopyrite 2%-3%).
28'11"	-	29'5"	talcose chlorite peridotite; barren of sulfides.
29'5"	-	34'0"	quartz biotite pegmatite; dominant quartz.

* * TDA - 34'0" * *

DRILL LOG

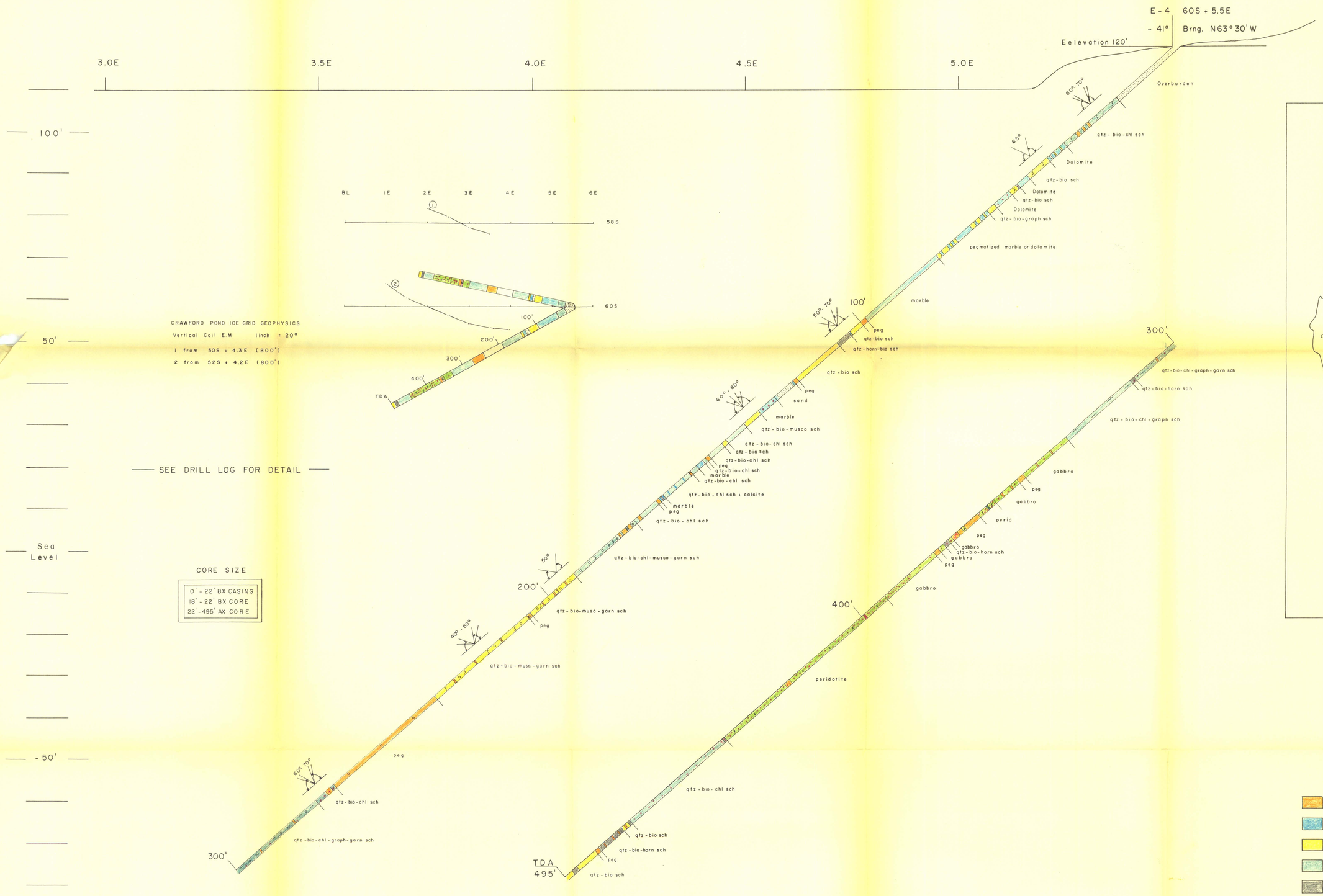
Hole No.	Bird #2	Depth:	52' 6"
Location:	33.95S + 1.4E	Angle:	-90°
Elevation:	173.4'	Logged by:	D.E. Wyke

