

REPORT ON MCRAE CLAIMS, Keith Township, Ontario.

Forward

The information contained in this report was obtained from July 6th to July 11th, 1947. Most of this time was spent on the property. The writer supervised diamond drilling on the Wejack Property from 15th March to 15th June 1947. Knowledge of the area gained at that time greatly assisted the writer later when mapping the McRae Claims.

Location and Accessibility

The property consists of two claims numbered: 8-43942 and 8-43943. They occupy approximately the location of south half of Lot 18, Concession 9, Keith Township, Sudbury Mining Division, Ontario. The area of the property is about 80 acres.

The property is reached by road from JoBurke Siding, mileage 136, Ruel Sub-Division, Canadian National Railway. The road is in fair condition for tractors and horses. This road passes through the camps of JoBurke Gold Mines Limited, Garnet Gold Mines Limited and Wejack Mines Limited. The McRae claims are located some three hundred feet north of the Wejack Camp. The total distance from JoBurke Siding to the Wejack Camp is about 3-1/2 miles.

Property Owner

This property consisting of claims numbered S-43942 and S-43943 is owned by Mr. J. A. McRae, Burks Falls, Ontario.

For names and addresses of personnel who worked on the survey: see attached Report of Work Form.

General Geology

In general, the outcrops are covered with moss and clay. Only a small amount of stripping has been done and in no case has enough been done to give a true indication of the structure and economical value of the claims.

There are two main rock outcrops on the claims. These are located about the centre of the property. The north and south part of the claims are mostly covered with flat lying glacial drift, described as Clayey sand and some boulders. A narrow swamp of mostly cedar runs from the north down to the centre of the claims. The drainage from this swamp runs south-east to a beaver pond.

Descriptions of Rocks Found Andesite

Most of the rocks found were a light green coloured volcanic, to which the name Andesite was given.

In general, the Andesites found on the north of the claims were fine-grained and massive. From the centre of the claims

to the south, the Andesite is well sheared in places with alteration to carbonates. Occassional mineralization with pyrite was found in these sheared rocks.

Diorite

Considerable variations were found in the Diorite rocks. In some cases the Diorite was fairly coarse grained with about 60% feldspar and 40% hornblende. In other cases, the Diorite was finer grained with increase of hornblende present. One exposure of Diorite about centre of main east outcrop showed a graduation from fine to coarse and to fine-grained again.

Schist

A highly carbonated schist was found on southern edge of the main eastern outcrop. Occasionally a little pyrite was found in the schist. Some talc chlorite alteration was found at 9 plus 50' east on east=west picket line through the centre of the property.

Quartz

Quartz veins up to 2 feet in width were found. The quartz was associated with a black mineral, possibly tourmaline. No visible mineralization was found in the quartz veins.

Structure

There are indications of a shear zone passing through the south part of the claims. The general trend of the shearing would appear to be between 70° and 80° and dips to the north between 40° and 65° .

The schist found on the south edge of the main east outcrop does not appear on the large west outcrop.

The large diorite mass, probably a sill, in the centre of the claims trending east-west would appear to be offset. Although evidence is obscurred by overburden, there is a possibility of a north-south fault through centre of the property.

Conclusions

There are good indications of a shear zone extending in an east-west direction across the southern part of the claims.

The claims are situated in a favourable location with regard to neighbouring properties.

The writer recommends that the claims be held in good standing, pending further exploration of neighbouring properties.

W. M. Duncan, B.A. Geologist, JoBurke, Ontario.

25 Leptember 1947.



Report to

The President and Board of Directors

Pardners Mines Limited Montreal, Que.

