DMA Form 1

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DMEA ~~DMA~~ Docket No. 2334

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Routing Slip
(ONE COPY TO USGS & ONE TO USBM)

To: CODE 700 Rm. 4640	Date 1-22-52	
(1) To: Mr. Geehan Rm. 3521	Date	
(2) To: Mr. Lemmon Rm. 4216 S.I.	Date	
(3) To: Mr. Mitlendorf Rm. 4624	Date	
To: Operating Com.	Date 2-18-52	
To:	Date	
To:	Date	
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CONTROLLED DOCUMENT

700

FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

Rutledge
Ellis
Geehan
Lemmon
Hayes
Johnson
Kjelmen

AIR MAIL

FEB 1 9 1952

Mr. Otto B. Brumsted, President
Inlet Land Company, Inc.
2966 North 49th Street
Milwaukee, Wisconsin

Re: Docket No. DMEA-2334 (Molybdenum)
Camp Five molybdenum prospect
Marinette County, Wisconsin

Dear Mr. Brumsted:

Your application for an exploration contract on your Camp Five molybdenum prospect in Sec. 18, T. 33 N., R. 20 E., Marinette County, Wisconsin, has been reviewed by this Agency.

In the light of all the data available, there is not sufficient premise of making a significant discovery of molybdenum ore which might be considered important to the National Defense. Under the circumstance, we regret to inform you that your application is denied.

The data furnished by you indicate the mineralized quartz and adjacent granite, which comprise approximately 1 percent of the outcrop, contains molybdenite in the order of 0.1 percent molybdenum. Economic production of molybdenum under these conditions is not feasible.

If future work at your property reveals evidence which could materially alter this opinion, please be assured we will be glad to consider a new application.

Sincerely yours,

C. O. Mittendorf (for) E.L. 2/19/52

Acting Administrator
Defense Minerals Exploration
Administration

APPROVED:

For Bureau of Mines

For Geological Survey

FARutledge/gla 2-12-52
cc to: Adm. Reading File
Docket
Messrs. Geehan, R.W. Rm 3521
Lemmon, D. M. Rm. 4216 GS
Ellis
Rutledge
Reg. V (2)

2/15/52 Jem

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

February 14, 1952

Memorandum

To: George Selfridge, D.M.E.A.

From: Robert W. Geehan

Subject: Exploration application $29,290 — DMEA-2334
Middle Inlet Land Company — Molybdenum
Camp Five Molybdenite prospect
Marinette County, Wisconsin

Conclusions: According to D. J. Fisher, U.S.G.S., examining geologist in 1943, mining on large or small scale is not feasible. He states that less than 0.1% molybdenum obtains under the most favorable conditions. He comments on development possibilities only, not on exploration.

According to E. J. Martin, Bureau of Mines examining engineer in 1952, "there is a "long shot' chance that a substantial tonnage of marginal ore could be developed." He claims the property was not properly sampled and the ore bodies not delineated. He does not appear to back up his statements with any data.

The applicant's geologist, R. G. Comer, feels there is a possibility of discovering "similar or stronger mineralizations" nearby, by means of diamond drilling. He admits that "the molybdenum content....at Camp Five is too low to warrant mining." If Mr. Comer has any sound reasons for believing that an adjacent area is more favorable they are not stated. Perhaps this information could be obtained, and the case could then be reconsidered.

Recommendation: Since there does not appear to be a valid reason for assuming that a commercial ore deposit might be discovered, it is recommended that this application be denied.

Robert W. Geehan

Robert W. Geehan

FILE COPY
Surname:

Katlin
Geehan
Rodinhart

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

February 14, 1952

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Recommendation: Since there does not appear to be a valid reason for assuming that a commercial ore deposit might be discovered, it is recommended that this application be denied.

RWGeehan:elk
cc: Mr. Geehan (1)
Ferrous M&A (1)
Mr. Katlin (1)
Files (1)
Mr. Selfridge (3)

Robert W. Geehan

2/18/52 ✓ gla

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

February 14, 1952

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Ferrous M&A (1)
Mr. Katlin (1)
Files (1)
Mr. Selfridge (1)

UNITED STATES
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BUREAU OF MINES
WASHINGTON 25, D. C.

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Recommendation: Since there does not appear to be a valid reason for assuming that a commercial ore deposit might be discovered, it is recommended that this application be denied.

Robert W. Geehan

RWGeehan:elk
cc: Mr. Geehan (1)
Ferrous Mid (1)
Mr. Katlin (1)
Files (1)
Mr. Selfridge (1)

1/25/52 gla

IN REPLY REFER TO:

R. 7670

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

January 25, 1952

Memorandum

To: George Selfridge, DMEA

From: D. M. Lemmon, U.S.G.S.

Subject: Exploration application $29,290 DMEA 2334 - Molybdenum
Middle Inlet Land Co.
2966 North 49th Street
Milwaukee 10, Wisconsin

Property: Camp Five molybdenite prospect
Sec. 18, T. 33 N., R. 20 E.
Marinette County, Wisconsin

This property was examined July 3-6, 1943 by D. Jerome Fisher for the Geological Survey. Mr. Fisher's report (unpublished) is extensively quoted in the application, except for the conclusions. A copy of this Survey report was submitted with the Field Team's memorandum of January 4, 1952.

Mr. Fisher's conclusion is stated as follows, on page 7 of his report:

> "It is concluded 1) that there is not enough molybdenite present to warrant large scale mining of the granite en masse, and 2) that the individual quartz veins or shoots and associated granite are not rich enough in molybdenite to warrant their removal by small scale mining methods."
>
> He also states (Abstract, page 1): "Even when in small operations only the more favorable veins and shoots are removed, it seems that the rock carries less than 0.1 percent molybdenum."

Recommendation:

It is recommended that this application be denied. No information has been presented to encourage the belief that a commercial ore deposit might be discovered.

The estimates of costs are high for the work proposed.

Dwight M. Lemmon

January 25, 1952

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DMLemmon:gt

D M Lemmon

Copies to: Director's reading file
Branch reading file

January 25, 1952

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DMLemmon:gt

Copies to: Director's reading file
Branch reading file

Don Lemmon

January 25, 1952

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DML

DMLemmon:gt
Copies to: Director's reading file
Branch reading file

EXPLORATION

Subject: DMEA-2334
Re: Exploration Loan
January 22, 1952

Mr. Otto B. Brumstead, President
Inlet Land Company, Inc.
2966 North 49th Street,
Milwaukee 10, Wisconsin

My dear Mr. Brumstead:

This will acknowledge receipt of your application dated November 10, 1951 for a loan under the Defense Production Act of 1950.

Your application was assigned Docket Number DMEA-2334 and referred to the Rare & Miscellaneous Metals Division.

Kindly refer to DMEA-2334 in any future correspondence relating to your application.

Sincerely yours,

ROBERT E. ADAMS

Robert E. Adams
Acting Administrative Officer

7862

OFFICE OF THE ADMINISTRATOR

DMEA-2334
1/28/52 gla

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
~~WASHINGTON 25, D. C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 21 1952

January 18, 1952

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region V

Subject: Exploration application and field report

Here are four copies of an application from the Inlet Land Co., Inc., 2966 North 49th St., Milwaukee 10, Wis., for exploration on a molybdenum deposit near Middle Inlet, Wis., together with the original and three copies of the field team's report on the property which recommends the project.

This deposit has been examined by the Bureau and the Survey on several occasions, and there were sufficient data in Bureau files to determine the feasibility of the application. A Bureau engineer had occasion recently to examine the same deposit for radioactive material, too.

A. B. Needham
Executive Officer
DMEA Field Team, Region V

Attachments 7

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 21 1952

UNITED STATES
DEPARTMENT OF THE INTERIOR

Oscar L. Chapman, Secretary

DEFENSE MINERALS EXPLORATION ADMINISTRATION

Reviewed by
DMEA OPERATING COMMITTEE
1-25-52
(date) 263

Report of Examination by Field Team
Region V

Middle Inlet Land Company
2966 North 49th Street
Milwaukee (10), Wis.

Project located near Middle Inlet, Wis.

COMMODITY: Molybdenum

Emmett J. Martin, Mining Engineer
Mining Division
U. S. Bureau of Mines

January 4, 1952

PERTINENCE OF THIS PROPOSAL TO COMMODITY PROGRAM

Molybdenum is a necessary component of materials and products entering into the manufacture or production of arms, munitions, and implements of war and is needed for other military and defense effort purposes. The Munitions Board has declared molybdenum critical and strategic, and every effort is being made to increase its production. Under Mineral Order 5, molybdenum is in the 50 percent Government participation bracket.

TECHNICAL FEASIBILITY

Technically, this project is feasible as there are a considerable number of exposures of molybdenite on this property; and although the most prominent ones are mainly replacement quartz veins, there is some dissemination in the granite. Past production amounts to approximately 6,000 pounds of molybdenite from several shallow pits. This project stands a long chance of opening up a substantial tonnage of molybdenum.

AVAILABILITY OF REQUIREMENTS

Deisel or gas power, water, and manpower are available. A combination shelter and shed would be required.

FINANCING

This venture of the Middle Inlet Land Co. is backed by substantial businessmen of Milwaukee and Wausau, Wis., particularly a Mr. Dale of Waukesha, Wis. They will be able to furnish their share of the cost of the project.

COMPETENCE OF APPLICANT

Mr. Brumstead has been a successful building contractor, presently retired.

R. G. Comer, geologist, who will outline the work, is recommended

by Dr. Ernest Bean, Wisconsin State Geologist, as being a competent and capable geologist.

Mr. Dale is a very capable administrator.

RECOMMENDATIONS

It is recommended that the applicant's request for Government assistance in this exploration for molybdenum be granted. It is also recommended that the results of phase one be closely scrutinized before phase two is initiated.

It is further recommended that any assistance on the basis of a uranium exploration deposit be denied, as the deposit is very weakly radioactive and there only sporadically.

SUMMARY AND CONCLUSIONS

This property has been examined for molybdenum by D. Jerome Fisher, U.S.G.S., and A. M. Cummings and D. H. Mullen, mining engineers, U.S.B.M.; and for uranium by E. J. Martin, mining engineer, U.S.B.M. All concur in the occurrence of molybdenite and that the grade is low, probably between 0.1 percent and 0.2 percent of an unknown tonnage, which is indicated to be too small for large-scale operations.

Since this property has not been properly sampled and the "ore" boundaries have not been delineated, there is a "long-shot" chance that a substantial tonnage of marginal ore could be developed here. If the tonnage were large enough for big-scale operations, a grade of only 0.3 percent molybdenite would be economical under proper conditions.

PROPERTY AND LOCATION

The Middle Inlet property is located about 5 miles northwest of Middle Inlet, Marinette County, Wis., on Highway X. (See Plate I of Fisher's report.)

This property consists of the following:

SW1/4 SE1/4, sec. 7, T. 33 N., R. 20 E.

S1/2 NW1/4, sec. 18, T. 33 N., R. 20 E.

NE1/4 NW1/4, sec. 18, T. 33 N., R. 20 E.

NW1/4 NE1/4, sec. 18, T. 33 N., R. 20 E.

SE1/4 NE1/4, sec. 13, T. 33 N., R. 19 E.

Incidentally, all maps submitted by the applicant are copies or have been taken from maps prepared for the report of D. Jerome Fisher. Geologic report No. 2, submitted by the applicant, has been taken verbatim from Fisher's report.

Attached is a copy of D. Jerome Fisher's U.S.G.S. report on molybdenite in northeastern Wisconsin. The Camp Five area referred to in this report is identical with the property of the Middle Inlet Land Co.

ECONOMICS

From Fisher's report it appears that some 25,486 cubic feet of rock was removed from the various excavations to produce approximately 3 tons of molybdenite concentrates. Depending on factors used, this could give a grade of 0.1 percent to 0.15 percent MoS_2 for the rock removed. In addition, there are 2 unknowns which would probably up-grade the ore. First, the mill recovery was probably not too good; secondly, the tonnage of the rock removed or excavated is not identical with the tonnage milled, as Mr. Fisher refers repeatedly to dump material containing MoS_2. These latter points are mentioned just to indicate that the deposit has not yet been properly sampled and analyzed. There is a "long-shot chance" that a marginal deposit of molybdenum exists here, provided that it were large enough for open pit type of mining or a caving or semi-caving method to be used.

With a 90 percent mill recovery, a grade of 0.3 percent molybdenite would be economical. This would permit a recovery of 5.4 pounds of MoS_2 at $0.60 per pound of MoS_2, or $3.24; 5,000,000 tons of such ore might be exploited for the following:

CAPITAL COST:

Mill	$1,000,000
Mine	750,000
Townsite	200,000
	$1,950,000

1,000 TONS PER DAY OPEN PIT MINING:

Mining		$0.75
Milling		.90
General		.35
	Direct	$2.00
Amortization		.40
Freight taxes, etc.		.50
		$2.90

Margin - $0.59 per ton ?? 0.34

This material is inserted merely to stress the point that a grade of 0.3 percent or better could be economical.

Report on
Molybdenite in Northeastern Wisconsin

by

D. Jerome Fisher

Abstract

Molybdenite is present in and near irregular quartz veins in albitized granite (Marinette Co.) and in pegmatite (Florence Co.) in extreme northeastern Wisconsin. Some 3,000 lbs. of molybdenum have been removed from the Camp Five property (Marinette Co.), and several little prospect pits expose small shows of molybdenite 27 miles further north at the Payant-Chrissman properties (Florence Co.).

The quartz veins on the Camp Five property while roughly vertical show pronounced pinch and swell structure with very indefinite walls that grade into albitized granite. They outcrop over less than one percent of the north flank of the hill on which all the deposits have been found. The available molybdenite is much too small in amount to warrant large scale mining of a big fraction of the rock. Even when in small operations only the more favorable veins and shoots are removed, it seems that the rock carries less than 0.1 percent molybdenum.

The pegmatites and associated quartz veins of the Payant-Chrissman area are sharp-walled sheets mostly only a foot or less in thickness, probably constituting not over 5 percent of the country rock through which they are widely disseminated. The country rock is a mica schist (certain phases are poorly gneissic) which locally contains up to 50 percent of its volume as feldspar. The molybdenite occurs sparingly as flakes up to 1 inch long; it is locally fairly common, especially in the quartz of a pegmatite. It is also found in narrow quartz veins of at least two ages. It is concluded that the price of molybdenite would have to be nearly equal to that of gold to warrant exploitation. Payant was led to think he might have a feldspar proposition, but nothing seen by the writer would remotely suggest this.

Introduction

Molybdenite occurs in northeastern Wisconsin in Marinette and the adjacent portion of Florence Counties. Early in 1940 three tons of molybdenite concentrates were shipped from theCamp Five property. This is in south central Marinette Co. 4 miles northwest of the hamlet of Middle Inlet and 26 miles northwest of the city of Marinette on Green Bay. The writer ably assisted by A. H. Chidester spent July 3, 5, and 6, 1943, mapping and examining this prospect.

On July 7, 1943, molybdenite shows were examined on the Payant and Chrisman properties in southeastern Florence County. These properties are 6 miles southwest of Niagara, Wisconsin, and 10 miles SSW of Iron Mountain, Michigan. They are 27 miles north of the Camp Five prospect.

U. S. Highway 141 by the C. M. & St. P. R.R. leads north from Middle Inlet through Niagara, Wis., to Iron Mountain, Mich. On this highway some 16 miles north of Middle Inlet and 21 miles south of Niagara is the town of Amberg. Mr. Elmer Grimmer (an attorney of Marinette) showed the writer samples of molybdenite-bearing granite much like that at Camp Five, which he stated came from the old water-filled quarry of the Pike River Granite Co. to the east of Amberg. State Geologist E. F. Bean reports molybdenite occurs in the Daniels quarry at Amberg.

J. A. Payant (an undertaker in Iron Mountain) reported that he understood that molybdenite was present on the Charles Bennett property 2 miles west of Niagara (SE 1/4, sec. 7, T. 38 N., R. 20 E.), but a hasty visit failed to confirm this. In any case Payant thinks the molybdenite-bearing rocks strike in a northeasterly direction from his property.

Camp Five Property

Introduction

The Camp Five Property (named from the old lumber company that dammed the stream here) is in the north-central part of sec. 18, T. 31 N., R. 20 E. The index map on Plate 1 shows its location with respect to Middle Inlet and the various roads. The 10-acre square indicated by short dashed lines on the detailed map of Plate I was located approximately by careful pacing from the T-road at the middle of the east side of sec. 18. The land is owned by W. P. McCaskey and the Tobin heirs.

Mr. Elmer Grimmer stated that the property was originally opened by a group organized by an Appleton, Wisconsin, man that worked the western portion in 1937-1938. In 1939 a group from Green Bay, Wisconsin and elsewhere organized the Wisconsin Molybdenite Corporation and during 1939-1940 the mine was actively worked for about eight months. This company raised some $40,000, of which $25,000 was spent for equipment. These operations recovered 68 bags of molybdenite concentrates which weighed 6,094 lbs. dry and contained 47.82 percent of molybdenum and 0.04 percent of copper, according to assay no. 499222 of Ledoux and Co., Feb. 21, 1940. Since then most of the machinery has been sold and the roof of the mill has fallen in. In August, 1942, W. S. Burbank (U.S. Geol. Survey) and A. H. Cummings (U.S. Bur. of Mines) visited the prospect and estimated that 25,486 cubic feet of rock were removed in the various pits, cuts, and shafts on the property.

In 1941 it was reported[1] that Professor N. W. Meloche of the Dept.

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[1] Works, Mrs. L. P., Rhenium-bearing molybdenite in northern Wisconsin. Rocks and Minerals, Vol. 16, No. 3, p. 93, Mar. 1941.

---

of Chemistry of the Univ. of Wisconsin had found these molybdenite concentrates contained 50 parts per million of rhenium. At the April, 1943, meeting of the American Chemical Society at Detroit, it was announced by Melaven and Bacon[2] that potassium perrhenate is present in the flue dusts

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[2] Jour. Chem. Educ., 20 (5), 210, May 1943.

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from the roasting of molybdenite; the dusts contain in excess of one percent Re.

Geologic Setting

The Camp Five property (as well as the Payant-Chrissman holdings) is in an area of pre-Cambrian granite according to the map in U.S. Geol. Survey Prof. Paper 184, though this is definitely indicated as Killarney near Niagara. Actually the molybdenite deposits are in quite different rocks at the two localities.

At Camp Five the deposits are found in the north (steep slope) flank of an east-west trending ridge that rises nearly 100 feet above Middle Inlet and the tributary Plumadore Creek (see Plate I); farther north there are no outcrops for some distance--simply a sandy plain. The south slope of the hill is well mantled with a heavy cover of vegetation; no exploration was made south of the old road indicated in this area on Plate I. The west end of the property is marked by a pronounced north-trending dry valley underlain by basalt from which fresh samples are readily collected in the prospect pits. West of this valley, granite is found for some distance but no detailed study was made. What is likely a branch of this main basalt dike strikes NNE, just missing the west edge of Pit 2. About 700 feet to the southeast of the boundary shown near the mill on Plate I, there is another granite outcrop; this is at the east end of the fenced field, part of which appears along the lower right edge of the detailed map on Plate I.

At Camp Five the country rock in which the molybdenite occurs is a medium coarse-grained pinkish- to brownish-red granitic rock. It was assumed to be a true granite until a thin section cut from a molybdenite-bearing sample, collected from the loose pieces lying on the granite just east of Pit 1, showed it to consist essentially of albite and quartz, with a variable portion of the albite replaced by or altered to chlorite, and a minor amount of muscovite. In another sample of rock free from molybdenite (40 feet south of Pit 4, see Plate I) more than half of the feldspar was relatively fresh orthoclase, and there was an increased percentage of muscovite. This latter rock might be called a granodiorite, or else a somewhat albitized granite. A sample taken from the Middle Inlet quarry (1.8 miles SSE of the Camp Five property, see Index Map on Plate I) appears from inspection to be a medium coarse grained biotite granite.

Molybdenite Deposits

The molybdenite is found in quartz veins or disseminated in the granite. Some quartz veins are narrow (1/4 inch or so) sharp-walled fissure fillings, either roughly parallel to the sheeting (dips 20-25° to the south), or nearly vertical. These in general do not carry molybdenite in significant quantities. This mineral is mainly found in or near replacement quartz veins with pronounced pinch-and-swell structure (from 0 to 20 inches thick) and very indefinite walls. They may have formed by enlargement of some of the fracture-filling type of quartz vein by later deposition of quartz which replaced the granite. In places they seem to be

simply irregular masses or blowouts of quartz, but the shaft-like openings of some of the pits on the property indicate that at least in part they may have been more or less vertical shoots. The most pronounced veins are the vertical ones indicated on Plate I joining Pits 4 and 5; also at the southeast edge of Pit 2. Pit 3 is on a minor vein of similar strike (S.85°W.) along the north face of a 15-foot cliff. The trend of these veins is roughly the same as the strike of the sheeting of the granite.

Ten pits or trenches have been indicated by numbers on the detailed map of Plate I. These numbers have no sequential significance; it was not possible to ascertain enough of the history of the deposit to find in what order the pits were developed.

The remainder of this section is devoted to a description of the various pits.

Pit 8. This may have been the first opening made on the property. Only a little material was removed, perhaps 100 square feet for a depth of 3 or 4 feet, and this was mainly obtained by blasting from the steep side of the hill. Most interesting is the presence of basalt stringers up to a foot thick cutting the granite here. Only a little molybdenite was seen here; this was in a small quartz replacement mass in the granite, a foot or so from the basalt.

Pit 7. This consists of a trench which was run south into the hillside so that a 15-foot-high face was worked at the south end. This may have followed some sort of a vein, but if so it was short, as it does not show along the back (south) face at the present time. The pond is some 10 feet deep, indicating that a shaft-like opening was followed down at the back of the trench; this may have been along a molybdenite-bearing quartz shoot. All outcrops on the sides of this opening as well as dump samples show granite; some of the latter contain quartz-enriched portions carrying flakes of molybdenite. Presumably the better pieces from this as well as all other dumps and their openings have been removed. Rock masses of this dump do not show much quartz; there is some vuggy limonitized pyrite; also some molybdenite was seen along slippage planes in the granite.