Core Size: EX

Depth			Lithology
0'0"	-	8'4"	gossan; no core recovery.
8'4"	-	14'0"	pyroxene peridotite with heavy sulfide (pyrrhotite 25%, chalcopyrite 1%); 13" core lost.
14'0"	-	14'6"	quartz biotite garnet schist grading to biotite schist.
14'6"	-	19'10"	quartz biotite pegmatite; minor pyrrhotite and chalcopyrite in veinlets.
19'10"	-	22'9"	talcose chlorite peridotite with sulfide (pyrrhotite 15%, chalcopyrite 1%).
22'9"	-	24'10"	quartz biotite pegmatite with minor pyrrhotite and chalcopyrite in veinlets.
24'10"	-	25'10"	talcose chlorite peridotite with sulfide (pyrrhotite 15%, chalcopyrite 1%); biotite rich top 2".
25'10"	-	26'5"	quartz biotite pegmatite with pyrrhotite (2%) in fractures.
26'5"	-	29'2"	talcose chlorite peridotite with sulfide (pyrrhotite 15%, chalcopyrite 2%); 27'8"-28'3" peridotite with sulfide (pyrrhotite 30%, chalcopyrite 1%).
29'2"	-	31'2"	quartz biotite pegmatite with minor sulfide in veinlets.
31'2"	-	32'4"	biotite rich talcose peridotite with sulfide (pyrrhotite 10%, minor chalcopyrite).

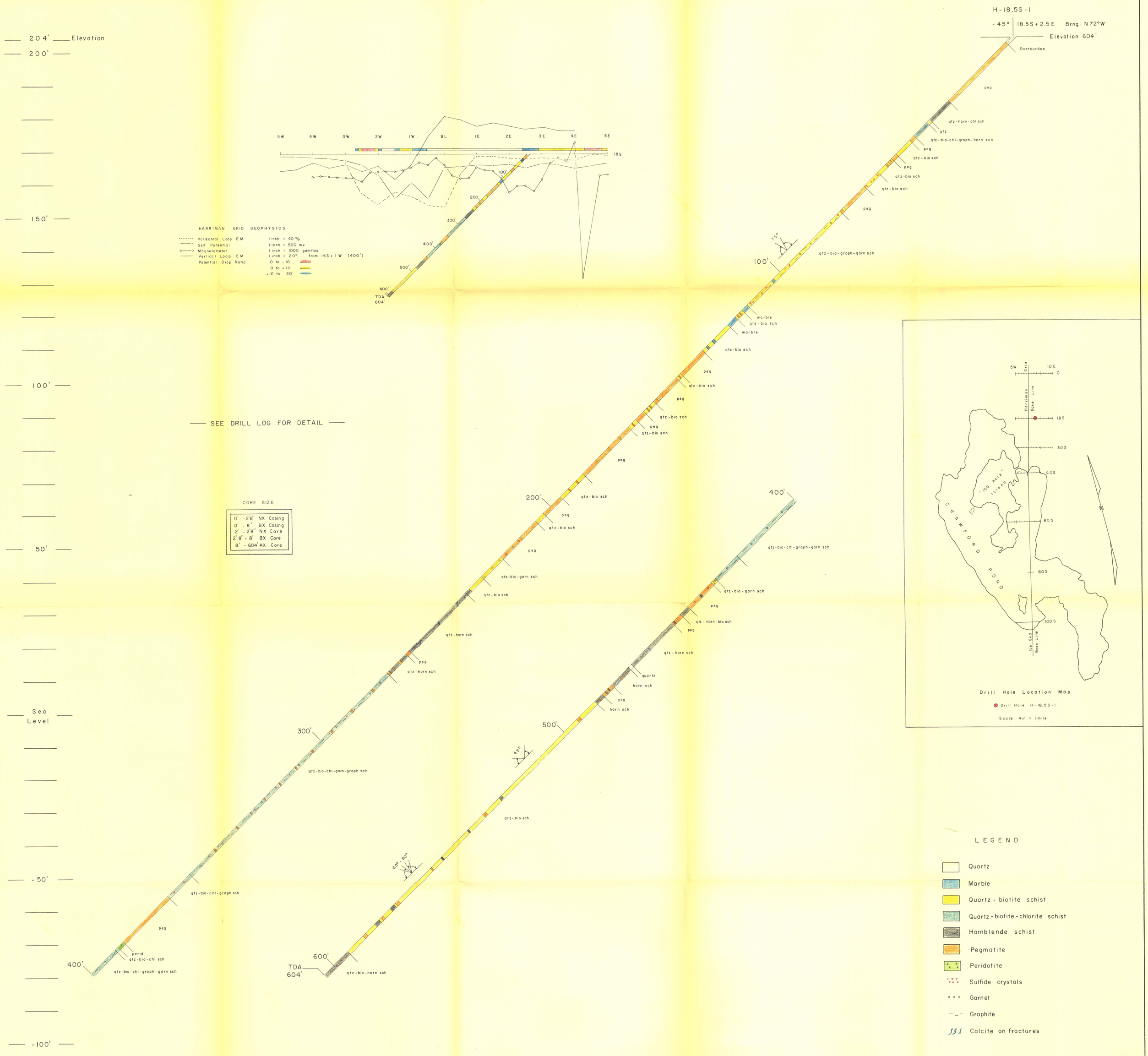
32'4"	-	35'6"	quartz biotite pegmatite.
35'6"	-	36'2"	alternate bands of quartz biotite pegmatite and quartz biotite schist.
36'2"	-	36'10"	talcose biotite schist with minor pyroxene; barren.
36'10"	-	38'8"	quartz biotite pegmatite with minor pyrrhotite and chalcopyrite in fractures.
38'8"	-	40'0"	talcose biotite peridotite with minor sulfide (pyrrhotite 2% in upper 6") heavy sulfide (pyrrhotite 20%, chalcopyrite 1%) in rest of section.
40'0"	-	42'5"	talcose chlorite peridotite with minor sulfide (pyrrhotite 1%); section biotite rich upper 8".
42'5"	-	52'6"	quartz biotite schist, fine-grained; occasional narrow bands quartz biotite pegmatite.