Concerning

Geology of

The Hendricksen Lake Claim Group

Tashota District Ontario

INTRODUCTION:

Pardners Fines Limited held in 1947 a group of 50 claims in the Oboshkegan and Tashota districts. The claims, as reported to me by commany officials, include the following:

OBOSHEL GAN TELETRICT

NO 18	K.E.	Ili and I	K.K. 1	5 (Patente	a)
No 1 B	K.K.	3535 to	3537	15 (Patente Inclusive Inclusive	(staked)
NO B	K.K.	3539 to	3543	Inclusive	(staked)
No 18	K.K.	3637 to	*655	Inclusive	(staked)
No B	K.K.	3655 to	3662	Inclusive Inclusive	(staked)

TASHOTA DISTRICT

HOS	K.K.	3532	to 3534	Inclusive	(staked)
170 18	K.E.	3558	(staked))	
No's	K.K.	3636	(staked))	
No 's	K.K.	3654	(staked)	}	
No .	K.K.	3663	to 3671	Inclusive	(staked)

The Company thus holds 2 patented and 48 unpatented claims or a total area of approximately 2,000 acros. The claims surround Hendrickson Lake and lie 5

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miles south of the main line of the Canadian National
Railway. They may be reached by trail from Tashota, about
7 miles distant, or aeroplanes can land on Dyer Lake or
Retcalfe Lake west and north respectively of the claim
group. In times of high water landings may be made with
light loads on Bendrickson Lake.

On September 4 and 5, 1946, in company with Mr. Cyril Jerrom and Mr. Guy Lowe I visited the claim group. A report based on this visit was presented to the company in which a magnetic survey to be followed by seological capping and diamond drilling was recommended. In Sebruary and March, 1947 a magnetometer survey was made of part of the claim group by Variometer Surveys Limited and a report concerning this work was presented to the Company in May.

Since the results of the magnetic survey have a direct bearing on interpretation of the geology of the claim group, on the drilling plan that was adopted, and on recommendations for further work, I take the liberty of quoting the Summary and Recommendations from that report.

"SUMMARY AND RECOMMENDATIONS

The results obtained from the magnetometer survey of part of the Bendrickson Lake claim group of Pardners Sines Limited indicate:

1. That the granite exposed on the boundary between

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claims KK 3536 and KK 3645 occupies there an area about 1/2 mile wide and extends in a shoulder southwards to about the middle of boundary between claims KK 14 and KK 3540.

2. That the pyrrhotite some exposed near the middle of the east side of claim KK 15 extends intermittently westward to the western limits of the claim group, and east and north of east into claim KK 3646, thus wrapping around the granite shoulder.

5. That the pyrrhotite occurs in lenticular concentrations, some of which may be more than 1000 feet long and up to 100 feet wide.

4. That there is a more or less equidimensional magnetic body in claim KK 3647 that possibly should be investigated.

bearing where exposed in claim KK 15 it is recommended that this zone be further investi ated by diamond drilling. It is suggested that a least 2000 feet of drilling be done to investigate places of high pyrrhotite concentration as indicated above, and that the anomaly in claim KK 3648 be investigated by means of a short vertical hole.

It is further recommended that geological mapping of the whole claim group be carried out as rapidly as possible in order to aid in further interpretations of the magnetic data and to indicate other places worth investigation.

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Subsequent to this report 2147.5 feet of diamend drilling were done in six holes and the geology as exposed at the surface was mapped by Er. S. M. Roscoe and myself on a scale of 1 inch equals 500 feet. Copies of drill logs, cross sections of drill holes and a plan setting forth the areal (cology were prepared and submitted to the Company on July 21, 1947. Records of assays were forwarded to the Company by the assayer, J.W.B. Bell of Haileybury, Ontario. This report therefore, constitutes the final item covering the work to date.

General Statement

The area was examined by means of pace and compass traverses run north and south at intervals of 400 feet. The traverses were tied to the east-west base line out for magnetometer survey and to claim boundaries and posts on the northern and southern boundaries. Since the claims are unsurveyed accuracy of location decreases with distance both north and south of the base line and the positions of outcrops and the forms of claims as shown in the map of the claim group must be recognized as only first approximations.

Outcrops are common in the southwestern part of the claim group, south of Hondrickson Lake. A few large outcrops appear in the northern claims east of Hendrickson Lake and three or four tiny exposures were found near the

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Barn Lake in the scutheast corner of the claim group and the lake near the northeast corner is covered with wet muskeg, as is much of the country between the eastern boundary and Hendrickson Lake.