Pit 9. This pit seems to have started as a trench heading south along the basalt-granite contact. This encountered a fracture-surface in the granite dipping steeply (85°) to the north which was covered with very fine granular molybdenite varying from nothing to over 1/2-inch in thickness. This was followed to the east by the trench indicated on Plate I; along the north side of this cut near the west end there is an area of the granite about 5 by 1 feet in which flakes of molybdenite are readily found; these perhaps constitute 1 to 2 percent of this area. Some of the blocks of granite from the east end of this trench show fracture surfaces coated with irregular thick films of purple fluorite.

Pit 1. Here the basalt-granite contact is also well exposed; it is vertical or dips very steeply to the west. This pit is a shaft-like opening which has an 18-foot face on its east side. A number of very irregular quartz masses of the "blowout" type appear in the pit walls; the largest one is 3 by 1 feet. Only one of these (10 feet up on the east side) shows molybdenite (two small flakes) at the present time. One small flake of this mineral was also seen in the quartz-enriched granite on the west side of the pit 3 feet above the base and 4 inches from the basalt. Loose samples lying on the granite on the east side of this pit (and probably from this pit) are excellent to show molybdenite in quartz-enriched granite which has suffered pronounced chloritization of the plagioclase feldspar.

Pit 2. This pit consists of a crudely-rectangular opening now filled with water at least 20 feet deep whose surface is at an altitude of 779 feet. Along the south and east sides the exposed face is 12 to 15 feet high. This drops to 4 to 6 feet around the northeast and north portions. The west end shows 3 to 4 feet of rubble and cannot be far from the basalt dike. Most interesting is the quartz vein indicated on Plate I along the southeast edge; here is the best show of molybdenite now visible at this property. This vein is of the very irregular pinch-and-swell structure replacement type, which before mining started apparently barely reached the surface at a low point in the latter. At the southeast corner of the pond there is exposed along a nearly-vertical face of granite striking N.55°E. an irregular mass of quartz 12 feet wide by 8 feet high with a vein-like offshoot about one foot wide extending downward nearly to the surface of the pond. This latter downshoot and the lower portion of the quartz to the northeast contain platy masses of molybdenite with the plates approximately vertical. Thus for a curved length of about 4 feet and a width of 6 to 8 inches, about one-quarter of the surface area is molybdenite. Most of the quartz is barren, however, and no clues to explain the localization of the molybdenite near the base of the quartz were observed.

Farther west near the middle of the south wall of Pit 2 there is another molybdenite-rich area in quartz. This is much like that described above; it is on the upper portion of the pit walls and is inaccessible, though easily observed from a distance of 10 to 12 feet. It is not certain that these two molybdenite occurrences are in the same quartz vein, as the latter is very irregular. However, the vein shown on the map, Plate I, is drawn to include both, though they are not actually connected at the exposed level.

The molybdenite-bearing quartz has a most irregular, roughly vein-like shape which averages perhaps a foot in thickness, but shows pronounced pinch-and-swell structure. The contact with the granite is both indefinite and irregular; crude apophyses of the quartz cut out into the granite. Samples can be collected varying in all degree from pure quartz, to quartz with occasional reddish feldspars, through

masses of granite obviously enriched by quartz, to the normal granite. Field relations here seem definitely to show that the molybdenite-bearing quartz, at least in considerable part, has replaced the granite.

Pit 3. At this position only a small amount of rock has been removed from the natural face of the cliff; perhaps a vertical height of 6 to 8 feet is involved; a narrow and shallow trench was cut to allow drainage. A 4 by 6-foot area of barren quartz is exposed along the east side of the cut. Apparently this hole was made following down this quartz lead, but results did not warrant much work. At one place a mass of quartz extending back (south) about a foot into the cliff was knocked out. The trend of this vein-like mass of quartz is essentially that of the cliff face to the west; indeed this is locally coated with remnants of quartz.

Pits 4 and 5. Apparently these were made by the most recent important work done on the Camp Five property. They are along an irregular nearly-vertical quartz vein showing pronounced pinch-and-swell structure with here and there irregular apophses projecting sideways (especially south) into the granite. Pit 4 has a worked face about 12 feet high, with only a foot of water at the bottom. Pit 5 has a 4-foot face now exposed, but the pond is 11 feet deep. Little shows here except for some barren quartz on the south face. The shaft-like opening presumably followed along a near-vertical shoot. The quartz vein can be traced from Pit 4 to Pit 5, but it is so barren that it was excavated to only a shallow depth, and now stands as an inverted saddle between them. It is definitely offset to the south from the vein in Pit 3, as it shows up well in the cliff face southeast of Pit 3 and west of Pit 4. It here contains a few flakes of molybdenite, but these constitute but a fraction of 1 percent of the actual area of the vein outcrop. The granitic wall rock on the east side of Pit 4 has a molybdenite-bearing streak about 2 feet long and up to 2 inches in width; it is from 0 to 2 inches distant from the quartz vein. On the whole the molybdenite in the area of Pits 3, 4, and 5 is less obvious than that in the area of Pits 1, 2, and 9.

Pit 6. This trench which is about 18 feet deep extends some 50 feet in a southwesterly direction into the cliff face. The southeast edge is marked by fissure quartz up to 4 inches thick standing nearly vertical and striking N. 55° E. The opposite edge of the pit is similarly fracture-controlled, but its strike is about N. 20° E. This quartz is apparently fine-grained and barren, as is also the quartz which is roughly parallel to the sheeting (dip 20 to 25° to the south); this latter quartz, however, is only about 1/2 an inch thick. Blocks in the pit show molybdenite present in irregular coarsely-crystalline quartz masses; these are not over 2 feet across; they are of the blow-out type, with very irregular boundaries that grade into granite in the same manner as is described above for Pit 2. Samples from the dump of Pit 6, which dump is used to support the east-west road at the north

end of the trench, show molybdenite in quartz, as well as interrupted thick films of purple fluorite, on joint surfaces in the granite. Associated with the latter are what was taken to be small masses of arsenopyrite, locally altered to limonite. The fluorite-arsenopyrite mineralization seems not to be associated directly with the molybdenite. Occurring with the latter at this pit and elsewhere are small amounts of yellow molybdic ocher, which consists of molybdenum hydroxide carrying ferric iron.

Origin

There are apparently two stages of quartz formation. One stage has resulted in irregular replacement veins and shoots of rather coarse grained quartz. The molybdenite (and small amounts of molybdite) are definitely associated with this quartz, though also present in the neighboring granite. This quartz while in part possibly in vertical shoots, is very definitely in near-vertical vein-like masses trending slightly north of east. It is also possible, on the basis of present tentative evidence, to consider that albitization of the granite occurred locally in connection with the introduction of this quartz. Were this confirmed, it might well be of considerable aid in further prospecting.

Fine-grained quartz occurring as fissure fillings and in thin layers roughly parallel to the sheeting (dips 20 to 25° to the south) is also present. This quartz seems to be barren in general, and is quite possibly younger than the coarse grained vein quartz, though unfortunately field evidence to settle this point was not observed. Since purple fluorite occurs sparingly on such fracture surfaces, it may be of the same age. With it is associated an iron mineral, possibly ersenopyrite.

A piece of basalt found near Pit 1 contain a tiny crystal of chalcopyrite; this may be of interest in connection with the fact that the analysis of the molybdenite concentrates shipped from this property early in 1940 showed them to contain 0.04 percent copper.

Apparently the group that first worked the Camp Five property considered that the molybdenite bore some genetic relationship to the basalt. Opening of Pits 1, 8, 9, and 10 all support this contention. However, it seems clear from the other openings, especially those of Pits 4 and 5, that this is probably not the case. Nowhere was molybdenite observed in the basalt or in significant close association. Nowhere were molybdenite-quartz veins observed cutting the basalt. It is therefore tentatively concluded that the molybdenite antidated the basalt, and therefore that the latter is of no significance in connection with the actual locale of deposition of the molybdenite.

Economic Possibilities

As already noted, Burbank and Cummings estimated that 25,486 cubic feet of rock have been removed from the various pits, etc., on the Camp Five property. This resulted in 6,094 lbs. of 47.82 percent molybdenum concentrates early in 1940, plus an unknown but certainly much smaller amount obtained in 1937-38. If these concentrates were sold at 45 cents a pound, a favorable price was obtained. In short, a $40,000 investment yielded less than $3,000 in ore (not allowing for transportation) plus an undisclosed sum for the sale of second-hand machinery.

With the exception of some of the work done by the first operators to explore the basalt contacts, it would seem that prospecting and mining proceeded at the positions of the best molybdenite shows. It thus follows that molybdenite is not present on this property in anything like sufficient quantity to warrant further developments, even under present emergency conditions.

The molybdenite is definitely in or close to irregular quartz veins that may be locally somewhat pipe-like. The quantity of such exposed quartz is small; at best it is shown to be something under one percent of the north flank of the hill. It here occurs in a series of sub-parallel vertical veins that extend only short distances. No good estimate of the percentage of molybdenum in the quartz and nearby granite can be given; it would be very small, probably less than 0.1 percent, as is indicated from the production figures cited above.

It is thus concluded that 1) there is not enough molybdenite present to warrant large scale mining of the granite *en masse*, and 2) that the individual quartz veins or shoots and associated granite are not rich enough in molybdenite to warrant their removal by small scale mining methods.

Dmea - 2334

Reviewed by
DMEA OPERATING COMMITTEE
1-25-52 TP
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR

Oscar L. Chapman, Secretary

DEFENSE MINERALS EXPLORATION ADMINISTRATION

Report of Examination by Field Team
Region V

Middle Inlet Land Company
2966 North 49th Street
Milwaukee (10), Wis.

Project located near Middle Inlet, Wis.

COMMODITY: Molybdenum

Emmett J. Martin, Mining Engineer
Mining Division
U. S. Bureau of Mines

January 4, 1952

PERTINENCE OF THIS PROPOSAL TO COMMODITY PROGRAM

Molybdenum is a necessary component of materials and products entering into the manufacture or production of arms, munitions, and implements of war and is needed for other military and defense effort purposes. The Munitions Board has declared molybdenum critical and strategic, and every effort is being made to increase its production. Under Mineral Order 5, molybdenum is in the 50 percent Government participation bracket.

TECHNICAL FEASIBILITY

Technically, this project is feasible as there are a considerable number of exposures of molybdenite on this property; and although the most prominent ones are mainly replacement quartz veins, there is some dissemination in the granite. Past production amounts to approximately 6,000 pounds of molybdenite from several shallow pits. This project stands a long chance of opening up a substantial tonnage of molybdenum.

AVAILABILITY OF REQUIREMENTS

Deisel or gas power, water, and manpower are available. A combination shelter and shed would be required.

FINANCING

This venture of the Middle Inlet Land Co. is backed by substantial businessmen of Milwaukee and Wausau, Wis., particularly a Mr. Dale of Waukesha, Wis. They will be able to furnish their share of the cost of the project.

COMPETENCE OF APPLICANT

Mr. Brumstead has been a successful building contractor, presently retired.

R. G. Comer, geologist, who will outline the work, is recommended

by Dr. Ernest Bean, Wisconsin State Geologist, as being a competent and capable geologist.

Mr. Dale is a very capable administrator.

RECOMMENDATIONS

It is recommended that the applicant's request for Government assistance in this exploration for molybdenum be granted. It is also recommended that the results of phase one be closely scrutinized before phase two is initiated.

It is further recommended that any assistance on the basis of a uranium exploration deposit be denied, as the deposit is very weakly radioactive and there only sporadically.

SUMMARY AND CONCLUSIONS

This property has been examined for molybdenum by D. Jerome Fisher, U.S.G.S., and A. M. Cummings and D. H. Mullen, mining engineers, U.S.B.M.; and for uranium by E. J. Martin, mining engineer, U.S.B.M. All concur in the occurrence of molybdenite and that the grade is low, probably between 0.1 percent and 0.2 percent of an unknown tonnage, which is indicated to be too small for large-scale operations.

Since this property has not been properly sampled and the "ore" boundaries have not been delineated, there is a "long-shot" chance that a substantial tonnage of marginal ore could be developed here. If the tonnage were large enough for big-scale operations, a grade of only 0.3 percent molybdenite would be economical under proper conditions.

PROPERTY AND LOCATION

The Middle Inlet property is located about 5 miles northwest of Middle Inlet, Marinette County, Wis., on Highway X. (See Plate I of Fisher's report.)

This property consists of the following:

SW1/4 SW1/4, sec. 7, T. 33 N., R. 20 E.

S1/2 NW1/4, sec. 18, T. 33 N., R. 20 E.

NE1/4 NW1/4, sec. 18, T. 33 N., R. 20 E.

NW1/4 NE1/4, sec. 18, T. 33 N., R. 20 E.

SE1/4 NE1/4, sec. 13, T. 33 N., R. 19 E.

Incidentally, all maps submitted by the applicant are copies or have been taken from maps prepared for the report of D. Jerome Fisher. Geologic report No. 2, submitted by the applicant, has been taken verbatim from Fisher's report.

Attached is a copy of D. Jerome Fisher's U.S.G.S. report on molybdenite in northeastern Wisconsin. The Camp Five area referred to in this report is identical with the property of the Middle Inlet Land Co.

ECONOMICS

From Fisher's report it appears that some 25,486 cubic feet of rock was removed from the various excavations to produce approximately 3 tons of molybdenite concentrates. Depending on factors used, this could give a grade of 0.1 percent to 0.15 percent MoS_2 for the rock removed. In addition, there are 2 unknowns which would probably up-grade the ore. First, the mill recovery was probably not too good; secondly, the tonnage of the rock removed or excavated is not identical with the tonnage milled, as Mr. Fisher refers repeatedly to dump material containing MoS_2. These latter points are mentioned just to indicate that the deposit has not yet been properly sampled and analyzed. There is a "long-shot chance" that a marginal deposit of molybdenum exists here, provided that it were large enough for open pit type of mining or a caving or semi-caving method to be used.

With a 90 percent mill recovery, a grade of 0.3 percent molybdenite would be economical. This would permit a recovery of 5.4 pounds of MoS_2 at $0.60 per pound of MoS_2, or $3.24; 5,000,000 tons of such ore might be exploited for the following:

CAPITAL COST:

Mill	$1,000,000
Mine	750,000
Townsite	200,000
	$1,950,000

1,000 TONS PER DAY OPEN PIT MINING:

Mining		$0.75
Milling		.90
General		.35
	Direct	$2.00
Amortization		.40
Freight taxes, etc.		.50
		$2.90

Margin - $0.50 per ton

This material is inserted merely to stress the point that a grade of 0.3 percent or better could be economical.

Report on
Molybdenite in Northeastern Wisconsin

by

D. Jerome Fisher

Abstract

Molybdenite is present in and near irregular quartz veins in albitized granite (Marinette Co.) and in pegmatite (Florence Co.) in extreme northeastern Wisconsin. Some 3,000 lbs. of molybdenum have been removed from the Camp Five property (Marinette Co.), and several little prospect pits expose small shows of molybdenite 27 miles further north at the Payant-Chrissman properties (Florence Co.).

The quartz veins on the Camp Five property while roughly vertical show pronounced pinch and swell structure with very indefinite walls that grade into albitized granite. They outcrop over less than one percent of the north flank of the hill on which all the deposits have been found. The available molybdenite is much too small in amount to warrant large scale mining of a big fraction of the rock. Even when in small operations only the more favorable veins and shoots are removed, it seems that the rock carries less than 0.1 percent molybdenum.

The pegmatites and associated quartz veins of the Payant-Chrissman area are sharp-walled sheets mostly only a foot or less in thickness, probably constituting not over 5 percent of the country rock through which they are widely disseminated. The country rock is a mica schist (certain phases are poorly gneissic) which locally contains up to 50 percent of its volume as feldspar. The molybdenite occurs sparingly as flakes up to 1 inch long; it is locally fairly common, especially in the quartz of a pegmatite. It is also found in narrow quartz veins of at least two ages. It is concluded that the price of molybdenite would have to be nearly equal to that of gold to warrant exploitation. Payant was led to think he might have a feldspar proposition, but nothing seen by the writer would remotely suggest this.

Introduction

Molybdenite occurs in northeastern Wisconsin in Marinette and the adjacent portion of Florence Counties. Early in 1940 three tons of molybdenite concentrates were shipped from theCamp Five property. This is in south central Marinette Co. 4 miles northwest of the hamlet of Middle Inlet and 26 miles northwest of the city of Marinette on Green Bay. The writer ably assisted by A. H. Chidester spent July 3, 5, and 6, 1943, mapping and examining this prospect.

On July 7, 1943, molybdenite shows were examined on the Payant and Chrisman properties in southeastern Florence County. These properties are 6 miles southwest of Niagara, Wisconsin, and 10 miles SSW of Iron Mountain, Michigan. They are 27 miles north of the Camp Five prospect.

U. S. Highway 141 by the C. M. & St. P. R.R. leads north from Middle Inlet through Niagara, Wis., to Iron Mountain, Mich. On this highway some 16 miles north of Middle Inlet and 21 miles south of Niagara is the town of Amberg. Mr. Elmer Grimmer (an attorney of Marinette) showed the writer samples of molybdenite-bearing granite much like that at Camp Five, which he stated came from the old water-filled quarry of the Pike River Granite Co. to the east of Amberg. State Geologist E. F. Bean reports molybdenite occurs in the Daniels quarry at Amberg.

J. A. Payant (an undertaker in Iron Mountain) reported that he understood that molybdenite was present on the Charles Bennett property 2 miles west of Niagara (SE 1/4, sec. 7, T. 38 N., R. 20 E.), but a hasty visit failed to confirm this. In any case Payant thinks the molybdenite-bearing rocks strike in a northeasterly direction from his property.

Camp Five Property

Introduction

The Camp Five Property (named from the old lumber company that dammed the stream here) is in the north-central part of sec. 18, T. 31 N., R. 20 E. The index map on Plate 1 shows its location with respect to Middle Inlet and the various roads. The 10-acre square indicated by short dashed lines on the detailed map of Plate I was located approximately by careful pacing from the T-road at the middle of the east side of sec. 18. The land is owned by W. P. McCaskey and the Tobin heirs.

Mr. Elmer Grimmer stated that the property was originally opened by a group organized by an Appleton, Wisconsin, man that worked the western portion in 1937-1938. In 1939 a group from Green Bay, Wisconsin and elsewhere organized the Wisconsin Molybdenite Corporation and during 1939-1940 the mine was actively worked for about eight months. This company raised some $40,000, of which $25,000 was spent for equipment. These operations recovered 68 bags of molybdenite concentrates which weighed 6,094 lbs. dry and contained 47.82 percent of molybdenum and 0.04 percent of copper, according to assay no. 499222 of Ledoux and Co., Feb. 21, 1940. Since then most of the machinery has been sold and the roof of the mill has fallen in. In August, 1942, W. S. Burbank (U.S. Geol. Survey) and A. H. Cummings (U.S. Bur. of Mines) visited the prospect and estimated that 25,486 cubic feet of rock were removed in the various pits, cuts, and shafts on the property.

In 1941 it was reported[1] that Professor N. W. Meloche of the Dept.

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[1] Works, Mrs. L. P., Rhenium-bearing molybdenite in northern Wisconsin. Rocks and Minerals, Vol. 16, No. 3, p. 93, Mar. 1941.

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of Chemistry of the Univ. of Wisconsin had found these molybdenite concentrates contained 50 parts per million of rhenium. At the April, 1943, meeting of the American Chemical Society at Detroit, it was announced by Malaven and Bacon[2] that potassium perrhenate is present in the flue dusts

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[2] Jour. Chem. Educ., 20 (5), 210, May 1943.

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from the roasting of molybdenite; the dusts contain in excess of one percent Re.

Geologic Setting

The Camp Five property (as well as the Payant-Chrissman holdings) is in an area of pre-Cambrian granite according to the map in U.S. Geol. Survey Prof. Paper 184, though this is definitely indicated as Killarney near Niagara. Actually the molybdenite deposits are in quite different rocks at the two localities.

At Camp Five the deposits are found in the north (steep slope) flank of an east-west trending ridge that rises nearly 100 feet above Middle Inlet and the tributary Plumadore Creek (see Plate I); farther north there are no outcrops for some distance--simply a sandy plain. The south slope of the hill is well mantled with a heavy cover of vegetation; no exploration was made south of the old road indicated in this area on Plate I. The west end of the property is marked by a pronounced north-trending dry valley underlain by basalt from which fresh samples are readily collected in the prospect pits. West of this valley, granite is found for some distance but no detailed study was made. What is likely a branch of this main basalt dike strikes NNE, just missing the west edge of Pit 2. About 700 feet to the southeast of the boundary shown near the mill on Plate I, there is another granite outcrop; this is at the east end of the fenced field, part of which appears along the lower right edge of the detailed map on Plate I.

At Camp Five the country rock in which the molybdenite occurs is a medium coarse-grained pinkish- to brownish-red granitic rock. It was assumed to be a true granite until a thin section cut from a molybdenite-bearing sample, collected from the loose pieces lying on the granite just east of Pit 1, showed it to consist essentially of albite and quartz, with a variable portion of the albite replaced by or altered to chlorite, and a minor amount of muscovite. In another sample of rock free from molybdenite (40 feet south of Pit 4, see Plate I) more than half of the feldspar was relatively fresh orthoclase, and there was an increased percentage of muscovite. This latter rock might be called a granodiorite, or else a somewhat albitized granite. A sample taken from the Middle Inlet quarry (1.8 miles SSE of the Camp Five property, see Index Map on Plate I) appears from inspection to be a medium coarse grained biotite granite.