* * * TDA - 52'6" * * *

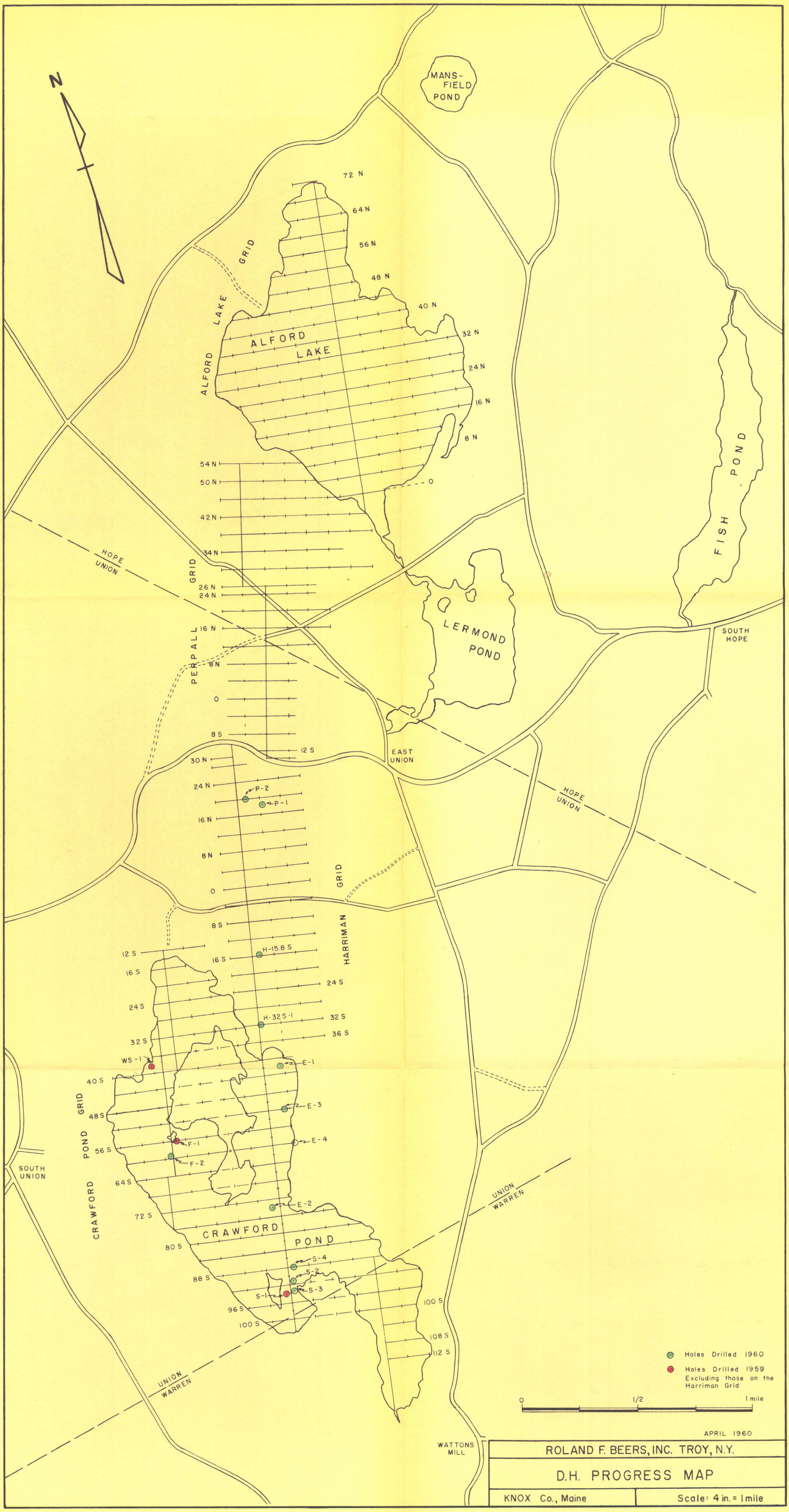


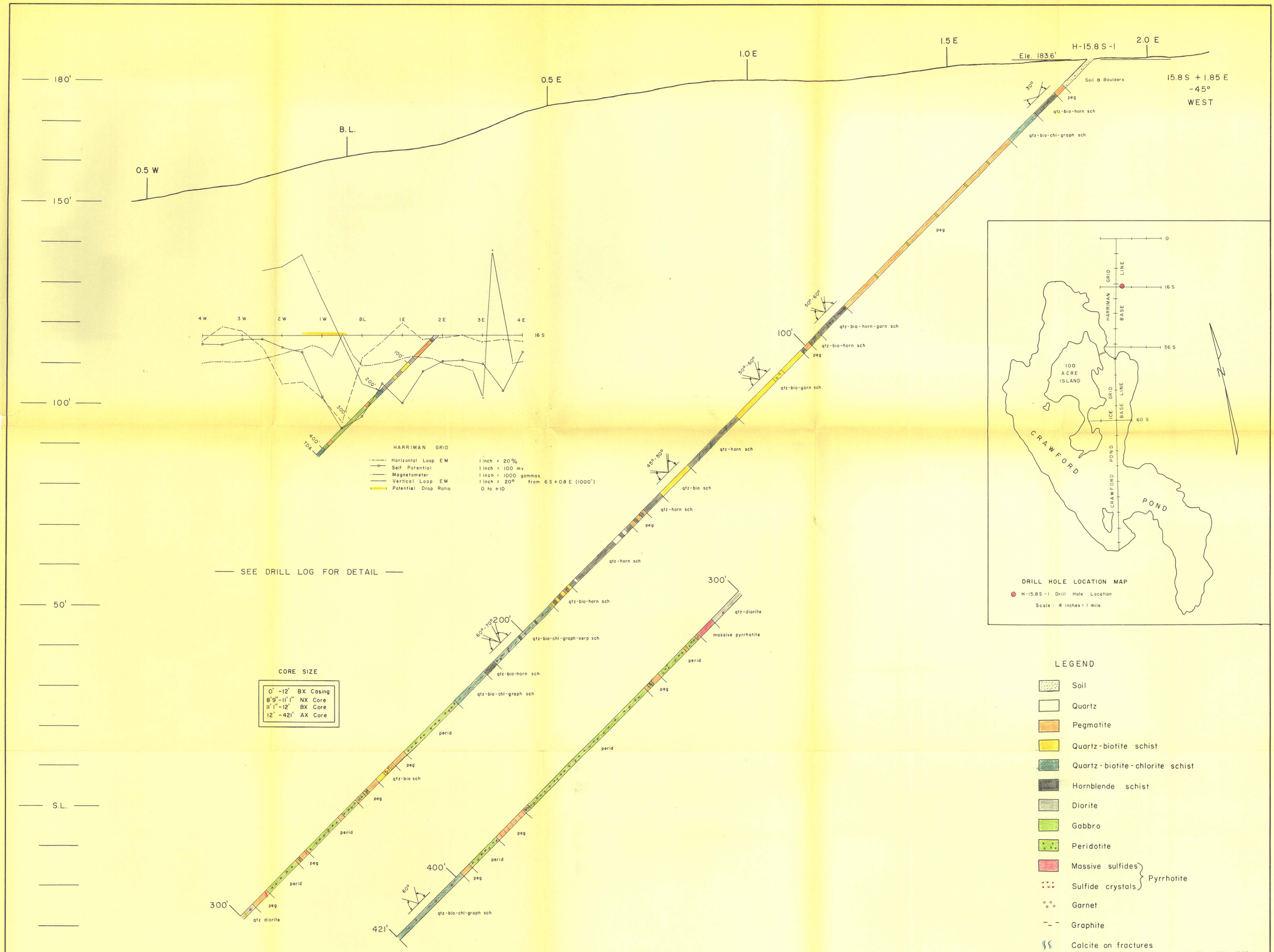
May, 1960

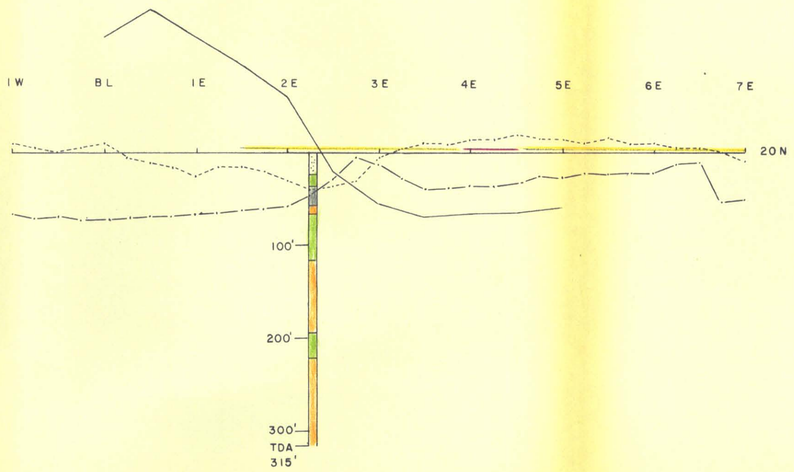
Drawn by R.P.	Stage	ROLAND F. BEERS, INC. TROY, N.Y.
Traced by	Area	DRILL HOLE CROSS SECTION E-4 LINE 60.0S
Approved by	Phase	County KNOX · Twnp UNION · Scale 1in = 10ft.


H-18.5S-1
-45° 18.5S + 2.5E Brng. N72°W
Elevation 604'
Overburden
204' Elevation
200'
150'
100'
50'
Sea Level
-50'
-100'
5W 4W 3W 2W 1W BL 1E 2E 3E 4E 5E
18S
HARRIMAN GRID GEOPHYSICS
Horizontal Loop EM 1 inch = 40 %
Self Potential 1 inch = 500 mv
Magnetometer 1 inch = 1000 gammas
Vertical Loop EM 1 inch = 20° from 14S + 1W (400')
Potential Drop Ratio 0 to -10
0 to +10
+10 to 20
SEE DRILL LOG FOR DETAIL
CORE SIZE
0' - 2'8" NX Casing
0' - 8' BX Casing