The flat surface of the muskeg is broken in the northern part of claim 3640 by a low hillook of sand and gravel, and a sand ridge trends east across and beyond the southern parts of claims 3651 and 3652.

The exposures in the western and northern parts of the area comprise rhyolite and rhyolite breecia and tuff, pillowed andesite and andesite breecia, fine to coarse grained gabbro, in part porphyritie, a large body of quarts porphyry that grades here and there into Granite, Seldspar porphyry, lamprophyre and diabase.

of a heavily mineralized pyrrhotite-bearing zone that has been traced from the west edge of the area eastwards across 5 claims and into the sixth, a quarts-bearing shear zone in the southeast corner of claim 5665 and a more or less equidimensional magnetic positive anomaly discovered in the southern part of claim 5640. Each rock type and each of these several features will be described in greater detail.

Rock Types

Massive and pillowed andesite flows and minor amounts of andesite breccia are exposed in the extreme southwestern part of the area in a series of sharp rock ridges

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that rise above the surrounding swamps. The rocks are typical greenstone flows, so common in many parts of the Precambrian Shield and need no special description. The length of the pillows and, it is believed, the flows strike a few degrees north of east, dip steeply south or are vertical, and face south. Pillows are best displayed in outcrops along or near the southern boundary of the claim (roup. North of these but in the southern tier of claims are large outcrops of massive fine grained greenstones that may be either andesite flows or fine grained facies of gabbro.

Empolite, rhyolite brecois and rhyolite tuffs occur in scattered outcrops that lie within a strip about 1/2 claim wide that extends from the west side of the claim group along the south side of Hendrickson Lake castwards into claim K. 14. Similar rhyolite tuffs were out in D.D.H. #4 near the middle of claim 5539. The massive rhyolite flows and rhyolite brecciss differ in no way from rhyolitic rocks common in volcanic assembla es in this part of the Canadian Shield. The tuff beds too are similar to those seen elsewhere. They range from light colored creamy thinly hedded rocks to dark gray or black rocks of slaty aspect. They are all weakly to strongly schistose with planes of schistosity nearly or quite parallel to bedding planes.

These rhyolitic rocks are of particular interest for they have acted as hosts for most of the heavy sulphide

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minerals. Indeed rhyolite and rhyolite breads not uncommonly serve as host rocks for sulphides, as for example at waite-Amulet, Quebec. Their occurrence here and the fact that they are hosts here as well may therefore be regarded as satisfactory evidence that they afforded a favorable trap for one deposits. Whether or not any commercial sulphides have been so trapped remain, of course, to be discovered.

Two varieties of gabbro occur in the area, one a massive coasse to fine grained rock of a type cosmon elsewhere in the Shield and the other an unusual perphyritic variety. Age relations between these two are not known.

that occupy much of the area between the andesitic lavas in the scuttwestern part of the claim group and the rhyolitic lavas south of Rendrickson Lake. The outcrops may form part of a single large intrusion that would thus underlie the southern parts of claims 3667, 3532, 3533, K. 15 and K. 14, and most of claims 3666, 3663, 3534 and 3543. The southern contact of this mass may be just north of a small outcrop in the southwest corner of 3663. There fine grained andesitic rook that forms the extreme southwestern part of the exposure is sheared along the northern edge of the exposure to chlorite-carbonate schist. Shear zones of this sort are a common development along contacts of bodies of massive gabbro. This one contains lenses of

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quartz and constitutes one of the showings to be described in greater detail in a later section of this report.

A body of quartz porphyry forms large outcrops northeast of Nendrickson Lake, north of the lake in the northeastern corner of the claim group, appears in a small outcrop on the south shore, east end of Hendrickson Lake and is seen in three small exposures near the common corner of claims 3545, 3646, 3640 and 3648. The rock weathers light grey to cream and is light greenish fresh. It is remarkably fine grained for a body of its size and consists generally of numerous phenocrysts of bluish quarts and a few of white feldspar set in an aphanitic pale green groundmass. The rock thus corresponds almost exactly to rhyolite, from which it can be distinguished only because of its uniform massive character over large areas. Assured classifications of small outcrops marginal to the main body can be made only after considerable experience with both the authentic flow rhyolites and the intrusive rook in this area. Here and there the fine grained intrusive grades into medium grained orystalline granite, for example in the central part of the large outcrop northeast of Hendrickson Lake, but such places are the exception.