Molybdenite Deposits

The molybdenite is found in quartz veins or disseminated in the granite. Some quartz veins are narrow (1/4 inch or so) sharp-walled fissure fillings, either roughly parallel to the sheeting (dips 20-25° to the south), or nearly vertical. These in general do not carry molybdenite in significant quantities. This mineral is mainly found in or near replacement quartz veins with pronounced pinch-and-swell structure (from 0 to 20 inches thick) and very indefinite walls. They may have formed by enlargement of some of the fracture-filling type of quartz vein by later deposition of quartz which replaced the granite. In places they seem to be

simply irregular masses or blowouts of quartz, but the shaft-like openings of some of the pits on the property indicate that at least in part they may have been more or less vertical shoots. The most pronounced veins are the vertical ones indicated on Plate I joining Pits 4 and 5; also at the southeast edge of Pit 2. Pit 3 is on a minor vein of similar strike (S.85°W.) along the north face of a 15-foot cliff. The trend of these veins is roughly the same as the strike of the sheeting of the granite.

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The remainder of this section is devoted to a description of the various pits.

Pit 8. This may have been the first opening made on the property. Only a little material was removed, perhaps 100 square feet for a depth of 3 or 4 feet, and this was mainly obtained by blasting from the steep side of the hill. Most interesting is the presence of basalt stringers up to a foot thick cutting the granite here. Only a little molybdenite was seen here; this was in a small quartz replacement mass in the granite, a foot or so from the basalt.

Pit 7. This consists of a trench which was run south into the hillside so that a 15-foot-high face was worked at the south end. This may have followed some sort of a vein, but if so it was short, as it does not show along the back (south) face at the present time. The pond is some 10 feet deep, indicating that a shaft-like opening was followed down at the back of the trench; this may have been along a molybdenite-bearing quartz shoot. All outcrops on the sides of this opening as well as dump samples show granite; some of the latter contain quartz-enriched portions carrying flakes of molybdenite. Presumably the better pieces from this as well as all other dumps and their openings have been removed. Rock masses of this dump do not show much quartz; there is some vuggy limonitized pyrite; also some molybdenite was seen along slippage planes in the granite.

Pit 9. This pit seems to have started as a trench heading south along the basalt-granite contact. This encountered a fracture-surface in the granite dipping steeply (85°) to the north which was covered with very fine granular molybdenite varying from nothing to over 1/2-inch in thickness. This was followed to the east by the trench indicated on Plate I; along the north side of this cut near the west end there is an area of the granite about 5 by 1 feet in which flakes of molybdenite are readily found; these perhaps constitute 1 to 2 percent of this area. Some of the blocks of granite from the east end of this trench show fracture surfaces coated with irregular thick films of purple fluorite.

Pit 1. Here the basalt-granite contact is also well exposed; it is vertical or dips very steeply to the west. This pit is a shaft-like opening which has an 18-foot face on its east side. A number of very irregular quartz masses of the "blowout" type appear in the pit walls; the largest one is 3 by 1 feet. Only one of these (10 feet up on the east side) shows molybdenite (two small flakes) at the present time. One small flake of this mineral was also seen in the quartz-enriched granite on the west side of the pit 3 feet above the base and 4 inches from the basalt. Loose samples lying on the granite on the east side of this pit (and probably from this pit) are excellent to show molybdenite in quartz-enriched granite which has suffered pronounced chloritization of the plagioclase feldspar.

Pit 2. This pit consists of a crudely-rectangular opening now filled with water at least 20 feet deep whose surface is at an altitude of 779 feet. Along the south and east sides the exposed face is 12 to 15 feet high. This drops to 4 to 6 feet around the northeast and north portions. The west end shows 3 to 4 feet of rubble and cannot be far from the basalt dike. Most interesting is the quartz vein indicated on Plate I along the southeast edge; here is the best show of molybdenite now visible at this property. This vein is of the very irregular pinch-and-swell structure replacement type, which before mining started apparently barely reached the surface at a low point in the latter. At the southeast corner of the pond there is exposed along a nearly-vertical face of granite striking N.55°E. an irregular mass of quartz 12 feet wide by 8 feet high with a vein-like offshoot about one foot wide extending downward nearly to the surface of the pond. This latter downshoot and the lower portion of the quartz to the northeast contain platy masses of molybdenite with the plates approximately vertical. Thus for a curved length of about 4 feet and a width of 6 to 8 inches, about one-quarter of the surface area is molybdenite. Most of the quartz is barren, however, and no clues to explain the localization of the molybdenite near the base of the quartz were observed.

Farther west near the middle of the south wall of Pit 2 there is another molybdenite-rich area in quartz. This is much like that described above; it is on the upper portion of the pit walls and is inaccessible, though easily observed from a distance of 10 to 12 feet. It is not certain that these two molybdenite occurrences are in the same quartz vein, as the latter is very irregular. However, the vein shown on the map, Plate I, is drawn to include both, though they are not actually connected at the exposed level.

The molybdenite-bearing quartz has a most irregular, roughly vein-like shape which averages perhaps a foot in thickness, but shows pronounced pinch-and-swell structure. The contact with the granite is both indefinite and irregular; crude apophyses of the quartz cut out into the granite. Samples can be collected varying in all degree from pure quartz, to quartz with occasional reddish feldspars, through

masses of granite obviously enriched by quartz, to the normal granite. Field relations here seem definitely to show that the molybdenite-bearing quartz, at least in considerable part, has replaced the granite.

Pit 3. At this position only a small amount of rock has been removed from the natural face of the cliff; perhaps a vertical height of 6 to 8 feet is involved; a narrow and shallow trench was cut to allow drainage. A 4 by 6-foot area of barren quartz is exposed along the east side of the cut. Apparently this hole was made following down this quartz lead, but results did not warrant much work. At one place a mass of quartz extending back (south) about a foot into the cliff was knocked out. The trend of this vein-like mass of quartz is essentially that of the cliff face to the west; indeed this is locally coated with remnants of quartz.

Pits 4 and 5. Apparently these were made by the most recent important work done on the Camp Five property. They are along an irregular nearly-vertical quartz vein showing pronounced pinch-and-swell structure with here and there irregular apophses projecting sideways (especially south) into the granite. Pit 4 has a worked face about 12 feet high, with only a foot of water at the bottom. Pit 5 has a 4-foot face now exposed, but the pond is 11 feet deep. Little shows here except for some barren quartz on the south face. The shaft-like opening presumably followed along a near-vertical shoot. The quartz vein can be traced from Pit 4 to Pit 5, but it is so barren that it was excavated to only a shallow depth, and now stands as an inverted saddle between them. It is definitely offset to the south from the vein in Pit 3, as it shows up well in the cliff face southeast of Pit 3 and west of Pit 4. It here contains a few flakes of molybdenite, but these constitute but a fraction of 1 percent of the actual area of the vein outcrop. The granitic wall rock on the east side of Pit 4 has a molybdenite-bearing streak about 2 feet long and up to 2 inches in width; it is from 0 to 2 inches distant from the quartz vein. On the whole the molybdenite in the area of Pits 3, 4, and 5 is less obvious than that in the area of Pits 1, 2, and 9.

Pit 6. This trench which is about 18 feet deep extends some 50 feet in a southwesterly direction into the cliff face. The southeast edge is marked by fissure quartz up to 4 inches thick standing nearly vertical and striking N. 55° E. The opposite edge of the pit is similarly fracture-controlled, but its strike is about N. 20° E. This quartz is apparently fine-grained and barren, as is also the quartz which is roughly parallel to the sheeting (dip 20 to 25° to the south); this latter quartz, however, is only about 1/2 an inch thick. Blocks in the pit show molybdenite present in irregular coarsely-crystalline quartz masses; these are not over 2 feet across; they are of the blow-out type, with very irregular boundaries that grade into granite in the same manner as is described above for Pit 2. Samples from the dump of Pit 6, which dump is used to support the east-west road at the north

end of the trench, show molybdenite in quartz, as well as interrupted thick films of purple fluorite, on joint surfaces in the granite. Associated with the latter are what was taken to be small masses of arsenopyrite, locally altered to limonite. The fluorite-arsenopyrite mineralization seems not to be associated directly with the molybdenite. Occurring with the latter at this pit and elsewhere are small amounts of yellow molybdic ocher, which consists of molybdenum hydroxide carrying ferric iron.

Origin

There are apparently two stages of quartz formation. One stage has resulted in irregular replacement veins and shoots of rather coarse grained quartz. The molybdenite (and small amounts of molybdite) are definitely associated with this quartz, though also present in the neighboring granite. This quartz while in part possibly in vertical shoots, is very definitely in near-vertical vein-like masses trending slightly north of east. It is also possible, on the basis of present tentative evidence, to consider that albitization of the granite occurred locally in connection with the introduction of this quartz. Were this confirmed, it might well be of considerable aid in further prospecting.

Fine-grained quartz occurring as fissure fillings and in thin layers roughly parallel to the sheeting (dips 20 to 25° to the south) is also present. This quartz seems to be barren in general, and is quite possibly younger than the coarse grained vein quartz, though unfortunately field evidence to settle this point was not observed. Since purple fluorite occurs sparingly on such fracture surfaces, it may be of the same age. With it is associated an iron mineral, possibly arsenopyrite.

A piece of basalt found near Pit 1 contain a tiny crystal of chalcopyrite; this may be of interest in connection with the fact that the analysis of the molybdenite concentrates shipped from this property early in 1940 showed them to contain 0.04 percent copper.

Apparently the group that first worked the Camp Five property considered that the molybdenite bore some genetic relationship to the basalt. Opening of Pits 1, 8, 9, and 10 all support this contention. However, it seems clear from the other openings, especially those of Pits 4 and 5, that this is probably not the case. Nowhere was molybdenite observed in the basalt or in significant close association. Nowhere were molybdenite-quartz veins observed cutting the basalt. It is therefore tentatively concluded that the molybdenite antidated the basalt, and therefore that the latter is of no significance in connection with the actual locale of deposition of the molybdenite.

Economic Possibilities

As already noted, Burbank and Cummings estimated that 25,486 cubic feet of rock have been removed from the various pits, etc., on the Camp Five property. This resulted in 6,094 lbs. of 47.82 percent molybdenum concentrates early in 1940, plus an unknown but certainly much smaller amount obtained in 1937-38. If these concentrates were sold at 45 cents a pound, a favorable price was obtained. In short, a $40,000 investment yielded less than $3,000 in ore (not allowing for transportation) plus an undisclosed sum for the sale of second-hand machinery.

With the exception of some of the work done by the first operators to explore the basalt contacts, it would seem that prospecting and mining proceeded at the positions of the best molybdenite shows. It thus follows that molybdenite is not present on this property in anything like sufficient quantity to warrant further developments, even under present emergency conditions.

The molybdenite is definitely in or close to irregular quartz veins that may be locally somewhat pipe-like. The quantity of such exposed quartz is small; at best it is shown to be something under one percent of the north flank of the hill. It here occurs in a series of sub-parallel vertical veins that extend only short distances. No good estimate of the percentage of molybdenum in the quartz and nearby granite can be given; it would be very small, probably less than 0.1 percent, as is indicated from the production figures cited above.

It is thus concluded that 1) there is not enough molybdenite present to warrant large scale mining of the granite en masse, and 2) that the individual quartz veins or shoots and associated granite are not rich enough in molybdenite to warrant their removal by small scale mining methods.

Dmea 52334

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 21 1952

UNITED STATES
DEPARTMENT OF THE INTERIOR

Oscar L. Chapman, Secretary

Reviewed by
DMEA OPERATING COMMITTEE
1-25-52
(date) RL

DEFENSE MINERALS EXPLORATION ADMINISTRATION

Report of Examination by Field Team
Region V

Middle Inlet Land Company
2966 North 49th Street
Milwaukee (10), Wis.

Project located near Middle Inlet, Wis.

COMMODITY: Molybdenum

Emmett J. Martin, Mining Engineer
Mining Division
U. S. Bureau of Mines

January 4, 1952

PERTINENCE OF THIS PROPOSAL TO COMMODITY PROGRAM

Molybdenum is a necessary component of materials and products entering into the manufacture or production of arms, munitions, and implements of war and is needed for other military and defense effort purposes. The Munitions Board has declared molybdenum critical and strategic, and every effort is being made to increase its production. Under Mineral Order 5, molybdenum is in the 50 percent Government participation bracket.

TECHNICAL FEASIBILITY

Technically, this project is feasible as there are a considerable number of exposures of molybdenite on this property; and although the most prominent ones are mainly replacement quartz veins, there is some dissemination in the granite. Past production amounts to approximately 6,000 pounds of molybdenite from several shallow pits. This project stands a long chance of opening up a substantial tonnage of molybdenum.

AVAILABILITY OF REQUIREMENTS

Deisel or gas power, water, and manpower are available. A combination shelter and shed would be required.

FINANCING

This venture of the Middle Inlet Land Co. is backed by substantial businessmen of Milwaukee and Wausau, Wis., particularly a Mr. Dale of Waukesha, Wis. They will be able to furnish their share of the cost of the project.

COMPETENCE OF APPLICANT

Mr. Brumstead has been a successful building contractor, presently retired.

R. G. Comer, geologist, who will outline the work, is recommended

by Dr. Ernest Bean, Wisconsin State Geologist, as being a competent and capable geologist.

Mr. Dale is a very capable administrator.

RECOMMENDATIONS

It is recommended that the applicant's request for Government assistance in this exploration for molybdenum be granted. It is also recommended that the results of phase one be closely scrutinized before phase two is initiated.

It is further recommended that any assistance on the basis of a uranium exploration deposit be denied, as the deposit is very weakly radioactive and there only sporadically.

SUMMARY AND CONCLUSIONS

This property has been examined for molybdenum by D. Jerome Fisher, U.S.G.S., and A. M. Cummings and D. H. Mullen, mining engineers, U.S.B.M.; and for uranium by E. J. Martin, mining engineer, U.S.B.M. All concur in the occurrence of molybdenite and that the grade is low, probably between 0.1 percent and 0.2 percent of an unknown tonnage, which is indicated to be too small for large-scale operations.

Since this property has not been properly sampled and the "ore" boundaries have not been delineated, there is a "long-shot" chance that a substantial tonnage of marginal ore could be developed here. If the tonnage were large enough for big-scale operations, a grade of only 0.3 percent molybdenite would be economical under proper conditions.

PROPERTY AND LOCATION

The Middle Inlet property is located about 5 miles northwest of Middle Inlet, Marinette County, Wis., on Highway X. (See Plate I of Fisher's report.)

This property consists of the following:

SW1/4 NE1/4, sec. 7, T. 33 N., R. 20 E.

S1/2 NW1/4, sec. 18, T. 33 N., R. 20 E.

NE1/4 NW1/4, sec. 18, T. 33 N., R. 20 E.

NW1/4 NE1/4, sec. 18, T. 33 N., R. 20 E.

SE1/4 NE1/4, sec. 13, T. 33 N., R. 19 E.

Incidentally, all maps submitted by the applicant are copies or have been taken from maps prepared for the report of D. Jerome Fisher. Geologic report No. 2, submitted by the applicant, has been taken verbatim from Fisher's report.

Attached is a copy of D. Jerome Fisher's U.S.G.S. report on molybdenite in northeastern Wisconsin. The Camp Five area referred to in this report is identical with the property of the Middle Inlet Land Co.

ECONOMICS

From Fisher's report it appears that some 25,486 cubic feet of rock was removed from the various excavations to produce approximately 3 tons of molybdenite concentrates. Depending on factors used, this could give a grade of 0.1 percent to 0.15 percent MoS_2 for the rock removed. In addition, there are 2 unknowns which would probably up-grade the ore. First, the mill recovery was probably not too good; secondly, the tonnage of the rock removed or excavated is not identical with the tonnage milled, as Mr. Fisher refers repeatedly to dump material containing MoS_2. These latter points are mentioned just to indicate that the deposit has not yet been properly sampled and analyzed. There is a "long-shot chance" that a marginal deposit of molybdenum exists here, provided that it were large enough for open pit type of mining or a caving or semi-caving method to be used.

With a 90 percent mill recovery, a grade of 0.3 percent molybdenite would be economical. This would permit a recovery of 5.4 pounds of MoS_2 at $0.60 per pound of MoS_2, or $3.24; 5,000,000 tons of such ore might be exploited for the following:

CAPITAL COST:

Mill	$1,000,000
Mine	750,000
Townsite	200,000
	$1,950,000

1,000 TONS PER DAY OPEN PIT MINING:

Mining		$0.75
Milling		.90
General		.35
	Direct	$2.00
Amortization		.40
Freight taxes, etc.		.50
		$2.90

Margin - $0.50 per ton

This material is inserted merely to stress the point that a grade of 0.3 percent or better could be economical.

Report on
Molybdenite in Northeastern Wisconsin

by

D. Jerome Fisher

Abstract

Molybdenite is present in and near irregular quartz veins in albitized granite (Marinette Co.) and in pegmatite (Florence Co.) in extreme northeastern Wisconsin. Some 3,000 lbs. of molybdenum have been removed from the Camp Five property (Marinette Co.), and several little prospect pits expose small shows of molybdenite 27 miles further north at the Payant-Chrissman properties (Florence Co.).

The quartz veins on the Camp Five property while roughly vertical show pronounced pinch and swell structure with very indefinite walls that grade into albitized granite. They outcrop over less than one percent of the north flank of the hill on which all the deposits have been found. The available molybdenite is much too small in amount to warrant large scale mining of a big fraction of the rock. Even when in small operations only the more favorable veins and shoots are removed, it seems that the rock carries less than 0.1 percent molybdenum.

The pegmatites and associated quartz veins of the Payant-Chrissman area are sharp-walled sheets mostly only a foot or less in thickness, probably constituting not over 5 percent of the country rock through which they are widely disseminated. The country rock is a mica schist (certain phases are poorly gneissic) which locally contains up to 50 percent of its volume as feldspar. The molybdenite occurs sparingly as flakes up to 1 inch long; it is locally fairly common, especially in the quartz of a pegmatite. It is also found in narrow quartz veins of at least two ages. It is concluded that the price of molybdenite would have to be nearly equal to that of gold to warrant exploitation. Payant was led to think he might have a feldspar proposition, but nothing seen by the writer would remotely suggest this.

Introduction

Molybdenite occurs in northeastern Wisconsin in Marinette and the adjacent portion of Florence Counties. Early in 1940 three tons of molybdenite concentrates were shipped from theCamp Five property. This is in south central Marinette Co. 4 miles northwest of the hamlet of Middle Inlet and 26 miles northwest of the city of Marinette on Green Bay. The writer ably assisted by A. H. Chidester spent July 3, 5, and 6, 1943, mapping and examining this prospect.

On July 7, 1943, molybdenite shows were examined on the Payant and Chrisman properties in southeastern Florence County. These properties are 6 miles southwest of Niagara, Wisconsin, and 10 miles SSW of Iron Mountain, Michigan. They are 27 miles north of the Camp Five prospect.

U. S. Highway 141 by the C. M. & St. P. R.R. leads north from Middle Inlet through Niagara, Wis., to Iron Mountain, Mich. On this highway some 16 miles north of Middle Inlet and 21 miles south of Niagara is the town of Amberg. Mr. Elmer Grimmer (an attorney of Marinette) showed the writer samples of molybdenite-bearing granite much like that at Camp Five, which he stated came from the old water-filled quarry of the Pike River Granite Co. to the east of Amberg. State Geologist E. F. Bean reports molybdenite occurs in the Daniels quarry at Amberg.

J. A. Payant (an undertaker in Iron Mountain) reported that he understood that molybdenite was present on the Charles Bennett property 2 miles west of Niagara (SE 1/4, sec. 7, T. 38 N., R. 20 E.), but a hasty visit failed to confirm this. In any case Payant thinks the molybdenite-bearing rocks strike in a northeasterly direction from his property.

Camp Five Property

Introduction

The Camp Five Property (named from the old lumber company that dammed the stream here) is in the north-central part of sec. 18, T. 31 N., R. 20 E. The index map on Plate 1 shows its location with respect to Middle Inlet and the various roads. The 10-acre square indicated by short dashed lines on the detailed map of Plate I was located approximately by careful pacing from the T-road at the middle of the east side of sec. 18. The land is owned by W. P. McCaskey and the Tobin heirs.

Mr. Elmer Grimmer stated that the property was originally opened by a group organized by an Appleton, Wisconsin, man that worked the western portion in 1937-1938. In 1939 a group from Green Bay, Wisconsin and elsewhere organized the Wisconsin Molybdenite Corporation and during 1939-1940 the mine was actively worked for about eight months. This company raised some $40,000, of which $25,000 was spent for equipment. These operations recovered 68 bags of molybdenite concentrates which weighed 6,094 lbs. dry and contained 47.82 percent of molybdenum and 0.04 percent of copper, according to assay no. 499222 of Ledoux and Co., Feb. 21, 1940. Since then most of the machinery has been sold and the roof of the mill has fallen in. In August, 1942, W. S. Burbank (U.S. Geol. Survey) and A. H. Cummings (U.S. Bur. of Mines) visited the prospect and estimated that 25,486 cubic feet of rock were removed in the various pits, cuts, and shafts on the property.

In 1941 it was reported[1] that Professor N. W. Meloche of the Dept.

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[1] Works, Mrs. L. P., Rhenium-bearing molybdenite in northern Wisconsin. Rocks and Minerals, Vol. 16, No. 3, p. 93, Mar. 1941.

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of Chemistry of the Univ. of Wisconsin had found these molybdenite concentrates contained 50 parts per million of rhenium. At the April, 1943, meeting of the American Chemical Society at Detroit, it was announced by Melaven and Bacon[2] that potassium perrhenate is present in the flue dusts

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[2] Jour. Chem. Educ., 20 (5), 210, May 1943.

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from the roasting of molybdenite; the dusts contain in excess of one percent Re.

simply irregular masses or blowouts of quartz, but the shaft-like openings of some of the pits on the property indicate that at least in part they may have been more or less vertical shoots. The most pronounced veins are the vertical ones indicated on Plate I joining Pits 4 and 5; also at the southeast edge of Pit 2. Pit 3 is on a minor vein of similar strike (S.85°W.) along the north face of a 15-foot cliff. The trend of these veins is roughly the same as the strike of the sheeting of the granite.