2' - 2'8" NX Core
2'8" - 8' BX Core
8' - 604' AX Core
TDA 604'
peg
qtz-horn-chl sch
qtz
qtz-bio-chl-graph-horn sch
qtz-bio sch
qtz-bio-graph-garn sch
marble
qtz-bio-chl-graph-garn sch
qtz-bio-garn sch
qtz-horn sch
qtz-horn-bio sch
quartz
horn sch
qtz-bio-chl-garn-graph sch
qtz-bio-chl-graph sch
perid
qtz-bio-chl sch
qtz-bio-horn sch
75°
45°
60°-80°
Drill Hole Location Map
Drill Hole H-18.5S-1
Scale 4in. = 1mile
5W 10E
Grid
Harriman Base Line
0
18S
30S
40S
60S
80S
100S
"100 Acre" Island
CRAWFORD POND
N
Ice Grid Base Line
LEGEND
Quartz
Marble
Quartz-biotite schist
Quartz-biotite-chlorite schist
Hornblende schist
Pegmatite
Peridotite
Sulfide crystals
Garnet
Graphite
Calcite on fractures
May, 1960
Drawn by R.P.
Traced by
Approved by
Stage
Area
Phase
ROLAND F. BEERS, INC. TROY, N.Y.
DRILL HOLE CROSS SECTION
H-18.5S-1
County KNOX
Twnp UNION
Scale 1in = 10ft.

N
MANS-FIELD POND
ALFORD LAKE GRID
ALFORD LAKE
72 N
64 N
56 N
48 N
40 N
32 N
24 N
16 N
8 N
0
PERPALL GRID
54 N
50 N
42 N
34 N
26 N
24 N
16 N
8 N
0
8 S
12 S
HOPE UNION
LERMOND POND
FISH POND
SOUTH HOPE
EAST UNION
HOPE UNION
30 N
24 N
16 N
8 N
0
P-2
P-1
HARRIMAN GRID
8 S
12 S
16 S
24 S
32 S
36 S
H-15.8 S
H-18.5 S-1
H-32 S-1
E-1
E-3
E-4
E-2
WS-1
F-1
F-2
CRAWFORD POND GRID
40 S
48 S
56 S
64 S
72 S
80 S
88 S
96 S
100 S
108 S
112 S
CRAWFORD POND
S-4
S-2
S-3
S-1
SOUTH UNION
UNION WARREN
UNION WARREN
WATTONS MILL
Holes Drilled 1960
Holes Drilled 1959 Excluding those on the Harriman Grid
0
1/2
1 mile
MAY 1960
ROLAND F. BEERS, INC. TROY, N.Y.
D.H. PROGRESS MAP
KNOX Co., Maine
Scale: 4 in. = 1 mile