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The outlines of the mass in claims south and east of Hendrickson Lake were determined by magnetic survey. (See Fig.2 Variameter Surveys Limited, March 1947)* The southernmost projection of the body lies in the northeastern quarter of claim KK. It and the northern half of Claim 3539. The southeastern margin trends, from claim 539, northeasterly towards the small unnamed lake in the northeastern corner of the claim group.

A group of small exposures of this rock discovered near the southeastern corner of claim 3545 (see above) may lie within the limits of the main mass, but the magnetic survey indicates that more probably they are part of a smaller body, elongate northeast across claim 3640, the southeast corner of claim 3545 and claim 3646. That such a body might extend southwest into and across claim 3541 is suggested by the appearance in this direction of magnetic "lows", a feature characteristic of this rock elsewhere in the area surveyed.

*Note: Due to a regrettable error several claim numbers and boundaries are shown incorrectly on this Figure. To be more nearly correct the following substitutions should be made thereon:

Claim No. Shown in Fig. 2	Correct Claim No.
364 5	757 5
3646	7515
3647	3646
3540	35 3 9
3648	3 6 40
3649	3648

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or less equidimensional in plan that appears in the southern part of claim 3640. This high would thus lie off the southeastern flank of the smaller intrusive body along the axis of maximum curvature of that body. The sweep of isomagnetic lines hereabouts indicates that the formations probably curve in rude conformity with the outlines of the intrusives. Therefore it is possible that the magnetic high marks an area of concentrated sulphide mineralization within such a bend in the formations.

Feldspar porphyry forms two narrow dykes cut in p.D.H. #6, one from 271.7 to 274.3 feet, the other from 312.0 to 313.8 feet. It consists of numerous phenocrysts of white feldspar to 1/8 inch long set in a grey fine grained matrix. The rock is impregnated with tiny grains of sulphides. The rock is not known to outcrop within the claim group.

Small dykes of lamprophyre were out in D.D.H.I (185.8 - 191.2 feet) and in Hole II (139.8 - 148 feet). The rock is typical biotite lamprophyre with flakes of biotite set in a dark fine grained groundmass. It is not known to be exposed hereabouts.

Diabase dykes strike northwest across a group of outcrops near the east end of Hendrickson Lake. (See detail of geology, 1" a 100 feet). Two or more dykes occur within a width of about 150 feet, the widest being 75 feet.

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They were traced about 700 feet along the strike. Also diabase was out in D.D.H. #3 from 74.9 to 77.5 feet.

in other parts of the Shield. It is massive, dark, medium crained and, in comparison with the older volcanic rocks, remarkably fresh. The significance of these diabase dykes insofar as deposits of base metals is concerned is not fully understood. However it has been noted by many people that where base metal deposits do occur there also diabase dykes are found. Examples of this situation are seen at Noranda, at waite Amulet, and at Normetal. Whether these are more coincidences or whether there is a genetic connection between the two is uncertain but it is a fact that the presence of diabase dykes in areas of heavy sulphide mineralization is regarded by any as indicative of possible occurrence of base metals.

Structure

Two persistent structural trends appear to be displayed in the area, one generally northeastward, the other nearly due east. The northeastward trend is marked by forms of the ridges seen in the southwestern part of the claim group, by strikes of flows obtained therein, and by local trends of sulphide zones obtained from correlations of data from drill holes with surface exposures. (See Gool. Map, July, 1 inch • 100 feet).