Ten pits or trenches have been indicated by numbers on the detailed map of Plate I. These numbers have no sequential significance; it was not possible to ascertain enough of the history of the deposit to find in what order the pits were developed.

The remainder of this section is devoted to a description of the various pits.

Pit 8. This may have been the first opening made on the property. Only a little material was removed, perhaps 100 square feet for a depth of 3 or 4 feet, and this was mainly obtained by blasting from the steep side of the hill. Most interesting is the presence of basalt stringers up to a foot thick cutting the granite here. Only a little molybdenite was seen here; this was in a small quartz replacement mass in the granite, a foot or so from the basalt.

Pit 7. This consists of a trench which was run south into the hillside so that a 15-foot-high face was worked at the south end. This may have followed some sort of a vein, but if so it was short, as it does not show along the back (south) face at the present time. The pond is some 10 feet deep, indicating that a shaft-like opening was followed down at the back of the trench; this may have been along a molybdenite-bearing quartz shoot. All outcrops on the sides of this opening as well as dump samples show granite; some of the latter contain quartz-enriched portions carrying flakes of molybdenite. Presumably the better pieces from this as well as all other dumps and their openings have been removed. Rock masses of this dump do not show much quartz; there is some vuggy limonitized pyrite; also some molybdenite was seen along slippage planes in the granite.

Pit 9. This pit seems to have started as a trench heading south along the basalt-granite contact. This encountered a fracture-surface in the granite dipping steeply (85°) to the north which was covered with very fine granular molybdenite varying from nothing to over 1/2-inch in thickness. This was followed to the east by the trench indicated on Plate I; along the north side of this cut near the west end there is an area of the granite about 5 by 1 feet in which flakes of molybdenite are readily found; these perhaps constitute 1 to 2 percent of this area. Some of the blocks of granite from the east end of this trench show fracture surfaces coated with irregular thick films of purple fluorite.

Pit 1. Here the basalt-granite contact is also well exposed; it is vertical or dips very steeply to the west. This pit is a shaft-like opening which has an 18-foot face on its east side. A number of very irregular quartz masses of the "blowout" type appear in the pit walls; the largest one is 3 by 1 feet. Only one of these (10 feet up on the east side) shows molybdenite (two small flakes) at the present time. One small flake of this mineral was also seen in the quartz-enriched granite on the west side of the pit 3 feet above the base and 4 inches from the basalt. Loose samples lying on the granite on the east side of this pit (and probably from this pit) are excellent to show molybdenite in quartz-enriched granite which has suffered pronounced chloritization of the plagioclase feldspar.

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Origin

There are apparently two stages of quartz formation. One stage has resulted in irregular replacement veins and shoots of rather coarse grained quartz. The molybdenite (and small amounts of molybdite) are definitely associated with this quartz, though also present in the neighboring granite. This quartz while in part possibly in vertical shoots, is very definitely in near-vertical vein-like masses trending slightly north of east. It is also possible, on the basis of present tentative evidence, to consider that albitization of the granite occurred locally in connection with the introduction of this quartz. Were this confirmed, it might well be of considerable aid in further prospecting.

Fine-grained quartz occurring as fissure fillings and in thin layers roughly parallel to the sheeting (dips 20 to 25° to the south) is also present. This quartz seems to be barren in general, and is quite possibly younger than the coarse grained vein quartz, though unfortunately field evidence to settle this point was not observed. Since purple fluorite occurs sparingly on such fracture surfaces, it may be of the same age. With it is associated an iron mineral, possibly arsenopyrite.

A piece of basalt found near Pit 1 contain a tiny crystal of chalcopyrite; this may be of interest in connection with the fact that the analysis of the molybdenite concentrates shipped from this property early in 1940 showed them to contain 0.04 percent copper.

Apparently the group that first worked the Camp Five property considered that the molybdenite bore some genetic relationship to the basalt. Opening of Pits 1, 8, 9, and 10 all support this contention. However, it seems clear from the other openings, especially those of Pits 4 and 5, that this is probably not the case. Nowhere was molybdenite observed in the basalt or in significant close association. Nowhere were molybdenite-quartz veins observed cutting the basalt. It is therefore tentatively concluded that the molybdenite antidated the basalt, and therefore that the latter is of no significance in connection with the actual locale of deposition of the molybdenite.

Economic Possibilities

As already noted, Burbank and Cummings estimated that 25,486 cubic feet of rock have been removed from the various pits, etc., on the Camp Five property. This resulted in 6,094 lbs. of 47.82 percent molybdenum concentrates early in 1940, plus an unknown but certainly much smaller amount obtained in 1937-38. If these concentrates were sold at 45 cents a pound, a favorable price was obtained. In short, a $40,000 investment yielded less than $3,000 in ore (not allowing for transportation) plus an undisclosed sum for the sale of second-hand machinery.

With the exception of some of the work done by the first operators to explore the basalt contacts, it would seem that prospecting and mining proceeded at the positions of the best molybdenite shows. It thus follows that molybdenite is not present on this property in anything like sufficient quantity to warrant further developments, even under present emergency conditions.

The molybdenite is definitely in or close to irregular quartz veins that may be locally somewhat pipe-like. The quantity of such exposed quartz is small; at best it is shown to be something under one percent of the north flank of the hill. It here occurs in a series of sub-parallel vertical veins that extend only short distances. No good estimate of the percentage of molybdenum in the quartz and nearby granite can be given; it would be very small, probably less than 0.1 percent, as is indicated from the production figures cited above.

It is thus concluded that 1) there is not enough molybdenite present to warrant large scale mining of the granite en masse, and 2) that the individual quartz veins or shoots and associated granite are not rich enough in molybdenite to warrant their removal by small scale mining methods.

DMEA-2334

INLET LAND COMPANY, Inc.,
2966 N. 49th St., Milwaukee, Wis.

November 10th, 1951

U. S. Bureau of Mines,
2408 Colfax Ave., South,
Minneapolis, Minn.

Gentlemen:

I am enclosing application in quadruplet, for aid in exploration of minerals, on revised Form 07-103.

The data compiled in this application is taken at present prevailing costs and my estimates.

Close records will be kept of all costs of operation, then and if this application is approved, as my field operations are started.

The drill hole locations, as indicated on the maps, are only approximate and should be under the direction of a competent geologist as to location, angle of drilling, etc.

We would appreciate the consideration of this application at your earliest convenience. In the event of your acceptance, we would like to start operations some time in April of 1952.

Hoping that the enclosed information is satisfactory, and thanking you for your earliest consideration, I am

Yours very truly,

INLET LAND COMPANY, Inc.,

Otto B. Brumsted

Otto B. Brumsted, President

OBB:BHW
Enclosures.

DMEA-2334

INLET LAND COMPANY , Inc.,
2966 N. 49th St., Milwaukee, Wis.

November 10th, 1951

U. S. Bureau of Mines,
2908 Colfax Ave., South,
Minneapolis, Minn.

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Yours very truly,

INLET LAND COMPANY, Inc.,

Otto B. Brumsted

Otto B. Brumsted, President

OBB:WHW
Enclosures.

RECEIVED
JAN 4
DEPT. OF INTERIOR
BUREAU OF MINES
MINNEAPOLIS, MINN.
REGION V

DMEA-2324

INLET LAND COMPANY , Inc.,
2966 N. 49th St., Milwaukee, Wis.

November 10th, 1951

U. S. Bureau of Mines,
2208 Colfax Ave., South,
Minneapolis, Minn.

Gentlemen:-

I am enclosing application in quadruplet, for aid in exploration of minerals, on revised forms MF-103.

The data compiled in this application is taken at present prevailing costs and may fluctuate.

Close records will be kept of all costs of operation, when and if this application is approved, at the time operations are started.

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Otto B. Brumsted

Otto B. Brumsted, President

OBB:WHW
Enclosures.

DMEA-2334

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2966 N. 49th St., Milwaukee, Wis.

November 10th, 1951

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Minneapolis, Minn.

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Yours very truly,

INLET LAND COMPANY, Inc.,

Otto B. Brumsted

Otto B. Brumsted, President

OBB:WHW
Enclosures.

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

Not To Be Filled in by Applicant

Docket No. DMEA-2334
Metal or Mineral
Date Received 1-21-52
Amount $
Participation (Government %)

Inlet Land Company Inc.
2966 North 49th St.
Milwaukee, (10), Wisconsin

Otto B. Brumsted
2966 North 49th St.
Milwaukee, (10) Wis.

Name and address of applicant

Date November 10, 1951

If you have already filed MF-100, give date filed _____, type of assistance requested _____,

DMA Docket Number (if available) _____

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

1. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

   (*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

   (*c*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

   NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

2. (*a*) What metals or minerals do you expect to find?

   (*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

11. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Inlet Land Company Inc.
(Name of company)

By Otto B. Brumsted Pres.
(Signature of authorized official)

November 10, 1951
(Date)

Otto B. Brumsted President
(Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—64067-2

Milwaukee, Wisconsin
2966 North 49th St.
11-10-51

Defense Minerals Adm.
Dept. of Interior
Washington, D. C.

Gentlemen:

In compliance with your instructions on form MF - 103 for securing government assistance in the exploration of minerals I submit the following information, See Exhibit A - Phase 1 and 2.

Question No. 1

A. Approx. 240 acres including abandoned Molybdenum Mine. See enclosed "Index Maps No. 1 and No. 2."

B. We are the owners of the property including mineral rights.

C. This land is located in Marinette County in the state of Wisconsin as follows:

SW 1/4 - SE 1/4 of Sec. 7 - Township 33 - N of Range 20 E.
S 1/2 - NW 1/4 of Sec. 18 - Township 33 - N of Range 20 E.
NE 1/4 - NW 1/4 of Sec. 18 - Township 33 - N of Range 20 E.
NW 1/4 - NE 1/4 of Sec. 18 - Township 33 - N of Range 20 E.
SE 1/4 - NE 1/4 of Sec. 13 - Township 33 - N of Range 19 E.

Question No. 2

A. Molybdenum and possibly uranium.

B. The following geologists have recommended diamond drilling:

Mr. R. G. Comer, Waukesha, Wisconsin, see enclosed geologist reports No. 1 and No. 2 and maps No. 3 and 4.
Professor Bean, State Geologist, University of Wisconsin, Madison Wisconsin.
Mining Engineer E. J. Martin, U. S. Bureau of Mines, Minn., Minn.

Question No. 3

A. Two thousand (2,000) feet of diamond core drilling.
Total cost of project ($29,290.00) Twenty nine thousand, two hundred ninety dollars.

B. Work can be started as soon as drilling contracts can be arranged (estimated 2 weeks) and completed in 4 months thereafter.

Question No. 4

See map No. 3

Question No. 5

No existing facilities, buildings, etc.

Question No. 6.

Building of office, tool house, and shelter size 20 ft. by 30 ft. on exploration site. Cost $3,000.00. Lumber, millwork, hardware, and Paint $1,800.00. Labor $1,200.00.

Question No. 7

Contract for drilling equipment to diamond drill project, from "E. J. Longyear Co., Minn., Minn." At cost of $8.50 per foot. Refer to enclosed bid by E. J. Longyear Co. Estimated cost of drilling 2,000 feet vertical $17,000.00. 200 ft. casing and reaming at $3.50 per foot. - $700.00. See exhibit A - phase 1 and 2. Purchase of core splitter. - $90.00.

Question No. 8

Estimated constructural cost of bulldozing, removing overburden, and building roads for drilling machine $1,200.00, see exhibit A - phase 1 and 2.

Estimated cost of Supervisors to be present at all times during drilling operations. Labor and Supervision: 1 superintendent in charge of project, approximately 80 days at $25.00 per day. $2,000.00. 1 geologist, approximately 8 days at $75.00 per day. $600.00. Subistence allowance 1,000.00. Transportation allowance $400.00. 1 or 2 carpenters at $1.75 to $2.50 per hour. 2 or 3 carpenter helpers at $1.25 to $1.50 per hour. See exhibit A - phase 1 and 2.

Question No 9

Miscellaneous Costs: Core boxex, stationary $600.00. General Supervision-Bookkeeping, vouchers, maps etc., of employees allocated on basis of time spent on the project $400.00. Rehabilitation and repairs, No cost.

Miscellaneous other costs: Assaying, 400 samples at $2.50. $1,000.00. Comp. ins., public liability ins. $200.00. Contingency $2,000.00.

Question No. 10

A. We are prepared to invest $14,645.00 in project. B. Yes.

Question No. 11 -

Contingency amount listed in question No. 9 to cover possible angle drilling costs and any unforseen costs.

Signed:
Inlet Land Co., Inc.
Otto B. Brumsted
Otto B. Brumsted, President

EXHIBIT "A"

The exploratory work to be performed under this contract will consist of two parts, Phase 1 and Phase 2. Phase 1 will commence within two weeks after the signing of the contract. Phase 2 will depend upon the outcome of Phase 1 and will be commenced only upon written approval of the Government.

Phase 1

Phase 1 will consist of the erection of a combination office-tool house and shelter, and drilling 1,000 feet of core-drill holes. The holes are to be located and directed under the supervision of a competent geologist. Each hole will be from 100 feet to 150 feet in depth. The operator is to carefully sample the core and sludge in accordance with conventional and approved sampling practices and will submit a complete report of the results obtained to the Government upon completion of the project. The estimated cost of Phase 1 is as follows:

Fixtures and improvements		$3,000
One combination office, shelter and tool house 20' X 30' built in sections and bolted together to assure greater resale value.		
cost of lumber, hardware, mill-work and paint	$1,800.00	
cost of labor	1,200.00	
total cost	$3,000.00	
Operating equipment		
Operating equipment to be purchased:		
1 core splitter		90
Operating equipment to be rented:		
1 D-8 cat bulldozer, approximately 5 days at $14.00 per hour. (This rate includes operator, fuel, and upkeep of equipment)		600
1,000 feet of drilling by contract at $8.50 per foot		8,500
100 feet of reaming and casing (Contract to be approved by Government)		350
Labor and supervision		
1 superintendent in charge of project and sampling at $25.00 per day, 40 days		1,000
1 geologist, approximately 4 days at $75.00 per day		300
1 or 2 carpenters at $1.75 to $2.50 per hour		---
2 or 3 carpenter helpers at 1.25 to $1.50 per hour		---

Subsistence allowance	500
Transportation allowance	200
Miscellaneous Costs	
Core boxes, stationary	$ 300
General Supervision	200
bookkeeping, vouchers, maps, etc., of employees allocated on basis of time spent on the project	
Rehabilitation and Repairs	None
Miscellaneous other costs	
Assaying, 20[illegible] samples at $2.50	500
Comp. ins., public liability ins.	100
Contingency	1,000

Phase 2

Fixtures and improvements	None
Operating Equipment	
Equipment to be purchased	None
Equipment to be rented	None
Equipment to be supplied	None
1,000 feet of diamond drilling, approx.	$8,500
100 feet of casing, approximate	350
(This work to be contracted and contract to be approved by Government)	
Labor and Supervision	
1 superintendent in charge of project, approximately 40 days at $25.00 per day	1,000
1 geologist, approximately 4 days at $75.00 per day	300
Subsistence allowance	500
Transportation allowance	200
General supervision, bookkeeping and vouchers; wages of employees allocated on basis of time spent on project	200
Rehabilitation and repairs	None
200 samples at approximately $2.50 each	500
Comp. ins., public liability ins.	100
Contingency	1,000
TOTAL	$29,290.00
	(Total amount of loan)

Phase 2 $13,650
$16
Phase 1
Total

GEOLOGIST REPORT # 1
April 30, 1951

On the 15th , 16th and 17th of April, 1951, a general examination was made of a two hundred and forty acre tract of land in Marinette county including the Camp Five Molybdenum prospect and other mineralized exposures.

Mr. Otto B. Brumsted of Milwaukee spent Sunday, April 15 in the area and showed the location of the six forties in question. He also pointed out the various locations where his work had indicated radioactivity, and one area where mineralized rock had been found and assayed. Mr. Brumsted knows the boundaries of the area thoroughly and has marked them with blazed lines and pickets where necessary. These lines were run by compass and are accurate enough for present purposes.

A general summary of findings follows:

Index

1. Location and general description.
2. Enclosures.
3. Transportation.
4. General geology.
5. Origin of ore.
6. Radioactivity.
7. Recommendations.

1. Location and general description.

The six contiguous forty acre tracts are located in Marinette county, Wisconsin in an area consisting mainly of granite ridges rising 100 to 200 feet above sandy plains. Near the center of the east line of the most southeasterly of these forties several showings of molybdenum bearing quarts veins are exposed in test pits and trenches. These pits extend onto the adjacent forty to the east owned by A. F. Esser of Milwaukee. Near the center of the west line of the forty north of these mine openings a granite knob shows some pyrite mineralization on it's east flank. Exact locations are shown on maps 1, 2, and 3.

2. Enclosures.

The following maps and enclosures are included:

1. Index map. (County Highway Dept.)
2. Ownership map. (R.G.C.)
3. Camp Five Molybdenum Prospect. (R.G.C.)
4. Radioactivity map. (R.G.C.)
5. General geology. (R.G.C.)

3. Transportation.

The area is readily accessible by road from U. S. Highway 141. Connecting roads are blacktop and sand. Railroad facilities are available at Middle Inlet and Crivitz. A privately operated airport is maintained three miles southwest of Crivitz.

4. General Geology.

"The district is underlain by granite with normal variation. It has intruded greenstones which outcrop in several sections and which may be found as inclusions quite extensively. Locally many of the granite variations can be attributed directly to the influence of the greenstone but others such as the porphyritic types are such as are to be found in any area of extensive granite outcropping. The structural expression of the granite, granite gneiss, and greenstone is predominately E-W.

Superimposed on this general picture is a north-east south-west structural disburbance revealed in three recognized shear zones. These shears are marked in the field by an excess of pegmatoid intrusion, by the customary pneumotelytic effects such as epidote, chlorite and quartz veinlets, by large quartz veins but more especially by extensive migmatization which is the surest criterion. All deposits of economic interest which I saw or of which I heard are located along these shear zones. It is apparent that the shears have been channels for both solutions and for intrusions."

The molybdenum deposits of the Camp Five property are found in the north flank of the east-west trending ridge which rises about 100 feet above a sandy plain lying to the north. They are bounded on the west by a northeast trending dike basic in character and by a glacial fill in the valley to the east. About 800 feet southeast of pit #6 (Map 3) granite outcrops are present. Granite extends from the basic dike west and is cut by several other dikes, one outcropping about 1,200 feet west of pit #9 and another where Plumadore Creek swings northeast.

The granite near the deposits at Camp Five is high in quartz content, low in ferromagnesian minerals and moderately coarse and even grained. Where molybdenum is present siliceous pegmatites cut the granite as veins of pinch and swell type, blowouts and apophyses. These vary from irregular quartz veins to quartz feldspar pegmatitic areas in the granite.

Where veins are linear they strike approximately east-west and are roughly vertical. The granite exhibits prominent sheeting dipping to the south about 20 degrees. Near the pits considerable NW and NE fracturing is present. Many of the fracture surfaces are coated with epidote, chlorite and in one case (pit #9) granular mobydenum.

A detailed description of pits follows.*

5. Origin of Ore.

From the fact that the granite is low in ferromagnesians and high in quartz and sodic feldspars it can be argued that the basalt dikes were a lamprophyric product of the granite magma and were emplaced late in the cooling history of the granite when some disburbance took place. The molydenum bearing pegmatite and quartz were deposited later in the fractured area of the granite east of the lamprophyric dike. These dikes and the associated aplites locally contain a high percentage of pyrite and minor amounts of copper, zinc lead, gold and silver.

6. Radioactivity.

The granite area was checked with a model M-3 geiger counter (Map 4). A few anomalous readings were found near the molybdenum area. In all cases observed high readings were due to coatings of somewhat radioactive minerals on fracture surfaces or local concentrations of radioactive minerals in the granite or aplites. Readings of similar or higher intensity in analysed samples of granite from further north indicate a content of U_3O_8 equivalent of less than one tenth of one percent - - - and this in very small areas of 1 to 20 square feet. No deep red staining common to many uranium bearing deposits was observed. No visible uranium minerals were found.

7. Recommendations.

The molybdenum content of the granite and pegmatites at Camp Five is too low to warrant mining. * Pegmatite deposits of this type are commonly irregular in shape and spotty in values. However, the fact that molybdenum is present in this area of fractured granite may point to the presence of similar or stronger mineralization under the valley - east of the extension of the basalt dike and north of the creek. There is no evidence of the identity of the underlying rock. Test pitting for this information would be impractical because of the high water table near the creek. Drilling would disclose it.

No commercial uranium mineralization was observed.

Very truly yours,

R. G. Comer
Geologist

Geologic Setting *

The Camp Five property is in an area of pre-Cambrian granite according to the map in U. S. Geol. Survey Prof. Paper 184, through this is definitely indicated as Killarney near Niagara. Actually the molybdnite deposits are in quite different rocks at the two localities.

At Camp Five the deposits are found in the north (steep slope) flank of an east-west trending ridge that rises nearly 100 feet above Middle Inlet and the tributary Plumadore Creek (see Plate 1); farther north there are no outcrops for some distance -- simply a sandy plain. The south slope of the hill is well mantled with a heavy cover of vegetation; no exploration was made south of the old road indicated in this area on Plate 1. The west end of the property is marked by a pronounced north-trending dry valley underlain by basalt from which fresh samples are readily collected in the prospect pits. West of this valley, granite is found for some distance but no detailed study was made. What is a likely branch of this main basalt dike strikes NNE, just missing the west edge of Pit 2. About 700 feet to the southeast of the boundary shown near the mill on Plate 1, there is another granite outcrop; this is at the east end of the fenced field, part of which appears along the lower right edge of the detailed map on Plate 1.