N
MANS-FIELD POND
ALFORD LAKE
ALFORD LAKE GRID
72 N
64 N
56 N
48 N
40 N
32 N
24 N
16 N
8 N
0
PERPALL GRID
54 N
50 N
42 N
34 N
26 N
24 N
16 N
8 N
0
8 S
12 S
HOPE UNION
LERMOND POND
FISH POND
SOUTH HOPE
EAST UNION
HARRIMAN GRID
30 N
24 N
16 N
8 N
0
8 S
12 S
16 S
24 S
32 S
36 S
P-2
P-1
H-15.8 S
H-32 S-1
CRAWFORD POND GRID
40 S
48 S
56 S
64 S
72 S
80 S
88 S
96 S
100 S
108 S
112 S
WS-1
E-1
E-3
E-4
E-2
F-1
F-2
S-4
S-2
S-3
S-1
CRAWFORD POND
SOUTH UNION
UNION WARREN
WATTONS MILL
Holes Drilled 1960
Holes Drilled 1959 Excluding those on the Harriman Grid
0
1/2
1 mile
APRIL 1960
ROLAND F. BEERS, INC. TROY, N.Y.
D.H. PROGRESS MAP
KNOX Co., Maine
Scale: 4 in. = 1 mile


180'
150'
100'
50'
S.L.
0.5 W
B.L.
0.5 E
1.0 E
1.5 E
2.0 E
Ele. 183.6'
H-15.8 S-1
15.8 S + 1.85 E
-45°
WEST
Soil & Boulders
peg
qtz-bio-horn sch
qtz-bio-chl-graph sch
qtz-bio-horn-garn sch
qtz-bio-garn sch
qtz-horn sch
qtz-bio sch
qtz-bio-chl-graph-serp sch
qtz-bio-chl-graph sch
qtz-diorite
massive pyrrhotite
perid
qtz diorite
100'
200'
300'
400'
421'
TDA
30°
50°-60°
45°-50°
60°-70°
60°
4W
3W
2W
1W
BL
1E
2E
3E
4E
16 S
HARRIMAN GRID
Horizontal Loop EM
Self Potential
Magnetometer
Vertical Loop EM
Potential Drop Ratio
1 inch = 20%
1 inch = 100 mv
1 inch = 1000 gammas
1 inch = 20° from 6 S + 0.8 E (1000')
0 to +10
SEE DRILL LOG FOR DETAIL
CORE SIZE
0' -12' BX Casing
8'9"-11'1" NX Core
11'1"-12' BX Core
12' -421' AX Core
0
16 S
36 S
60 S
HARRIMAN BASE LINE GRID
ICE POND BASE LINE GRID
100 ACRE ISLAND
CRAWFORD POND
CRAWFORD
N
DRILL HOLE LOCATION MAP
H-15.8 S-1 Drill Hole Location
Scale: 4 inches = 1 mile
LEGEND
Soil
Quartz
Pegmatite
Quartz-biotite schist
Quartz-biotite-chlorite schist
Hornblende schist
Diorite
Gabbro
Peridotite
Massive sulfides
Sulfide crystals
Pyrrhotite
Garnet
Graphite
Calcite on fractures
DRILLED APRIL 1960
Stage
Area
Phase
Drawn by: S.H.C.
Approved by:
ROLAND F. BEERS, INC. TROY, N.Y.
DRILL HOLE CROSS SECTION
H-15.8 S-1
County: KNOX
Town: UNION
Scale: 1in.=10ft.



HARRIMAN GRID LINE 20N

Vertical Coil EM	1in = 20° From 14N + 3.2E (600')
Magnetometer	1in = 1000 gammas
Horizontal Coil EM	1in = 20 %
Potential Drop Ratio	0 to -10
	0 to +10