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The eastern trend is strongly depicted south of Hendrickson Lake by the magnetic survey as a zone of magnetic "highs" that can be traced for a mile with no difficulty from the west edge of the group to and across KK lip. East of KK lip the eastern trend is not apparent. Either the structure dies out, or it swings northeastwards to blend into the general trend.

separate and distinct structural elements. The northeast-ward trend is, so far as can be determined, the general one for the area. It marks, presumably the trends of folds hereabouts, of dykes or elongate rasses intruded more or less parallel to flows that make up the folds, and the trend of the southeastern margin of the main intrusive body. Some deviations from this trend around the nose of the main intrusive are to be expected as a result of post-intrusive movements. Thus the centle curves concave northwest depicted by isomagnetic lines across claims 3539 and 3640 probably represent such a local deviation.

The easterly trend marked by magnetic highs, themwelves simply a result of heavy pyrrhotite mineralisation
along the zone, is believed to mark a post-folding fault zone.
The pyrrhotite rich bodies within it trend northeast, as
noted above, and appear to have an en schelon arrangement
within the zone. The possibility of such arrangement is
indicated by the forms of the magnetic anomalies along the zone
and data from drilling lend strong support to this interpretation.

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arran ment may be advanced. The east striking fault outs obliquely across the northeast striking flows. Mineralising solutions following this fault may have been trapped in low pressure areas developed by early shearing or in breccia sones along contacts between flows. Alternatively the low pressure areas may have developed contemporaneously with and as a result of fault movements that formed the sone. The appearance elsewhere of shear zones that strike northeast, for example in the southeast corner of claim 3663 suggests that the first hypothesis may be the correct one, with the added possibility that opening of such low pressure areas along contacts may have been aided by later fault movements.

Pyrrhotite Zone

An hypothesis to explain structural control of the pyrrhotite wone is offered in the preceding section. The some is exposed at the surface in only a few places in claim KK 15. There it was opened, in previous operations by several rock trenches. This early work was described by P.E. Hopkins (Ontario Bureau of Bines, 1917, 26 Annual Report, Vol.26) who observed visible gold closely associated with sine-blende in quarts veins that are injected in the pyrrhotite some.

Present investigation of the sone was made by magnetic survey followed by diamond drilling. Brilling proved that pyrrhotite-bearing sones can be precisely depicted by magnetic

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survey, (See Gross-sections of drill holes 1 to 6) established the en schelon arrangement and showed that rhyolite and rhyolite pyroclastics form the principal hosts for sulphide mineralization. (See also drill logs and cross-sections.)

The sulphide sones, where drilled, carry disseminated to massive pyrrhotite, pyrite and a little chalcopyrite in sections that range from 13 to 95 feet core length. The widths of the principal sulphide sones intersected are summarized in the following table:

p.p.s.	Width Drilled	Probable true width
1	93 feet	70 feet
2	70 *	50 *
3	13 "	107 *
4	13.5 "	107 #
5	(15 * {40 *	12 "
<u>6</u>	- 34 **	

The sulphides are accompanied by numerous stringers and veins of quartz, some of which carry tournaline. Indeed the mineralized sections look most propitious for gold deposition but assay returns for that metal were uniformly discouraging. The best return obtained in 120 core camples was massive pyrite with quarts cut in P.P.H. #2, drilled northward along the boundary between claims 14 and 15 to cross the pyrrhotite some which care 0.04 os. gold per ton from 119.0 to 116.5 feet.

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The possibility that platinum or nickel might occur in consercial amounts was tested in only one sample. Massive pyrrhetite cut from 100.43 feet to 101.7 feet in D.D.H. #6 (drilled southwards near the boundary between claims 3668 and 3671) contained of platinum a trace, of nickel 0.01% per ton.

To sum up with respect to this zone, drilling so far done has failed to indicate any deposit of gold ore. However it must be noted that of 6 holes drilled four were grouped in a section 1300 feet long in claim KK 15. One out the some 1800 feet east and the other more than 2000 feet west of this group. All the holes were drilled to intersect the strongest positive anomalies. As a result long sections of the zone on this ground remain completely unexplored. That the heavy contentrations of pyrrhotite are of no commercial interest can be regarded as demonstrated. However there remains the possibility that commercial ore deposits may occur in sections of the zone characterized by a lesser quantity of pyrrhetite. sections that may, for example contain concentrations of chalcopyrite or perhaps of auriferous pyrite. It may also be recalled that Mopkins noted sone blende in this same sone. The conclusion may be reached, therefore that the commercial changes of the sulphide rone cannot be said to be eliminated until some further investigation is made of the wide gaps left when the strong positive anomalies were drilled. The fact that the zone is continuous for more than a mile across the claim group, that it has been the locus for heavy sulphide

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mineralization, and that chalcopyrite, gold-bearing pyrite and even a little zinc blende all support a belief that further investigation would not be altogether imprudent.