A Camp Five the country rock in which the molybdenite occurs is a medium course-grained pinkish - to brownish-red granitic rock. It was assumed to be a true granite until a thin section cut from a molybdenite-bearing sample, collected from the loose pieces lying on the granite just east of Pit 1, showed it to consist essentially of albite and quartz, with a variable portion of the albite replaced by or altered to chlorite, and a minor amount of muscovite. In another sample of rock free from molybdenite (40 feet south of Pit 4, see Plate 1) more than half of the feldspar was relatively fresh orthoclase, and there was an increased percentage of muscovite. This latter rock might be called a granodiorite, or else a somewhat albitized granite. A sample taken from the Middle Inlet quarry (1.8 miles SSE of the Camp Five property, see Index Map on Plate 1) appears from inspection to be a medium coarse grained biotite granite.

Molybdenite Deposits *

The molybdenite is found in quartz veins or disseminated in the granite. Some quartz veins are narrow (1/4 inch or so) sharp-walled fissure fillings, either roughly parallel to the sheeting (dips 20-25° to the south), or nearly vertical. These in general do not carry molybdenite in significant quantities. This mineral is mainly found in or near replacement quartz veins with pronounced pinch-and-swell structure (from 0 to 20 inches thick) and very indefinite walls. They may have formed by enlargement of some of the fracture-filling type of quartz vein by latter deposition of quartz which replaced the granite. In places they seem to be simply irregular masses or blowouts of quartz but the shaft-like openings of some of the pits on the property indicate that at least in part they may have been more or less vertical shoots. The most pronounced veins are the vertical ones

indicated on Plate 1 joining Pits 4 and 5; also at the southeast edge of Pit 2. Pit 3 is on a minor vein of similar strike (S 85°W) along the north face of a 15-foot cliff. The trend of these veins is roughly the same as the strike of the sheeting of the granite.

Ten pits or trenches have been indicated by numbers on the detailed map of Plate 1. These numbers have no sequential significance; it was not possible to ascertain enough of the history of the deposit to find in what order the pits were developed.

The remainder of this section is devoted to a description of the various pits.

Pit 8. "This may have been the first opening made on the property. Only a little material was removed, perhaps 100 square feet for a depth of 3 or 4 feet, and this was mainly obtained by blasting from the steep side of the hill. Most interesting is the presence of basalt stringers up to a foot thick cutting the granite here. Only a little molybdenite was seen here; this was in a small quartz replacement made in the granite, a foot or so from the basalt."

The rubble from the work done here is mixed granite and basalt. Stringers of basalt seem to cut the granite irregularly. Occasional patches of molybdenum occur in the granite. Much of the dike material is brown stained by oxidized pyrite.

Pit 7. This consists of a trench which was run south into the hillside so that a 15-foot high face was worked at the south end. This may have followed some sort of a vein, but if so it was short, as it does not show the back (south) face at the present time. The pond is some 10 feet deep, indicating that a shaft-like opening was followed down at the back of the trench; this may have been along a molybdenite-bearing quartz shoot. All outcrops on the sides of this opening as well as dump samples show granite; some of the latter contain quartz-enriched portions carrying flakes of molybdenite. Presumably the better pieces from this as well as all other dumps and their openings have been removed. Rock masses of this dump do not show much quartz; there is some vuggy limonitized pyrite; also some molybdenite was seen along slippage planes in the granite."

Sheeting is well developed in the granite exposed in this pit. The dip of the sheeting is about 20° to the south. Well developed fractures strike N 80° E dipping 90° and N 40° W dipping 70° to NE.

Pit 9. "This pit seems to have started as a trench heading south along the basalt-granite contact. This encountered a fracture-surface in the granite dipping steeply (85°) to the north which was covered with very fine granular molybdenite varying from nothing to over 1/2-inch in thickness. This was followed to the east by the trench indicated on Plate 1; along the north side of this cut near the west end there is an area of the granite about 5 to 1 feet in which flakes of molybdenite are readily found; these perhaps constitute 1 to 2 percent of this area. Some of the blocks of granite from the east end of this trench show fracture surfaces coated with irregular thick films of purple fluorite."

The contact between the granite and the basic dike is well exposed in the west end of this pit striking N15° E and dipping 90°. A prominent fracture surface in the pit strikes N 70° E and dips 80° to the NW. Some NS fracturing is present.

Pit 1. "Here the basalt-granite contact is also well exposed; it is vertical or dips very steeply to the west. This pit is a shaft-like opening which has an 18-foot face on its east side. A number of very irregular quartz masses of the "blowout" type appear in the pit walls; the largest one is 3 by 1 feet. Only one of these (10feet up on the east side) shows molybdenite (two small flakes) at the present time. One small flake of this mineral was also seen in the quartz-enriched granite on the west side of the pit 3 feet above the base and 4 inches from the basalt. Loose samples lying on the granite on the east side of this pit (and probably from this pit) are excellent to show molybdenite in quartz-enriched granite which has suffered pronounced chloritization of the plagioclase feldspar."

Pit 2. "This pit consists of a crudely-rectangular opening now filled with water at least 20 feet deep whose surface is at an altitude of 779 feet. Along the south and east sides the exposed face is 12 to 15 feet high. This drops to 4 to 6 feet around the northeast and north portions. The west end shows 3 to 4 feet of rubble and connot be far from the basalt dike. Most interesting is the quartz vein indicated on Plate 1 along the southeast edge; here is the best show of molybdenite now visible at this property. This vein is of the very irregular pinch-and-swell structure replacement type, which before mining started apparently barely reached the surface at a low point in the latter. At the southeast corner of the pond there is exposed along a nearly-vertical face of granite striking N.55° E. an irregular mass of quartz 12 feet wide by 8 feet high with a vein-like offshoot about one foot wide extending downward nearly to the surface of the pond. This latter downshoot and the lower portion of the quartz to the northeast contain platy masses of molybdenite with the plates approximately vertical. Thus for a curved length of about 4 feet and a width of 6 to 8 inches, about one-quarter of the surface area is molybdenite. Most of the quartz is barren, however, and no clues to explain the localization of the molybdenite near the base of the quartz were observed."

"Farther west near the middle of the south wall of Pit 2 there is another molybdenite-rich area in quartz. This is much like that described above; it is on the upper portion of the pit walls and is inaccessible, though easily observed from a distance of 10 to 12 feet. It is not certain that these two molybdenite occurrances are in the same quartz vein, as the latter is very irregular. However, the vein shown on the map, Plate 1, is drawn to include both, though they are not actually connected at the exposed level."

"The molybdenite-bearing quartz has a most irregular, roughly vein-like shape which averages perhaps a foot in thickness, but shows pronounced pinch-and-swell structure. The contact with the granite is both indefinite and irregular; crude apophyses of the quartz cut out into the granite. Samples can be collected varying in all degree from pure quartz, to quartz with occassional reddish feldspars, through masses of granite obviously enriched by quartz, to the normal granite. Field relations here seem definitely to show that the molybdenite-bearing quartz, at least in considerable part, has replaced the granite."

Fractures on E and N of pit strike N 40° E and dip 90°.

Pit 3. "At this position only a small amount of rock has been removed from the natural face of the cliff; perhaps a vertical height of 6 to 8 feet is involved; a narrow and shallow trench was cut to allow drainage. A 4 by 6-foot area of barren quartz is exposed along the east side of the cut. Apparently this hole was made following down this quartz lead, but results did not warrant much work. At one place a mass of quartz extending back (south) about a foot into the cliff was knocked out. The trend of this vein-like mass of quartz is essentially that of the cliff face to the west; indeed this is locally coated with remnants of quartz."

Pits 4 and 5. "Apparently these were made by the most recent important work done on the Camp Five property. They are along an irregular nearly-vertical quartz vein showing pronounced pinch-and swell structure with here and there irregular apophyses projecting sideways (especially south) into the granite. Pit 4 has a worked face about 12 feet high, with only a foot of water at the bottom. Pit 5 has a 4-foot face now exposed, but the pond is 11 feet deep. Little shows here except for some barren quartz on the south face. The shaft-like opening presumably followed along a near-vertical shoot. The quartz vein can be traced from Pit 4 to Pit 5, but it is so barren that it was excavated to only a shallow depth, and now stands as an inverted saddle between them. It is definitely offset to the south from the vein in Pit 5, as it shows up well in the cliff face southeast of Pit 5 and west of Pit 4. It here contains a few flakes of molybdenite, but these constitute but a fraction of 1 percent of the actual area of the vein outcrop. The granitic wall rock on the east side of Pit 4 has a molybdenite-bearing streak about 4 feet long and up to 8 inches in width; it is from 0 to 2 inches distant from the quartz vein. On the whole the molybdenite in the area of Pits 3, 4, and 5 is less obvious then that in the area of Pits 1, 2, and 9."

Fracturing in the granite strikes N 30° E dipping 90° and N 40° W dipping 60° NE.

At the extreme E end of Pit 5 brownish stained quartz is exposed for a width of about 18 inches. Water in the pit prevents examination of depth. This area gave a relatively high geiger count.

Pit 6. "This trench which is about 18 feet deep extends some 30 feet in a southwesterly direction into the cliff face. The southeast edge is marked by fissure quartz up to 4 inches thick standing nearly vertical and striking N 55° E. The opposite edge of the pit is similarly fracture-controlled, but its strike is about N 20° E. This quartz is apparently fine-grained and barren, as is also the quartz which is roughly parallel to the shooting (dip 20 to 25° to the south); this latter quartz, however, is only about 1/2 inch thick. Blocks in the pit show molybdenite present in irregular coarsely-crystalline quartz masses; these are not over 2 feet across; they are of the blow-out type, with very irregular boundaries that grade into granite in the same manner as is described above for Pit 8. Samples from the dump of Pit 6, which dump is used to support the east-west road at the north end of the trench, show molybdenite in quartz, as well as interrupted thick films of purple fluorite, on joint surfaces in the granite. Associated with the latter are what was taken to be small masses of arsenopyrite, locally altered to limonite. The fluorite-arsenopyrite mineralization seems not to be associated directly with the molybdenite. Occurring with the latter at this pit and elsewhere are small amounts of yellow molybdic ocher, which consists of molybdenum hydroxide carrying ferric iron."

Exposure A

About 50 feet SE of Pit 9 an outcrop near the stream shows some relatively high radioactivity over an area of 15 to 20 square feet. The rock is medium to fine grained granite mygmatite or aplite. Some red and brown staining is present on fracture surfaces.

Origin *

There are apparently two stages of quartz formation. One stage has resulted in irregular replacement veins and shoots of rather coarse grained quartz. The molybdenite (and small amounts of molybdite) are definitely associated with this quartz, though also present in the neighboring granite. This quartz while in part possibly in vertical shoots, is very definitely in near-vertical vein-like masses trending slightly north of east. It is also possible, on the basis of present tentative evidence, to consider that albitization of the granite occurred locally in connection with the introduction of this quartz. Were this confirmed, it might well be of considerable aid in further prospecting.

Fine-grained quartz occurring as fissure fillings and in thin layers roughly parallel to the shooting (dips 20 to 25° to the south) is also present. This quartz seems to be barren in general, and is quite possibly younger than the coarse grained vein quartz, though unfortunately field evidence to settle this point was not observed. Since purple fluorite occurs sparingly on such fracture surfaces, it may be of the same age. With it is associated an iron mineral, possibly arsenopyrite.

A piece of basalt found near Pit 1 contains a tiny crystal of chalcopyrite; this may be of interest in connection with the fact that the analysis of the molybdenite concentrates shipped from this property early in 1940 showed them to contain 0.04 percent copper.

Apparently the group that first worked the Camp Five property considered that the molybdenite bore some genetic relationship to the basalt. Opening of Pits 1, 8, 9, and 10 all support this contention. However, it seems clear from the other openings, especially those of Pits 4 and 5, that this is probably not the case. Nowhere was molybdenite observed in the basalt of in significant close association. Nowhere were molybdenite-quartz veins observed cutting the basalt. It is therefore tentatively concluded that the molybdenite antidated the basalt, and therefore that the latter is of no significance in connection with the actual locale of deposition of the molybdenite.

Copy:
E. J. Longyear Company
Mining Engineers
Minneapolis 2, Minn.

Inlet Land Company, Inc.
2966 No. 49th Street
Milwaukee, Wisconsin

March 14, 1951

Attention: Mr. Otto B. Brumsted, President

Gentlemen:

We wish to acknowledge and thank you for your letter of March 7, also for the enclosed drilling data sheet that you so kindly completed.

After reviewing the information presented on the data sheet and in accordance with your letter of March 6, we are pleased to submit below our proposal for your contemplated drilling program which is to be carried out in Marinette County, Wisconsin.

We understand that the work as now contemplated will consist of the diamond core drilling of approximately 15 vertical holes in which it is estimated the depth will vary from 100 to 150 feet, that the minimum total footage will be 1,000 feet and that the material to be penetrated will consist entirely of granite and quartz; furthermore, that no overburden exists in the area to be drilled, and that all holes will start in bedrock. We also understand that the property on which the drilling is to be performed is accessible via a surfaced highway, that no road building will be required on the property, and that water is obtainable within 300 feet of any proposed drill hole location.

For this work, we propose to furnish one Longyear gasoline-powered diamond core drill together with the necessary accessory equipment required to accomplish the work as now planned. We further propose to operate the rig on a one-shift basis and to drill EX size (1⅝" diameter) hole, recovering core approximately 7/8" in diameter.

We will carry public liability insurance covering personal injury and property damage; Workmen's Compensation, Old Age Benefit, Unemployment and any other insurance on our employees required by state or federal laws; also, all-risk insurance on the drilling equipment protecting against loss by theft, fire, flood, land-slides and other similar hazards. Certificates showing the coverage refered to will be furnished if desired.

Based upon the conditions as outlined above, we are pleased to quote as follows:

<u>Diamond core drilling</u>
0 to 150 feet in depth, measured from
the collar of the hole
EX size (core approx. 7/8" in diameter - $8.50 per foot

Reaming and Casing, if required..... $3.50 per foot

Delays for your convenience or for which
you are responsible ..... $6.00 per hour

Cores are to be delivered to your representative at the drill in core boxes furnished by you.

Statements will be rendered as promptly as possible after the first of each month.

We very much appreciate the opportunity of considering this work and, if awarded the contract, we are in position to commence work immediately after the spring break-up which we estimate will be approximately May 15.

In regard to your request for information concerning the geological services offered by E. J. Longyear Company, we are referring this matter to Dr. D. M. Davidson, our Chief Geologist. Dr. Davidson is out of the city at the present time but it is expected that he will return the first part of next week, so you may expect to hear from him shortly thereafter.

Yours very truly,

E. J. LONGYEAR COMPANY

W. Davenport
Treasurer & General Manager

MJG:LT

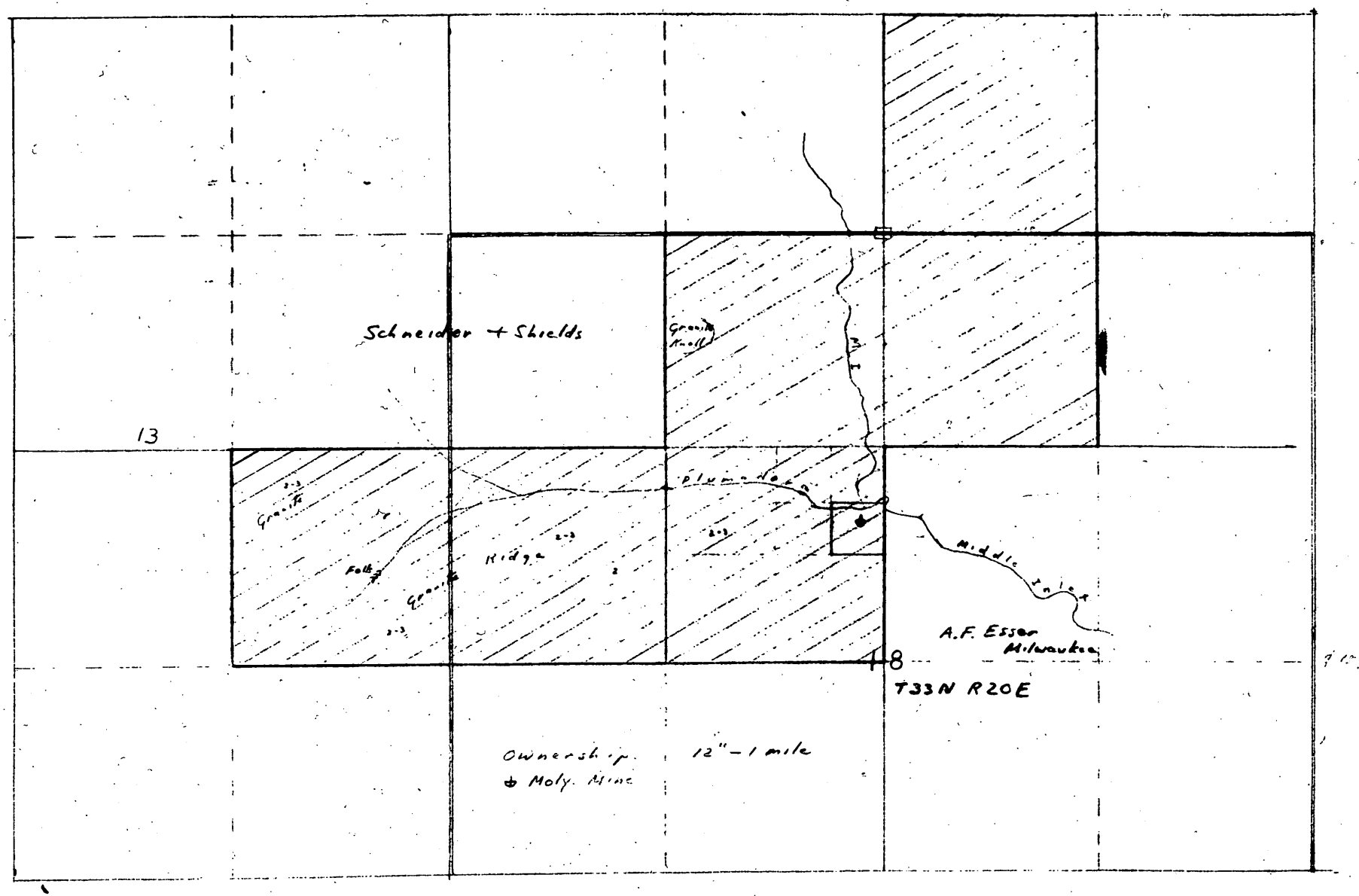
Accepted:

Inlet Land Company, Inc.

_____

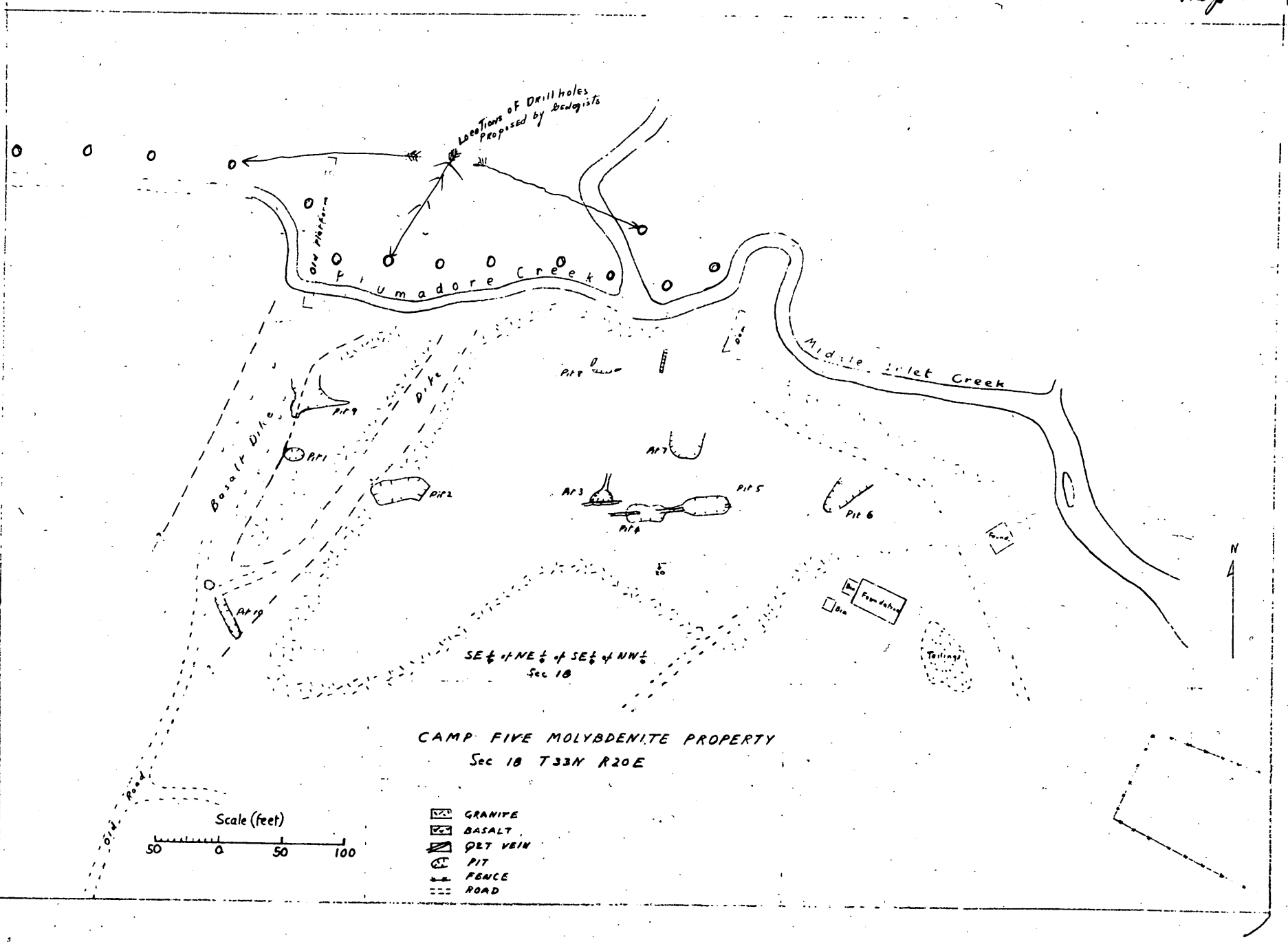
DMEA-2994
ANKER LAND CO., INC.