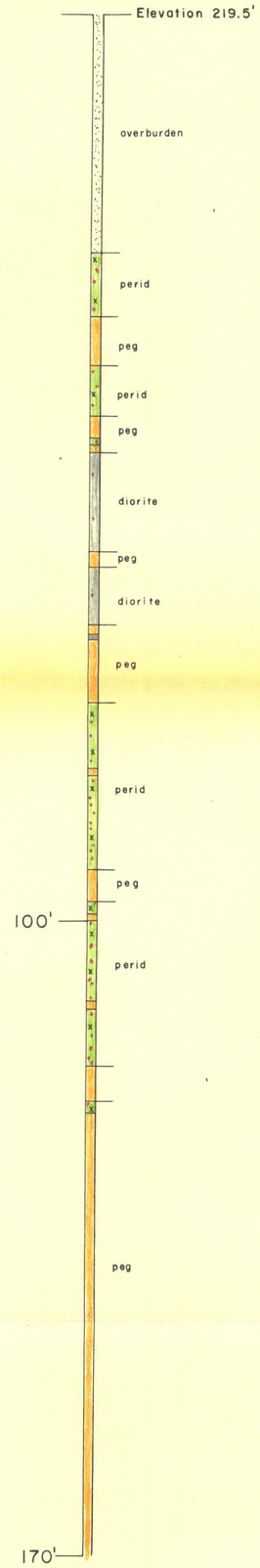
SEE DRILL LOG FOR DETAIL

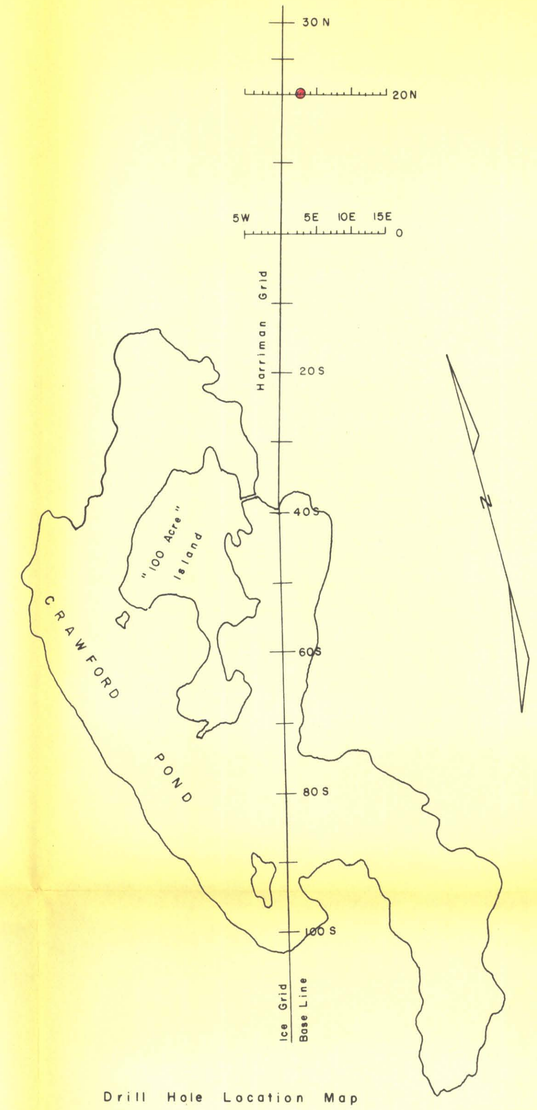
CORE SIZE

0' - 26'6" BX CASING
26'6" - 27'7" BX CORE
27'7" - 315' AX CORE

P-2

20 N + 2.25E -90°





Drill Hole Location Map

● Drill Hole P-2

Scale 4in = 1mile

LEGEND

- Soil
- Quartz
- Diorite
- Pegmatite
- Peridotite
- Gabbro
- Sulfide crystals
- Garnet

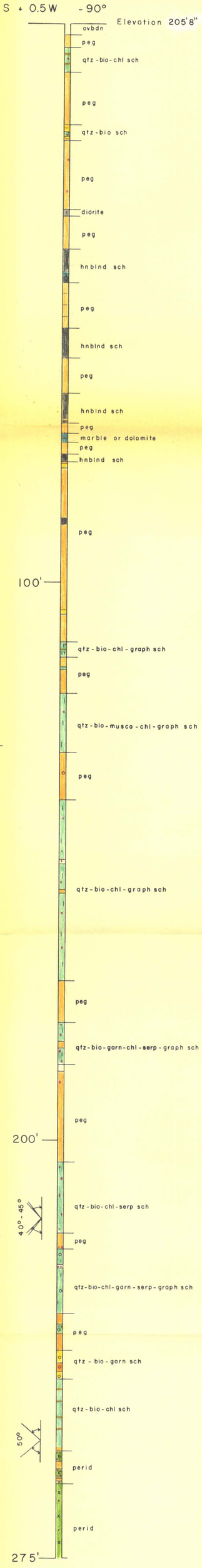
April, 1960

Drawn by R.P	Stage	ROLAND F BEERS, INC. TROY, N.Y
Traced by	Area	DRILL HOLE CROSS SECTION P-2 LINE 20.0N
Approved by	Phase	County KNOX · Twnp UNION · Scale 1in = 10 ft.

H-32S-1

32.0S + 0.5W -90°

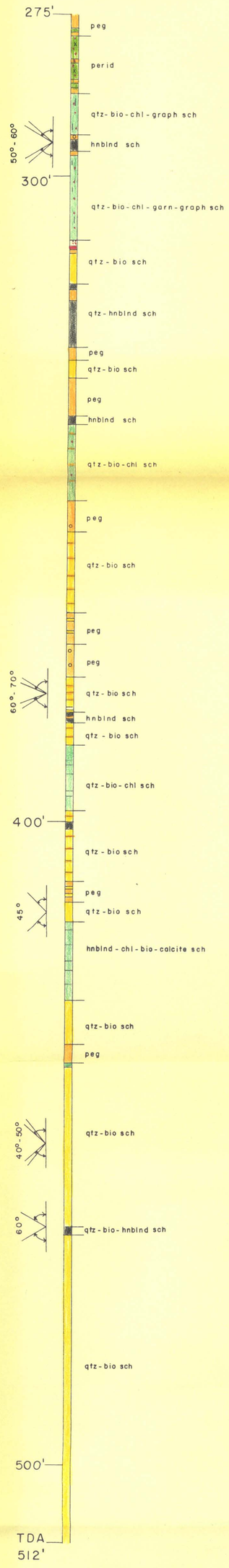
Elevation 205'8"