Magnetic Anomaly in Claim 3640

Attention was drawn in the Report of May 3, 1947 to a more or less equidimensional positive anomaly that appears in the southern half of claim 3640. As stated there, "The positive anomaly on the southern end of line 2200E has a shape that is reminiscent of anomalies obtained over sulphide bodies that are more or less equidimensional in plan. It might also be due, of course, to a small plug of basic rock. Its possibilities might be tested by a short vertical drill hole spotted on line 2200E some 500 feet north of the south boundary of claim RK 3640."

As noted, the discovery of a few small exposures of quartz perphyry northeast of this anomaly coupled with the magnetic data suggests that the anomaly in question may lie off the southeast flank of a small intrusive. Further it would lie approximately in the area of maximum curvature of flows sweeping about the intrusive, a favorable locality for one deposition. It is therefore recommended that the suggestion of the earlier report be followed out, and that the area of this anomaly be tested by at least one vertical drill hole.

Showing in Claim 3663

Carbonatised chloritic schist injected by quarts veins occurs along the north side of an outcrop of massive

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coarse grained andesite or fine grained gabbro in the southeast corner of claim 3663. The outerop lies about 450 feet southwest of the cabin in claim 3554. The showing has been opened by a series of trenches through thin drift over a length of some 120 feet. The shear some has an exposed width of about 15 feet. It strikes N 65° E and dips 65 to 70 degrees south. The sheared material consists for the most part of carbonatised chlorite schist with very sparsely distributed grains of pyrite. It is injected by a system of quarts voinlets, veins and blebs. Some of the quarts lenses are as much as 16 inches wide but none exposed are more than 10 feet long. The quartz is sugary and carries mainly along chloritic partings small scattered aggregates of pyrrhotite, pyrite and chalcopyrite. No assays were obtained of this material.

CONCLUSIONS:

Geological examination of the outcrops within the claim group, coupled with data from a magnetometer survey of part of the group and the results of same 2147.5 feet of diamond drilling have shown:

- 1. That an east-west sulphide-bearing some exists for more than a mile across the claim group.
- 2. That within this zone are sections arranged en echelon heavily mineralized with pyrrhotite, pyrite, a little chalcopyrite, but which carry negligible gold.

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in which no precise knowledge has been gained. Since both chalcopyrite and gold-bearing pyrite occur in small amounts with heavy pyrrhotite, since both these materials are non-magnetic, and since favorable rock types and structures are known to exist along the zone, there is a reasonable possibility that either copper or gold-bearing deposits occur somewhere in the zone.

4. A shear sone with quarts stringers occurs in the scutheast corner of claim 5665. This showing does not appear to be of importance.

5. A positive magnetic anomaly of medium intensity occurs in claim 3640. Geological interpretation of magnetic data hereabouts suggests that the location may be favorable to one deposition.

RI COMMEMDATIONS!

Following the conclusions stated above it is recommended that a minimum of 1000 feet of diamond drilling be done, to be distributed as follows:

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1. On line 3600%, collar at a point
200 feet south of the base line and
drill at - 40° in a direction \$ 20 E
to an inclined depth of 250 feet.

2. Set up on the boundary between claims
KK 14 and 3539 at a point 800 feet
south of the base line. Drill at - 40°
in a direction \$ 20 E to an inclined
depth of 450 feet.

3. In claim 3640 set up on line 2200K at a point 1000 feet south of the base line. Drill a vertical hole to a depth of 150 feet.

4. Set up on line 2200E at a point 1300 feet south of the base line. Drill a vertical hole to a depth of 150 feet.

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March, 1948

J. W. Ambrose, Ph.D. Consulting Geologist.