Map No. 2



OMEA-2389
INLET LAND CO., INC.

Map no ③ 3

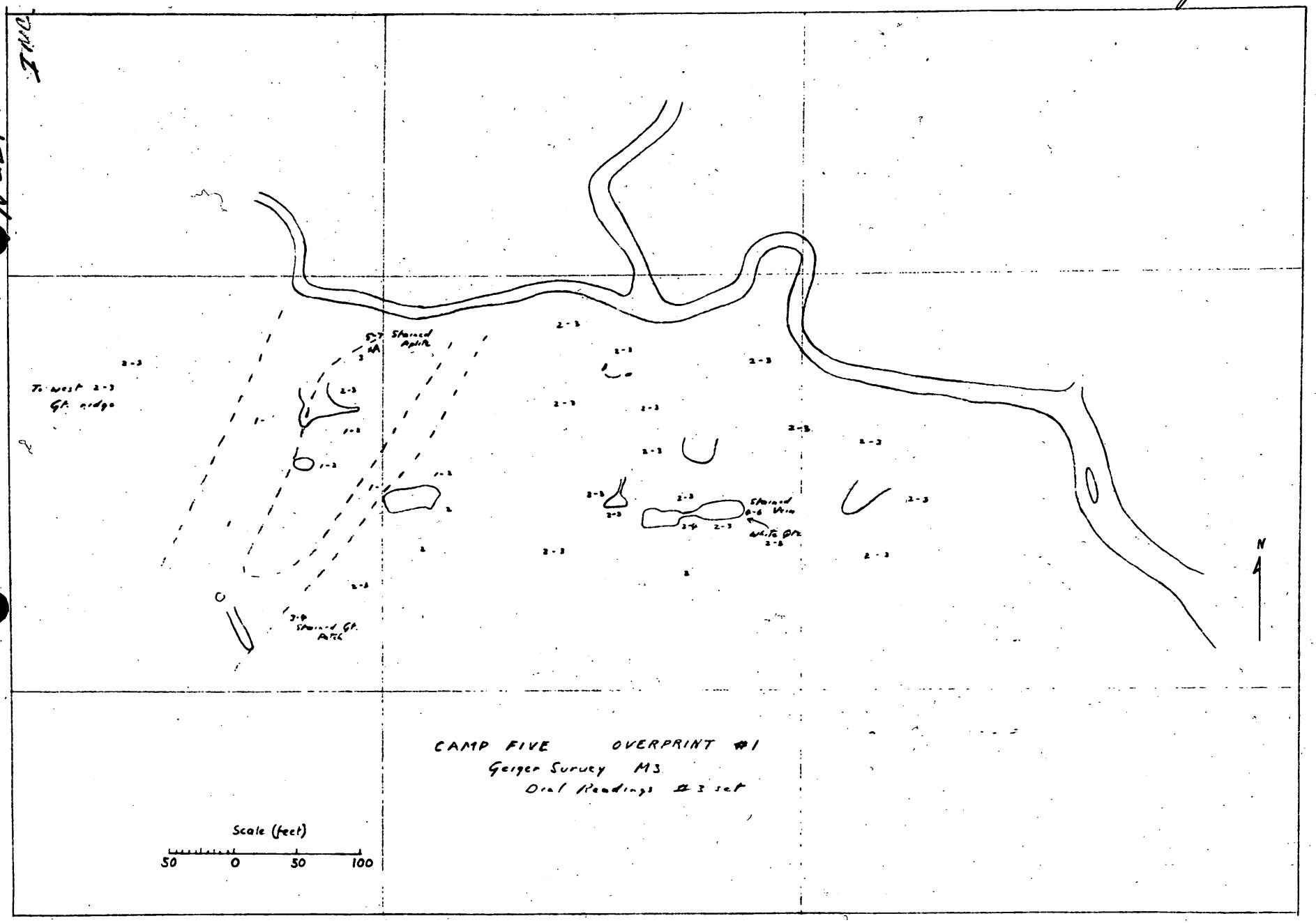


CAMP FIVE MOLYBDENITE PROPERTY
Sec 18 T33N R20E

DMEA-2934
INLET LAND CO.,
INC.

Map No. 4

4



Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

Not To Be Filled in by Applicant

Docket No. DMEA-2334
Metal or Mineral
Date Received 1-21-52
Amount $
Participation (Government %)

Inlet Land Company Inc.
2966 North 49th St.
Milwaukee, (10) Wisconsin

Otto B. Brumsted
2966 North 49th St.
Milwaukee, (10) Wisconsin

Name and address of applicant

Date November 10, 1951

If you have already filed MF-100, give date filed _____, type of assistance requested _____,

DMA Docket Number (if available) _____

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

1. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

   (*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

   (*c*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

   NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

2. (*a*) What metals or minerals do you expect to find?

   (*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

11. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Inlet Land Co. Inc. (Name of company)

By Otto B. Brunsted Pres. (Signature of authorized official)

November 10th 1951 (Date)

Otto B. Brunsted Pres. (Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—64067-2

Milwaukee, Wisconsin
2966 North 49th St.
11-10-51

Defense Minerals Adm.
Dept. of Interior
Washington, D. C.

Gentlemen:

In compliance with your instructions on form MF - 103 for securing government assistance in the exploration of minerals I submit the following information, See Exhibit A - Phase 1 and 2.

Question No. 1

A. Approx. 240 acres including abandoned Molybdenum Mine. See enclosed "Index Maps No. 1 and No. 2."

B. We are the owners of the property including mineral rights.

C. This land is located in Marinette County in the state of Wisconsin as follows:

SW 1/4 - SE 1/4 of Sec. 7 - Township 33 - N of Range 20 E.
S 1/2 - NW 1/4 of Sec. 18 - Township 33 - N of Range 20 E.
NE 1/4 - NW 1/4 of Sec. 18 - Township 33 - N of Range 20 E.
NW 1/4 - NE 1/4 of Sec. 18 - Township 33 - N of Range 20 E.
SE 1/4 - NE 1/4 of Sec. 13 - Township 33 - N of Range 19 E.

Question No. 2

A. Molybdenum and possibly uranium.

B. The following geologists have recommended diamond drilling:

Mr. R. G. Comer, Waukesha, Wisconsin, see enclosed geologist reports No. 1 and No. 2 and maps No. 3 and 4.
Professor Bean, State Geologist, University of Wisconsin, Madison Wisconsin.
Mining Engineer E. J. Martin, U. S. Bureau of Mines, Minn., Minn.

Question No. 3

A. Two thousand (2,000) feet of diamond core drilling.
Total cost of project ($29,290.00) Twenty nine thousand, two hundred ninety dollars.

B. Work can be started as soon as drilling contracts can be arranged (estimated 2 weeks) and completed in 4 months thereafter.

Question No. 4

See map No. 3

Question No. 5

No existing facilities, buildings, etc.

Question No. 6.

Building of office, tool house, and shelter size 20 ft. by 30 ft. on exploration site. Cost $3,000.00. Lumber, millwork, hardware, and Paint $1,800.00. Labor $1,200.00.

Question No. 7

Contract for drilling equipment to diamond drill project, from "E. J. Longyear Co., Minn., Minn." At cost of $8.50 per foot. Refer to enclosed bid by E. J. Longyear Co. Estimated cost of drilling 2,000 feet vertical $17,000.00. 200 ft. casing and reaming at $3.50 per foot. - $700.00. See exhibit A - phase 1 and 2. Purchase of core splitter. - $90.00.

Question No. 8

Estimated constructural cost of bulldozing, removing overburden, and building roads for drilling machine $1,200.00, see exhibit A - phase 1 and 2.

Estimated cost of Supervisors to be present at all times during drilling operations. Labor and Supervision: 1 superintendent in charge of project, approximately 80 days at $25.00 per day. $2,000.00. 1 geologist, approximately 8 days at $75.00 per day. $600.00. Subistence allowance 1,000.00. Transportation allowance $400.00. 1 or 2 carpenters at $1.75 to $2.50 per hour. 2 or 3 carpenter helpers at $1.25 to $1.50 per hour. See exhibit A - phase 1 and 2.

Question No 9

Miscellaneous Costs: Core boxex, stationary $600.00. General Supervision-Bookkeeping, vouchers, maps etc., of employees allocated on basis of time spent on the project $400.00. Rehabilitation and repairs, No cost.

Miscellaneous other costs: Assaying, 400 samples at $2.50. $1,000.00. Comp. ins., public liability ins. $200.00. Contingency $2,000.00.

Question No. 10

A. We are prepared to invest $14,645.00 in project. B. Yes.

Question No. 11 -

Contingency amount listed in question No. 9 to cover possible angle drilling costs and any unforseen costs.

Signed:
Inlet Land Co., Inc.
Otto B. Brumsted
Otto B. Brumsted, President

EXHIBIT "A"

The exploratory work to be performed under this contract will consist of two parts, Phase 1 and Phase 2. Phase 1 will commence within two weeks after the signing of the contract. Phase 2 will depend upon the outcome of Phase 1 and will be commenced only upon written approval of the Government.

Phase 1

Phase 1 will consist of the erection of a combination office-tool house and shelter, and drilling 1,000 feet of core-drill holes. The holes are to be located and directed under the supervision of a competent geologist. Each hole will be from 100 feet to 150 feet in depth. The operator is to carefully sample the core and sludge in accordance with conventional and approved sampling practices and will submit a complete report of the results obtained to the Government upon completion of the project. The estimated cost of Phase 1 is as follows:

Fixtures and improvements		$3,000
One combination office, shelter and tool house 20' X 30' built in sections and bolted together to assure greater resale value.		
cost of lumber, hardware, mill-work and paint	$1,800.00	
cost of labor	1,200.00	
total cost	$3,000.00	
Operating equipment		
Operating equipment to be purchased:		
1 core splitter		90
Operating equipment to be rented:		
1 D-8 cat bulldozer, approximately 5 days at $14.00 per hour. (This rate includes operator, fuel, and upkeep of equipment)		600
1,000 feet of drilling by contract at $8.50 per foot		8,500
100 feet of reaming and casing (Contract to be approved by Government)		350
Labor and supervision		
1 superintendent in charge of project and sampling at $25.00 per day, 40 days		1,000
1 geologist, approximately 4 days at $75.00 per day		300
1 or 2 carpenters at $1.75 to $2.50 per hour		---
2 or 3 carpenter helpers at $1.25 to $1.50 per hour		---

Subsistence allowance	500
Transportation allowance	200
Miscellaneous Costs	
Core boxes, stationary	$ 300
General Supervision	200
Bookkeeping, vouchers, maps, etc., of employees allocated on basis of time spent on the project	
Rehabilitation and Repairs	None
Miscellaneous other costs	
Assaying, 200 samples at $2.50	500
Comp. ins., public liability ins.	100
Contingency	1,000

Phase 2

Fixtures and improvements	None
Operating Equipment	
Equipment to be purchased	None
Equipment to be rented	None
Equipment to be supplied	None
1,000 feet of diamond drilling, approx.	$8,500
100 feet of casing, approximate	350
(This work to be contracted and contract to be approved by Government)	
Labor and Supervision	
1 superintendent in charge of project, approximately 40 days at $25.00 per day	1,000
1 geologist, approximately 4 days at $75.00 per day	300
Subsistence allowance	500
Transportation allowance	200
General supervision, bookkeeping and vouchers; wages of employees allocated on basis of time spent on project	200
Rehabilitation and repairs	None
200 samples at approximately $2.50 each	500
Comp. ins., public liability ins.	100
Contingency	1,000
TOTAL	$29,290.00 (Total amount of loan)

GEOLOGIST REPORT # 1
April 30, 1951

On the 15th , 16th and 17th of April, 1951, a general examination was made of a two hundred and forty acre tract of land in Marinette county including the Camp Five Molybdenum prospect and other mineralized exposures.

Mr. Otto B. Brumsted of Milwaukee spent Sunday, April 15 in the area and showed the location of the six forties in question. He also pointed out the various locations where his work had indicated radioactivity, and one area where mineralized rock had been found and assayed. Mr. Brumsted knows the boundaries of the area thoroughly and has marked them with blazed lines and pickets where necessary. These lines were run by compass and are accurate enough for present purposes.

A general summary of findings follows:

Index

1. Location and general description.
2. Enclosures.
3. Transportation.
4. General geology.
5. Origin of ore.
6. Radioactivity.
7. Recommendations.

1. Location and general description.

The six contiguous forty acre tracts are located in Marinette county, Wisconsin in an area consisting mainly of granite ridges rising 100 to 200 feet above sandy plains. Near the center of the east line of the most southeasterly of these forties several showings of molybdenum bearing quartz veins are exposed in test pits and trenches. These pits extend onto the adjacent forty to the east owned by A. F. Esser of Milwaukee. Near the center of the west line of the forty north of these mine openings a granite knob shows some pyrite mineralization on it's east flank. Exact locations are shown on maps 1, 2, and 3.

2. Enclosures.

The following maps and enclosures are included:

1. Index map. (County Highway Dept.)
2. Ownership map. (R.G.C.)
3. Camp Five Molybdenum Prospect. (R.G.C.)
4. Radioactivity map. (R.G.C.)
5. General geology. (R.G.C.)

3. Transportation.

The area is readily accessible by road from U. S. Highway 141. Connecting roads are blacktop and sand. Railroad facilities are available at Middle Inlet and Crivitz. A privately operated airport is maintained three miles southwest of Crivitz.

4. General Geology.

"The district is underlain by granite with normal variation. It has intruded greenstones which outcrop in several sections and which may be found as inclusions quite extensively. Locally many of the granite variations can be attributed directly to the influence of the greenstone but others such as the porphyritic types are such as are to be found in any area of extensive granite outcropping. The structural expression of the granite, granite gneiss, and greenstone is predominately E-W.

Superimposed on this general picture is a north-east south-west structural disburbance revealed in three recognized shear zones. These shears are marked in the field by an excess of pegmatoid intrusion, by the customary pneumotelytic effects such as epidote, chlorite and quartz veinlets, by large quartz veins but more especially by extensive migmatization which is the surest criterion. All deposits of economic interest which I saw or of which I heard are located along these shear zones. It is apparent that the shears have been channels for both solutions and for intrusions."

The molybdenum deposits of the Camp Five property are found in the north flank of the east-west trending ridge which rises about 100 feet above a sandy plain lying to the north. They are bounded on the west by a northeast trending dike basic in character and by a glacial fill in the valley to the east. About 800 feet southeast of pit #6 (Map 3) granite outcrops are present. Granite extends from the basic dike west and is cut by several other dikes, one outcropping about 1,200 feet west of pit #9 and another where Plumadore Creek swings northeast.

The granite near the deposits at Camp Five is high in quartz content, low in ferromagnesian minerals and moderately coarse and even grained. Where molybdenum is present siliceous pegmatites cut the granite as veins of pinch and swell type, blowouts and apophyses. These vary from irregular quartz veins to quartz feldspar pegmatitic areas in the granite.

Where veins are linear they strike approximately east-west and are roughly vertical. The granite exhibits prominent sheeting dipping to the south about 20 degrees. Near the pits considerable NW and NE fracturing is present. Many of the fracture surfaces are coated with epidote, chlorite and in one case (pit #9) granular mobydenum.

A detailed description of pits follows.*

5. Origin of Ore.

From the fact that the granite is low in ferromagnesians and high in quartz and sodic feldspars it can be argued that the basalt dikes were a lamprophyric product of the granite magma and were emplaced late in the cooling history of the granite when some disburbance took place. The molydenum bearing pegmatite and quartz were deposited later in the fractured area of the granite east of the lamprophyric dike. These dikes and the associated aplites locally contain a high percentage of pyrite and minor amounts of copper, zinc lead, gold and silver.

6. Radioactivity.

The granite area was checked with a model M-3 geiger counter (Map 4). A few anomalous readings were found near the molybdenum area. In all cases observed high readings were due to coatings of somewhat radioactive minerals on fracture surfaces or local concentrations of radioactive minerals in the granite or aplites. Readings of similar or higher intensity in analysed samples of granite from further north indicate a content of U_3O_8 equivalent of less than one tenth of one percent - - - and this in very small areas of 1 to 20 square feet. No deep red staining common to many uranium bearing deposits was observed. No visible uranium minerals were found.

7. Recommendations.

The molybdenum content of the granite and pegmatites at Camp Five is too low to warrant mining. * Pegmatite deposits of this type are commonly irregular in shape and spotty in values. However, the fact that molybdenum is present in this area of fractured granite may point to the presence of similar or stronger mineralization under the valley - east of the extension of the basalt dike and north of the creek. There is no evidence of the identity of the underlying rock. Test pitting for this information would be impractical because of the high water table near the creek. Drilling would disclose it.

No commercial uranium mineralization was observed.

Very truly yours,

R. G. Comer
Geologist

Geologic Setting *

The Camp Five property is in an area of pre-Cambrian granite according to the map in U. S. Geol. Survey Prof. Paper 184, through this is definitely indicated as Killarney near Niagara. Actually the molybdnite deposits are in quite different rocks at the two localities.

At Camp Five the deposits are found in the north (steep slope) flank of an east-west trending ridge that rises nearly 100 feet above Middle Inlet and the tributary Plumadore Creek (see Plate 1); farther north there are no outcrops for some distance -- simply a sandy plain. The south slope of the hill is well mantled with a heavy cover of vegetation; no exploration was made south of the old road indicated in this area on Plate 1. The west end of the property is marked by a pronounced north-trending dry valley underlain by basalt from which fresh samples are readily collected in the prospect pits. West of this valley, granite is found for some distance but no detailed study was made. What is a likely branch of this main basalt dike strikes NNE, just missing the west edge of Pit 2. About 700 feet to the southeast of the boundary shown near the mill on Plate 1, there is another granite outcrop; this is at the east end of the fenced field, part of which appears along the lower right edge of the detailed map on Plate 1.

A Camp Five the country rock in which the molybdenite occurs is a medium course-grained pinkish - to brownish-red granitic rock. It was assumed to be a true granite until a thin section cut from a molybdenite-bearing sample, collected from the loose pieces lying on the granite just east of Pit 1, showed it to consist essentially of albite and quartz, with a variable portion of the albite replaced by or altered to chlorite, and a minor amount of muscovite. In another sample of rock free from molybdenite (40 feet south of Pit 4, see Plate 1) more than half of the feldspar was relatively fresh orthoclase, and there was an increased percentage of muscovite. This latter rock might be called a granodiorite, or else a somewhat albitized granite. A sample taken from the Middle Inlet quarry (1.8 miles SSE of the Camp Five property, see Index Map on Plate 1) appears from inspection to be a medium coarse grained biotite granite.

Molybdenite Deposits *

The molybdenite is found in quartz veins or disseminated in the granite. Some quartz veins are narrow (1/4 inch or so) sharp-walled fissure fillings, either roughly parallel to the sheeting (dips 20-25° to the south), or nearly vertical. These in general do not carry molybdenite in significant quantities. This mineral is mainly found in or near replacement quartz veins with pronounced pinch-and-swell structure (from 0 to 20 inches thick) and very indefinite walls. They may have formed by enlargement of some of the fracture-filling type of quartz vein by latter deposition of quartz which replaced the granite. In places they seem to be simply irregular masses or blowouts of quartz but the shaft-like openings of some of the pits on the property indicate that at least in part they may have been more or less vertical shoots. The most pronounced veins are the vertical ones

indicated on Plate 1 joining Pits 4 and 5; also at the southeast edge of Pit 2. Pit 3 is on a minor vein of similar strike (S 85°W) along the north face of a 15-foot cliff. The trend of these veins is roughly the same as the strike of the sheeting of the granite.

Ten pits or trenches have been indicated by numbers on the detailed map of Plate 1. These numbers have no sequential significance; it was not possible to ascertain enough of the history of the deposit to find in what order the pits were developed.

The remainder of this section is devoted to a description of the various pits.

Pit 8. "This may have been the first opening made on the property. Only a little material was removed, perhaps 100 square feet for a depth of 3 or 4 feet, and this was mainly obtained by blasting from the steep side of the hill. Most interesting is the presence of basalt stringers up to a foot thick cutting the granite here. Only a little molybdenite was seen here; this was in a small quartz replacement made in the granite, a foot or so from the basalt."

The rubble from the work done here is mixed granite and basalt. Stringers of basalt seem to cut the granite irregularly. Occasional patches of molybdenum occur in the granite. Much of the dike material is brown stained by oxidized pyrite.

Pit 7. This consists of a trench which was run south into the hillside so that a 15-foot high face was worked at the south end. This may have followed some sort of a vein, but if so it was short, as it does not show the back (south) face at the present time. The pond is some 10 feet deep, indicating that a shaft-like opening was followed down at the back of the trench; this may have been along a molybdenite-bearing quartz shoot. All outcrops on the sides of this opening as well as dump samples show granite; some of the latter contain quartz-enriched portions carrying flakes of molybdenite. Presumably the better pieces from this as well as all other dumps and their openings have been removed. Rock masses of this dump do not show much quartz; there is some vuggy limonitized pyrite; also some molybdenite was seen along slippage planes in the granite."

Sheeting is well developed in the granite exposed in this pit. The dip of the sheeting is about 20° to the south. Well developed fractures strike N 80° E dipping 90° and N 40° W dipping 70° to NE.