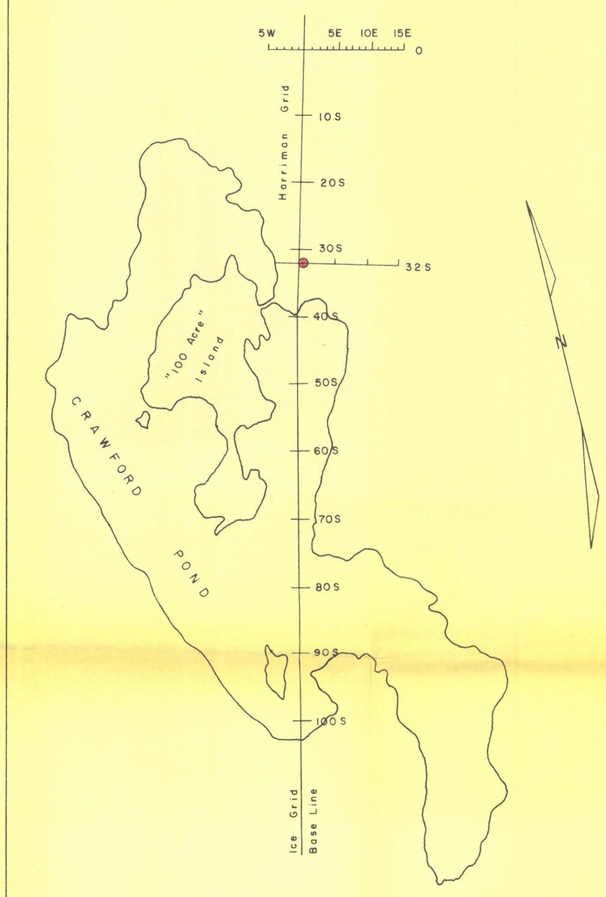


— SEE DRILL LOG FOR DETAIL —

CORE SIZE

0' - 8'6"	BX CASING
2' - 8'6"	BX CORE
8'6" - 512'	AX CORE

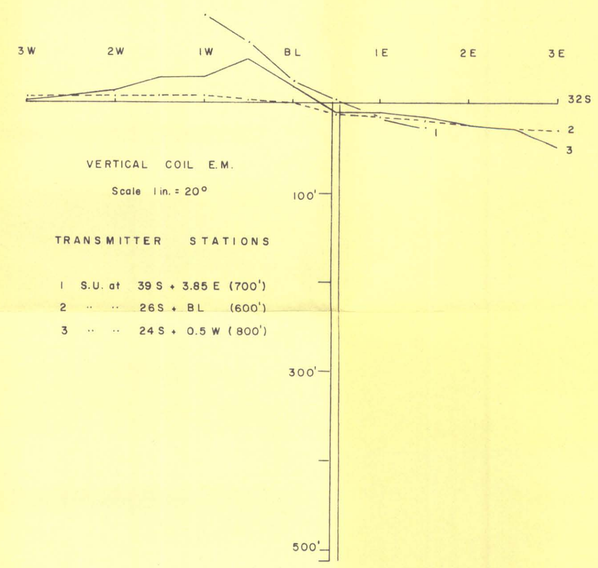




Drill Hole Location Map

● Drill Hole H-32S-1

Scale 4 in. = 1 mile



VERTICAL COIL E.M.

Scale 1 in. = 20°

TRANSMITTER STATIONS

1	S.U. at	39 S + 3.85 E	(700')
2	" "	26S + BL	(600')
3	" "	24 S + 0.5 W	(800')

- Quartz
- Pegmatite
- Marble & Dolomite
- Quartz-biotite schist
- Quartz-biotite-chlorite schist + serpentine
- Diorite
- Hornblende schist
- Gabbro
- Peridotite
- Massive sulfides } Pyrrhotite
- Sulfide crystals } Pyrrhotite
- Garnet
- Graphite

April, 1960

Drawn by R.P.	Stage	ROLAND F BEERS, INC. TROY, N.Y.
Traced by	Area	H-32S-1
Approved by	Phase	County KNOX · Twnp UNION · Scale 1in = 10 ft