Pit 9. "This pit seems to have started as a trench heading south along the basalt-granite contact. This encountered a fracture-surface in the granite dipping steeply (85°) to the north which was covered with very fine granular molybdenite varying from nothing to over 1/2-inch in thickness. This was followed to the east by the trench indicated on Plate 1; along the north side of this cut near the west end there is an area of the granite about 5 to 1 feet in which flakes of molybdenite are readily found; these perhaps constitute 1 to 2 percent of this area. Some of the blocks of granite from the east end of this trench show fracture surfaces coated with irregular thick films of purple fluorite."

The contact between the granite and the basic dike is well exposed in the west end of this pit striking N15° E and dipping 90°. A prominent fracture surface in the pit strikes N 70° E and dips 80° to the NW. Some NS fracturing is present.

Pit 1. "Here the basalt-granite contact is also well exposed; it is vertical or dips very steeply to the west. This pit is a shaft-like opening which has an 18-foot face on its east side. A number of very irregular quartz masses of the "blowout" type appear in the pit walls; the largest one is 3 by 1 feet. Only one of these (10feet up on the east side) shows molybdenite (two small flakes) at the present time. One small flake of this mineral was also seen in the quartz-enriched granite on the west side of the pit 3 feet above the base and 4 inches from the basalt. Loose samples lying on the granite on the east side of this pit (and probably from this pit) are excellent to show molybdenite in quartz-enriched granite which has suffered pronounced chloritization of the plagioclase feldspar."

Pit 2. "This pit consists of a crudely-rectangular opening now filled with water at least 20 feet deep whose surface is at an altitude of 779 feet. Along the south and east sides the exposed face is 12 to 15 feet high. This drops to 4 to 6 feet around the northeast and north portions. The west end shows 3 to 4 feet of rubble and cannot be far from the basalt dike. Most interesting is the quartz vein indicated on Plate 1 along the southeast edge; here is the best show of molybdenite now visible at this property. This vein is of the very irregular pinch-and-swell structure replacement type, which before mining started apparently barely reached the surface at a low point in the latter. At the southeast corner of the pond there is exposed along a nearly-vertical face of granite striking N.55° E. an irregular mass of quartz 12 feet wide by 8 feet high with a vein-like offshoot about one foot wide extending downward nearly to the surface of the pond. This latter downshoot and the lower portion of the quartz to the northeast contain platy masses of molybdenite with the plates approximately vertical. Thus for a curved length of about 4 feet and a width of 6 to 8 inches, about one-quarter of the surface area is molybdenite. Most of the quartz is barren, however, and no clues to explain the localization of the molybdenite near the base of the quartz were observed."

"Farther west near the middle of the south wall of Pit 2 there is another molybdenite-rich area in quartz. This is much like that described above; it is on the upper portion of the pit walls and is inaccessible, though easily observed from a distance of 10 to 12 feet. It is not certain that these two molybdenite occurrances are in the same quartz vein, as the latter is very irregular. However, the vein shown on the map, Plate 1, is drawn to include both, though they are not actually connected at the exposed level."

"The molybdenite-bearing quartz has a most irregular, roughly vein-like shape which averages perhaps a foot in thickness, but shows pronounced pinch-and-swell structure. The contact with the granite is both indefinite and irregular; crude apophyses of the quartz cut out into the granite. Samples can be collected varying in all degree from pure quartz, to quartz with occassional reddish feldspars, through masses of granite obviously enriched by quartz, to the normal granite. Field relations here seem definitely to show that the molybdenite-bearing quartz, at least in considerable part, has replaced the granite."

Fractures on E and W of pit strike N 40° E and dip 90°.

Pit 3. "At this position only a small amount of rock has been removed from the natural face of the cliff; perhaps a vertical height of 6 to 8 feet is involved; a narrow and shallow trench was cut to allow drainage. A 4 by 6-foot area of barren quartz is exposed along the east side of the cut. Apparently this hole was made following down this quartz lead, but results did not warrant much work. At one place a mass of quartz extending back (south) about a foot into the cliff was knocked out. The trend of this vein-like mass of quartz is essentially that of the cliff face to the west; indeed this is locally coated with remnants of quartz."

Pits 4 and 5. "Apparently these were made by the most recent important work done on the Camp Five property. They are along an irregular nearly-vertical quartz vein showing pronounced pinch-and swell structure with here and there irregular apophyses projecting sideways (especially south) into the granite. Pit 4 has a worked face about 12 feet high, with only a foot of water at the bottom. Pit 5 has a 4-foot face now exposed, but the pond is 11 feet deep. Little shows here except for some barren quartz on the south face. The shaft-like opening presumably followed along a near-vertical shoot. The quartz vein can be traced from Pit 4 to Pit 5, but it is so barren that it was excavated to only a shallow depth, and now stands as an inverted saddle between them. It is definitely offset to the south from the vein in Pit 5, as it shows up well in the cliff face southeast of Pit 5 and west of Pit 4. It here contains a few flakes of molybdenite, but these constitute but a fraction of 1 percent of the actual area of the vein outcrop. The granitic wall rock on the east side of Pit 4 has a molybdenite-bearing streak about 4 feet long and up to 8 inches in width; it is from 0 to 2 inches distant from the quartz vein. On the whole the molybdenite in the area of Pits 3, 4, and 5 is less obvious than that in the area of Pits 1, 2, and 9."

Fracturing in the granite strikes N 30° E dipping 90° and N 40° W dipping 60° NE.

At the extreme E end of Pit 5 brownish stained quartz is exposed for a width of about 18 inches. Water in the pit prevents examination of depth. This area gave a relatively high geiger count.

Pit 6. "This trench which is about 18 feet deep extends some 30 feet in a southwesterly direction into the cliff face. The southeast edge is marked by fissure quartz up to 4 inches thick standing nearly vertical and striking N 55° E. The opposite edge of the pit is similarly fracture-controlled, but its strike is about N 20° E. This quartz is apparently fine-grained and barren, as is also the quartz which is roughly parallel to the shooting (dip 20 to 25° to the south); this latter quartz, however, is only about 1/2 inch thick. Blocks in the pit show molybdenite present in irregular coarsely-crystalline quartz masses; these are not over 2 feet across; they are of the blow-out type, with very irregular boundaries that grade into granite in the same manner as is described above for Pit 8. Samples from the dump of Pit 6, which dump is used to support the east-west road at the north end of the trench, show molybdenite in quartz, as well as interrupted thick films of purple fluorite, on joint surfaces in the granite. Associated with the latter are what was taken to be small masses of arsenopyrite, locally altered to limonite. The fluorite-arsenopyrite mineralization seems not to be associated directly with the molybdenite. Occurring with the latter at this pit and elsewhere are small amounts of yellow molybdic ocher, which consists of molybdenum hydroxide carrying ferric iron."

Exposure A

About 50 feet SE of Pit 9 an outcrop near the stream shows some relatively high radioactivity over an area of 15 to 20 square feet. The rock is medium to fine grained granite mygmatite or aplite. Some red and brown staining is present on fracture surfaces.

Origin *

There are apparently two stages of quartz formation. One stage has resulted in irregular replacement veins and shoots of rather coarse grained quartz. The molybdenite (and small amounts of melybdite) are definitely associated with this quartz, though also present in the neighboring granite. This quartz while in part possibly in vertical shoots, is very definitely in near-vertical vein-like masses trending slightly north of east. It is also possible, on the basis of present tentative evidence, to consider that albitization of the granite occurred locally in connection with the introduction of this quartz. Were this confirmed, it might well be of considerable aid in further prospecting.

Fine-grained quartz occurring as fissure fillings and in thin layers roughly parallel to the shooting (dips 20 to 25° to the south) is also present. This quartz seems to be barren in general, and is quite possibly younger than the coarse grained vein quartz, though unfortunately field evidence to settle this point was not observed. Since purple fluorite occurs sparingly on such fracture surfaces, it may be of the same age. With it is associated an iron mineral, possibly arsenopyrite.

A piece of basalt found near Pit 1 contains a tiny crystal of chalcopyrite; this may be of interest in connection with the fact that the analysis of the molybdenite concentrates shipped from this property early in 1940 showed them to contain 0.04 percent copper.

Apparently the group that first worked the Camp Five property considered that the molybdenite bore some genetic relationship to the basalt. Opening of Pits 1, 8, 9, and 10 all support this contention. However, it seems clear from the other openings, especially those of Pits 4 and 5, that this is probably not the case. Nowhere was molybdenite observed in the basalt of in significant close association. Nowhere were molybdenite-quartz veins observed cutting the basalt. It is therefore tentatively concluded that the molybdenite antidated the basalt, and therefore that the latter is of no significance in connection with the actual locale of deposition of the molybdenite.

Copy:
E. J. Longyear Company
Mining Engineers
Minneapolis 2, Minn.

Inlet Land Company, Inc.
2966 No. 49th Street
Milwaukee, Wisconsin

March 14, 1951

Attention: Mr. Otto B. Brumsted, President

Gentlemen:

We wish to acknowledge and thank you for your letter of March 7, also for the enclosed drilling data sheet that you so kindly completed.

After reviewing the information presented on the data sheet and in accordance with your letter of March 6, we are pleased to submit below our proposal for your contemplated drilling program which is to be carried out in Marinette County, Wisconsin.

We understand that the work as now contemplated will consist of the diamond core drilling of approximately 15 vertical holes in which it is estimated the depth will vary from 100 to 150 feet, that the minimum total footage will be 1,000 feet and that the material to be penetrated will consist entirely of granite and quartz; furthermore, that no overburden exists in the area to be drilled, and that all holes will start in bedrock. We also understand that the property on which the drilling is to be performed is accessible via a surfaced highway, that no road building will be required on the property, and that water is obtainable within 300 feet of any proposed drill hole location.

For this work, we propose to furnish one Longyear gasoline-powered diamond core drill together with the necessary accessory equipment required to accomplish the work as now planned. We further propose to operate the rig on a one-shift basis and to drill EX size (1½" diameter) hole, recovering core approximately 7/8" in diameter.

We will carry public liability insurance covering personal injury and property damage; Workmen's Compensation, Old Age Benefit, Unemployment and any other insurance on our employees required by state or federal laws; also, all-risk insurance on the drilling equipment protecting against loss by theft, fire, flood, land-slides and other similar hazards. Certificates showing the coverage refered to will be furnished if desired.

Based upon the conditions as outlined above, we are pleased to quote as follows:

<u>Diamond core drilling</u>
0 to 150 feet in depth, measured from
the collar of the hole
EX size (core approx. 7/8" in diameter - $8.50 per foot

Reaming and Casing, if required.....$3.50 per foot

Delays for your convenience or for which
you are responsible .....$6.00 per hour

Cores are to be delivered to your representative at the drill in core boxes furnised by you.

Statements will be rendered as promptly as possible after the first of each month.

We very much appreciate the opportunity of considering this work and, if awarded the contract, we are in position to commence work immediately after the spring break-up which we estimate will be approximately May 15.

In regard to your request for information concerning the geological services offered by E. J. Longyear Company, we are referring this matter to Dr. D. M. Davidson, our Chief Geologist. Dr. Davidson is out of the city at the present time but it is expected that he will return the first part of next week, so you may expect to hear from him shortly thereafter.

Yours very truly,

E. J. LONGYEAR COMPANY

W. Davenport
Treasurer & General Manager

MJG:LT

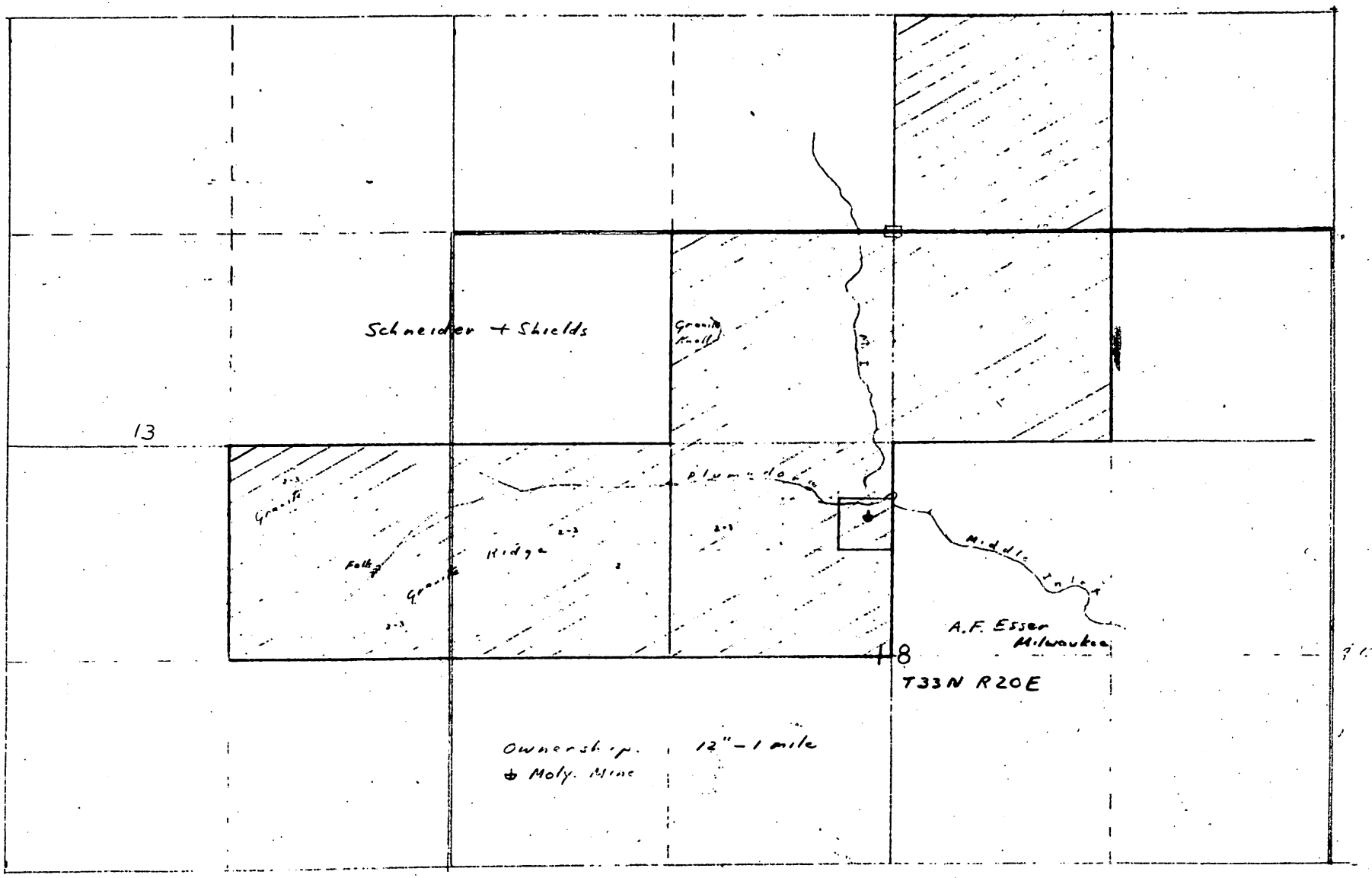
Accepted:

Inlet Land Company, Inc.

_____

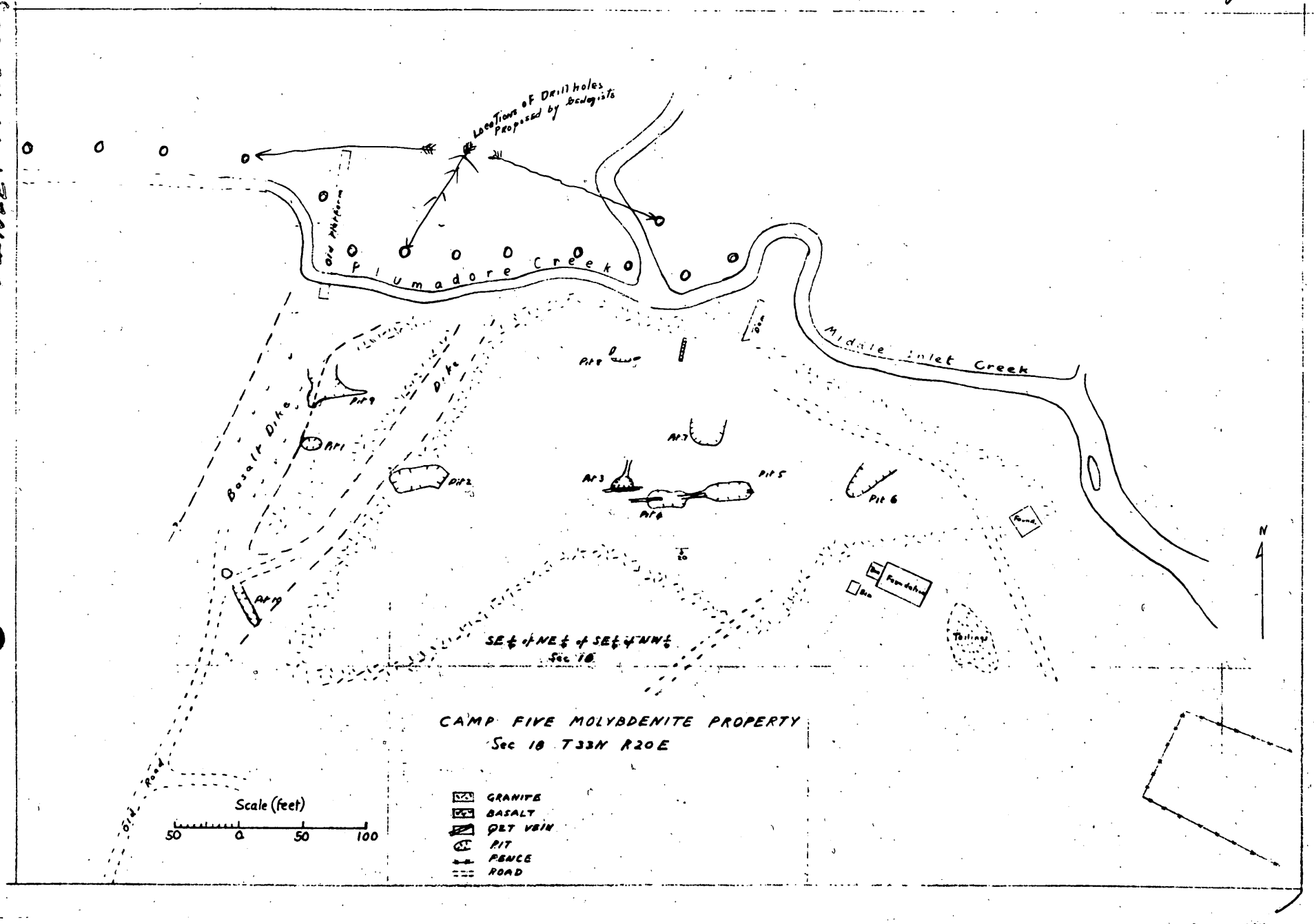
DMEA-2934
INLET LAND CO., INC.

Map No. 2



DNEA - 2884
INLET LAND CO., INC.

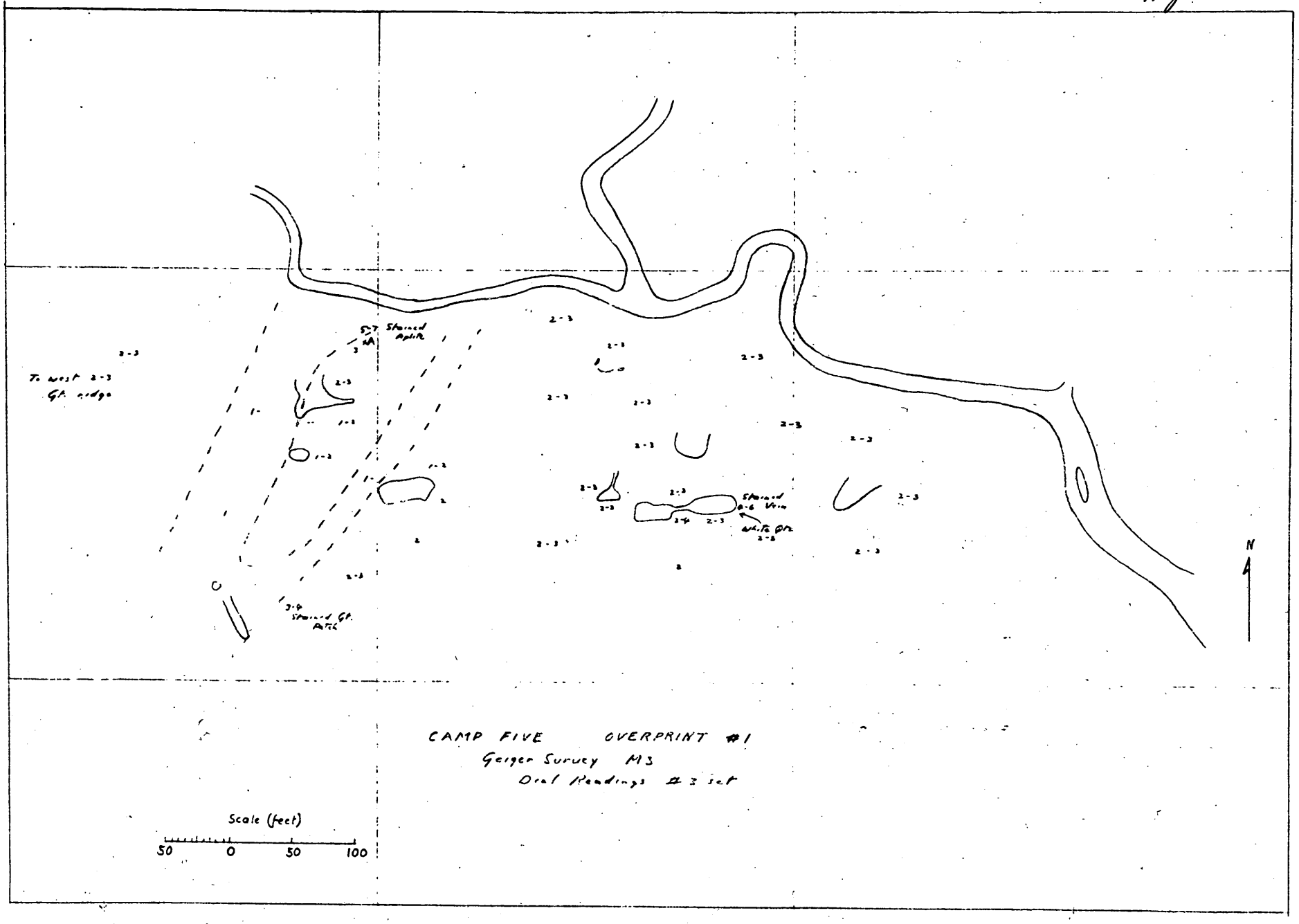
Map no ③ 3



Map No. 4

4

OMEA-2834
INTERLAND CO. INC.



CAMP FIVE OVERPRINT #1
Geiger Survey M3
Oral Readings #3 set

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

Not To Be Filled in by Applicant

Docket No. DMEA-2334
Metal or Mineral
Date Received 1-21-52
Amount $
Participation (Government %)

Inlet Land Company Inc.
2966 North 49th St.
Milwaukee, (10) Wisconsin

Name and address of applicant

Otto B. Brumsted
2966 North 49th St.
Milwaukee, (10), Wis.

Date November 10th, 1951

If you have already filed MF-100, give date filed _____, type of assistance requested _____,

DMA Docket Number (if available) _____

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

1. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

   (*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

   (*c*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

   NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

2. (*a*) What metals or minerals do you expect to find?

   (*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

11. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Inlet Land Company Inc.
(Name of company)

By Otto B. Brumsted Pres.
(Signature of authorized official)

November 10, 1951
(Date)

Otto B. Brumsted President
(Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—64067-2

Milwaukee, Wisconsin
2966 North 49th St.
11-10-51

Defense Minerals Adm.
Dept. of Interior
Washington, D. C.

Gentlemen:

In compliance with your instructions on form MF - 103 for securing government assistance in the exploration of minerals I submit the following information, See Exhibit A - Phase 1 and 2.

Question No. 1

A. Approx. 240 acres including abandoned Molybdenum Mine. See enclosed "Index Maps No. 1 and No. 2."

B. We are the owners of the property including mineral rights.

C. This land is located in Marinette County in the state of Wisconsin as follows:

SW 1/4 - SE 1/4 of Sec. 7 - Township 33 - N of Range 20 E.
S 1/2 - NW 1/4 of Sec. 18 - Township 33 - N of Range 20 E.
NE 1/4 - NW 1/4 of Sec. 18 - Township 33 - N of Range 20 E.
NW 1/4 - NE 1/4 of Sec. 18 - Township 33 - N of Range 20 E.
SE 1/4 - NE 1/4 of Sec. 13 - Township 33 - N of Range 19 E.

Question No. 2

A. Molybdenum and possibly uranium.

B. The following geologists have recommended diamond drilling:

Mr. R. G. Comer, Waukesha, Wisconsin, see enclosed geologist reports No. 1 and No. 2 and maps No. 3 and 4.
Professor Bean, State Geologist, University of Wisconsin, Madison Wisconsin.
Mining Engineer E. J. Martin, U. S. Bureau of Mines, Minn., Minn.

Question No. 3

A. Two thousand (2,000) feet of diamond core drilling.
Total cost of project ($29,290.00) Twenty nine thousand, two hundred ninety dollars.

B. Work can be started as soon as drilling contracts can be arranged (estimated 2 weeks) and completed in 4 months thereafter.

Question No. 4

See map No. 3

Question No. 5

No existing facilities, buildings, etc.

Question No. 6.

Building of office, tool house, and shelter size 20 ft. by 30 ft. on exploration site. Cost $3,000.00. Lumber, millwork, hardware, and Paint $1,800.00. Labor $1,200.00.

Question No. 7

Contract for drilling equipment to diamond drill project, from "E. J. Longyear Co., Minn., Minn." At cost of $8.50 per foot. Refer to enclosed bid by E. J. Longyear Co. Estimated cost of drilling 2,000 feet vertical $17,000.00. 200 ft. casing and reaming at $3.50 per foot. - $700.00. See exhibit A - phase 1 and 2. Purchase of core splitter. - $90.00.

Question No. 8

Estimated constructural cost of bulldozing, removing overburden, and building roads for drilling machine $1,200.00, see exhibit A - phase 1 and 2.

Estimated cost of Supervisors to be present at all times during drilling operations. Labor and Supervision: 1 superintendent in charge of project, approximately 80 days at $25.00 per day. $2,000.00. 1 geologist, approximately 8 days at $75.00 per day. $600.00. Subistence allowance 1,000.00. Transportation allowance $400.00. 1 or 2 carpenters at $1.75 to $2.50 per hour. 2 or 3 carpenter helpers at $1.25 to $1.50 per hour. See exhibit A - phase 1 and 2.

Question No 9

Miscellaneous Costs: Core boxex, stationary $600.00. General Supervision-Bookkeeping, vouchers, maps etc., of employees allocated on basis of time spent on the project $400.00. Rehabilitation and repairs, No cost.

Miscellaneous other costs: Assaying, 400 samples at $2.50. $1,000.00. Comp. ins., public liability ins. $200.00. Contingency $2,000.00.

Question No. 10

A. We are prepared to invest $14,645.00 in project. B. Yes.

Question No. 11 -

Contingency amount listed in question No. 9 to cover possible angle drilling costs and any unforseen costs.

Signed:
Inlet Land Co., Inc.
Otto B. Brumsted
Otto B. Brumsted, President

EXHIBIT "A"

The exploratory work to be performed under this contract will consist of two parts, Phase 1 and Phase 2. Phase 1 will commence within two weeks after the signing of the contract. Phase 2 will depend upon the outcome of Phase 1 and will be commenced only upon written approval of the Government.

Phase 1

Phase 1 will consist of the erection of a combination office-tool house and shelter, and drilling 1,000 feet of core-drill holes. The holes are to be located and directed under the supervision of a competent geologist. Each hole will be from 100 feet to 150 feet in depth. The operator is to carefully sample the core and sludge in accordance with conventional and approved sampling practices and will submit a complete report of the results obtained to the Government upon completion of the project. The estimated cost of Phase 1 is as follows:

Fixtures and improvements		$3,000
One combination office, shelter and tool house 20' X 30' built in sections and bolted together to assure greater resale value.		
cost of lumber, hardware, mill-work and paint	$1,800.00	
cost of labor	1,200.00	
total cost	$3,000.00	
Operating equipment		
Operating equipment to be purchased:		
1 core splitter		90
Operating equipment to be rented:		
1 D-8 cat bulldozer, approximately 5 days at $14.00 per hour. (This rate includes operator, fuel, and upkeep of equipment)		600
1,000 feet of drilling by contract at $8.50 per foot		8,500
100 feet of reaming and casing (Contract to be approved by Government)		350
Labor and supervision		
1 superintendent in charge of project and sampling at $25.00 per day, 40 days		1,000
1 geologist, approximately 4 days at $75.00 per day		300
1 or 2 carpenters at $1.75 to $2.50 per hour		---
2 or 3 carpenter helpers at $1.25 to $1.50 per hour		---

Subsistence allowance	500
Transportation allowance	200
Miscellaneous Costs	
Core boxes, stationary	$ 300
General Supervision	200
Bookkeeping, vouchers, maps, etc., of employees allocated on basis of time spent on the project	
Rehabilitation and Repairs	None
Miscellaneous other costs	
Assaying, 200 samples at $2.50	500
Comp. ins., public liability ins.	100
Contingency	1,000

Phase 2

Fixtures and improvements	None
Operating Equipment	
Equipment to be purchased	None
Equipment to be rented	None
Equipment to be supplied	None
1,000 feet of diamond drilling, approx.	$8,500
100 feet of casing, approximate	350
(This work to be contracted and contract to be approved by Government)	
Labor and Supervision	
1 superintendent in charge of project, approximately 40 days at $25.00 per day	1,000
1 geologist, approximately 4 days at $75.00 per day	300
Subsistence allowance	500
Transportation allowance	200
General supervision, bookkeeping and vouchers; wages of employees allocated on basis of time spent on project	200
Rehabilitation and repairs	None
200 samples at approximately $2.50 each	500
Comp. ins., public liability ins.	100
Contingency	1,000
TOTAL	$29,290.00
	(Total amount of loan)

GEOLOGIST REPORT # 1
April 30, 1951

On the 15th , 16th and 17th of April, 1951, a general examination was made of a two hundred and forty acre tract of land in Marinette county including the Camp Five Molybdenum prospect and other mineralized exposures.

Mr. Otto B. Brumsted of Milwaukee spent Sunday, April 15 in the area and showed the location of the six forties in question. He also pointed out the various locations where his work had indicated radioactivity, and one area where mineralized rock had been found and assayed. Mr. Brumsted knows the boundaries of the area thoroughly and has marked them with blazed lines and pickets where necessary. These lines were run by compass and are accurate enough for present purposes.

A general summary of findings follows:

Index

1. Location and general description.
2. Enclosures.
3. Transportation.
4. General geology.
5. Origin of ore.
6. Radioactivity.
7. Recommendations.

1. Location and general description.

The six contiguous forty acre tracts are located in Marinette county, Wisconsin in an area consisting mainly of granite ridges rising 100 to 200 feet above sandy plains. Near the center of the east line of the most southeasterly of these forties several showings of molybdenum bearing quartz veins are exposed in test pits and trenches. These pits extend onto the adjacent forty to the east owned by A. F. Esser of Milwaukee. Near the center of the west line of the forty north of these mine openings a granite knob shows some pyrite mineralization on it's east flank. Exact locations are shown on maps 1, 2, and 3.

2. Enclosures.

The following maps and enclosures are included:

1. Index map. (County Highway Dept.)
2. Ownership map. (R.G.C.)
3. Camp Five Molybdenum Prospect. (R.G.C.)
4. Radioactivity map. (R.G.C.)
5. General geology. (R.G.C.)

3. Transportation.

The area is readily accessible by road from U. S. Highway 141. Connecting roads are blacktop and sand. Railroad facilities are available at Middle Inlet and Crivitz. A privately operated airport is maintained three miles southwest of Crivitz.

4. General Geology.

"The district is underlain by granite with normal variation. It has intruded greenstones which outcrop in several sections and which may be found as inclusions quite extensively. Locally many of the granite variations can be attributed directly to the influence of the greenstone but others such as the porphyritic types are such as are to be found in any area of extensive granite outcropping. The structural expression of the granite, granite gneiss, and greenstone is predominately E-W.

Superimposed on this general picture is a north-east south-west structural disburbance revealed in three recognized shear zones. These shears are marked in the field by an excess of pegmatoid intrusion, by the customary pneumotelytic effects such as epidote, chlorite and quartz veinlets, by large quartz veins but more especially by extensive migmatization which is the surest criterion. All deposits of economic interest which I saw or of which I heard are located along these shear zones. It is apparent that the shears have been channels for both solutions and for intrusions."

The molybdenum deposits of the Camp Five property are found in the north flank of the east-west trending ridge which rises about 100 feet above a sandy plain lying to the north. They are bounded on the west by a northeast trending dike basic in character and by a glacial fill in the valley to the east. About 800 feet southeast of pit #6 (Map 3) granite outcrops are present. Granite extends from the basic dike west and is cut by several other dikes, one outcropping about 1,200 feet west of pit #9 and another where Plumadore Creek swings northeast.

The granite near the deposits at Camp Five is high in quartz content, low in ferromagnesian minerals and moderately coarse and even grained. Where molybdenum is present siliceous pegmatites cut the granite as veins of pinch and swell type, blowouts and apophyses. These vary from irregular quartz veins to quartz feldspar pegmatitic areas in the granite.

Where veins are linear they strike approximately east-west and are roughly vertical. The granite exhibits prominent sheeting dipping to the south about 20 degrees. Near the pits considerable NW and NE fracturing is present. Many of the fracture surfaces are coated with epidote, chlorite and in one case (pit #9) granular mobydenum.

A detailed description of pits follows.*

5. Origin of Ore.

From the fact that the granite is low in ferromagnesians and high in quartz and sodic feldspars it can be argued that the basalt dikes were a lamprophyric product of the granite magma and were emplaced late in the cooling history of the granite when some disburbance took place. The molydenum bearing pegmatite and quartz were deposited later in the fractured area of the granite east of the lamprophyric dike. These dikes and the associated aplites locally contain a high percentage of pyrite and minor amounts of copper, zinc lead, gold and silver.

6. Radioactivity.

The granite area was checked with a model M-3 geiger counter (Map 4). A few anomalous readings were found near the molybdenum area. In all cases observed high readings were due to coatings of somewhat radioactive minerals on fracture surfaces or local concentrations of radioactive minerals in the granite or aplites. Readings of similar or higher intensity in analysed samples of granite from further north indicate a content of U_3O_8 equivalent of less than one tenth of one percent - - - and this in very small areas of 1 to 20 square feet. No deep red staining common to many uranium bearing deposits was observed. No visible uranium minerals were found.

7. Recommendations.

The molybdenum content of the granite and pegmatites at Camp Five is too low to warrant mining. * Pegmatite deposits of this type are commonly irregular in shape and spotty in values. However, the fact that molybdenum is present in this area of fractured granite may point to the presence of similar or stronger mineralization under the valley - east of the extension of the basalt dike and north of the creek. There is no evidence of the identity of the underlying rock. Test pitting for this information would be impractical because of the high water table near the creek. Drilling would disclose it.

No commercial uranium mineralization was observed.

Very truly yours,

R. G. Comer
Geologist

Geologic Setting *

The Camp Five property is in an area of pre-Cambrian granite according to the map in U. S. Geol. Survey Prof. Paper 184, through this is definitely indicated as Killarney near Niagara. Actually the molybdnite deposits are in quite different rocks at the two localities.

At Camp Five the deposits are found in the north (steep slope) flank of an east-west trending ridge that rises nearly 100 feet above Middle Inlet and the tributary Plumadore Creek (see Plate 1); farther north there are no outcrops for some distance -- simply a sandy plain. The south slope of the hill is well mantled with a heavy cover of vegetation; no exploration was made south of the old road indicated in this area on Plate 1. The west end of the property is marked by a pronounced north-trending dry valley underlain by basalt from which fresh samples are readily collected in the prospect pits. West of this valley, granite is found for some distance but no detailed study was made. What is a likely branch of this main basalt dike strikes NNE, just missing the west edge of Pit 2. About 700 feet to the southeast of the boundary shown near the mill on Plate 1, there is another granite outcrop; this is at the east end of the fenced field, part of which appears along the lower right edge of the detailed map on Plate 1.

A Camp Five the country rock in which the molybdenite occurs is a medium course-grained pinkish - to brownish-red granitic rock. It was assumed to be a true granite until a thin section cut from a molybdenite-bearing sample, collected from the loose pieces lying on the granite just east of Pit 1, showed it to consist essentially of albite and quartz, with a variable portion of the albite replaced by or altered to chlorite, and a minor amount of muscovite. In another sample of rock free from molybdenite (40 feet south of Pit 4, see Plate 1) more than half of the feldspar was relatively fresh orthoclase, and there was an increased percentage of muscovite. This latter rock might be called a granodiorite, or else a somewhat albitized granite. A sample taken from the Middle Inlet quarry (1.8 miles SSE of the Camp Five property, see Index Map on Plate 1) appears from inspection to be a medium coarse grained biotite granite.

Molybdenite Deposits *

The molybdenite is found in quartz veins or disseminated in the granite. Some quartz veins are narrow (1/4 inch or so) sharp-walled fissure fillings, either roughly parallel to the sheeting (dips 20-25° to the south), or nearly vertical. These in general do not carry molybdenite in significant quantities. This mineral is mainly found in or near replacement quartz veins with pronounced pinch-and-swell structure (from 0 to 20 inches thick) and very indefinite walls. They may have formed by enlargement of some of the fracture-filling type of quartz vein by latter deposition of quartz which replaced the granite. In places they seem to be simply irregular masses or blowouts of quartz but the shaft-like openings of some of the pits on the property indicate that at least in part they may have been more or less vertical shoots. The most pronounced veins are the vertical ones

indicated on Plate 1 joining Pits 4 and 5; also at the southeast edge of Pit 2. Pit 3 is on a minor vein of similar strike (S 85°W) along the north face of a 15-foot cliff. The trend of these veins is roughly the same as the strike of the sheeting of the granite.

Ten pits or trenches have been indicated by numbers on the detailed map of Plate 1. These numbers have no sequential significance; it was not possible to ascertain enough of the history of the deposit to find in what order the pits were developed.

The remainder of this section is devoted to a description of the various pits.

Pit 8. "This may have been the first opening made on the property. Only a little material was removed, perhaps 100 square feet for a depth of 3 or 4 feet, and this was mainly obtained by blasting from the steep side of the hill. Most interesting is the presence of basalt stringers up to a foot thick cutting the granite here. Only a little molybdenite was seen here; this was in a small quartz replacement made in the granite, a foot or so from the basalt."

The rubble from the work done here is mixed granite and basalt. Stringers of basalt seem to cut the granite irregularly. Occasional patches of molybdenum occur in the granite. Much of the dike material is brown stained by oxidized pyrite.

Pit 7. This consists of a trench which was run south into the hillside so that a 15-foot high face was worked at the south end. This may have followed some sort of a vein, but if so it was short, as it does not show the back (south) face at the present time. The pond is some 10 feet deep, indicating that a shaft-like opening was followed down at the back of the trench; this may have been along a molybdenite-bearing quartz shoot. All outcrops on the sides of this opening as well as dump samples show granite; some of the latter contain quartz-enriched portions carrying flakes of molybdenite. Presumably the better pieces from this as well as all other dumps and their openings have been removed. Rock masses of this dump do not show much quartz; there is some vuggy limonitized pyrite; also some molybdenite was seen along slippage planes in the granite."

Sheeting is well developed in the granite exposed in this pit. The dip of the sheeting is about 20° to the south. Well developed fractures strike N 80° E dipping 90° and N 40° W dipping 70° to NE.

Pit 9. "This pit seems to have started as a trench heading south along the basalt-granite contact. This encountered a fracture-surface in the granite dipping steeply (85°) to the north which was covered with very fine granular molybdenite varying from nothing to over 1/2-inch in thickness. This was followed to the east by the trench indicated on Plate 1; along the north side of this cut near the west end there is an area of the granite about 5 to 1 feet in which flakes of molybdenite are readily found; these perhaps constitute 1 to 2 percent of this area. Some of the blocks of granite from the east end of this trench show fracture surfaces coated with irregular thick films of purple fluorite."

The contact between the granite and the basic dike is well exposed in the west end of this pit striking N15° E and dipping 90°. A prominent fracture surface in the pit strikes N 70° E and dips 80° to the NW. Some NS fracturing is present.

Pit 1. "Here the basalt-granite contact is also well exposed; it is vertical or dips very steeply to the west. This pit is a shaft-like opening which has an 18-foot face on its east side. A number of very irregular quartz masses of the "blowout" type appear in the pit walls; the largest one is 3 by 1 feet. Only one of these (10feet up on the east side) shows molybdenite (two small flakes) at the present time. One small flake of this mineral was also seen in the quartz-enriched granite on the west side of the pit 3 feet above the base and 4 inches from the basalt. Loose samples lying on the granite on the east side of this pit (and probably from this pit) are excellent to show molybdenite in quartz-enriched granite which has suffered pronounced chloritization of the plagioclase feldspar."

Pit 2. "This pit consists of a crudely-rectangular opening now filled with water at least 20 feet deep whose surface is at an altitude of 779 feet. Along the south and east sides the exposed face is 12 to 15 feet high. This drops to 4 to 6 feet around the northeast and north portions. The west end shows 3 to 4 feet of rubble and connot be far from the basalt dike. Most interesting is the quartz vein indicated on Plate 1 along the southeast edge; here is the best show of molybdenite now visible at this property. This vein is of the very irregular pinch-and-swell structure replacement type, which before mining started apparently barely reached the surface at a low point in the latter. At the southeast corner of the pond there is exposed along a nearly-vertical face of granite striking N.55° E. an irregular mass of quartz 12 feet wide by 8 feet high with a vein-like offshoot about one foot wide extending downward nearly to the surface of the pond. This latter downshoot and the lower portion of the quartz to the northeast contain platy masses of molybdenite with the plates approximately vertical. Thus for a curved length of about 4 feet and a width of 6 to 8 inches, about one-quarter of the surface area is molybdenite. Most of the quartz is barren, however, and no clues to explain the localization of the molybdenite near the base of the quartz were observed."

"Farther west near the middle of the south wall of Pit 2 there is another molybdenite-rich area in quartz. This is much like that described above; it is on the upper portion of the pit walls and is inaccessible, though easily observed from a distance of 10 to 12 feet. It is not certain that these two molybdenite occurrances are in the same quartz vein, as the latter is very irregular. However, the vein shown on the map, Plate 1, is drawn to include both, though they are not actually connected at the exposed level."

"The molybdenite-bearing quartz has a most irregular, roughly vein-like shape which averages perhaps a foot in thickness, but shows pronounced pinch-and-swell structure. The contact with the granite is both indefinite and irregular; crude apophyses of the quartz cut out into the granite. Samples can be collected varying in all degree from pure quartz, to quartz with occassional reddish feldspars, through masses of granite obviously enriched by quartz, to the normal granite. Field relations here seem definitely to show that the molybdenite-bearing quartz, at least in considerable part, has replaced the granite."

Fractures on E and N of pit strike N 40° E and dip 90°.

Pit 3. "At this position only a small amount of rock has been removed from the natural face of the cliff; perhaps a vertical height of 6 to 8 feet is involved; a narrow and shallow trench was cut to allow drainage. A 4 by 6-foot area of barren quartz is exposed along the east side of the cut. Apparently this hole was made following down this quartz lead, but results did not warrant much work. At one place a mass of quartz extending back (south) about a foot into the cliff was knocked out. The trend of this vein-like mass of quartz is essentially that of the cliff face to the west; indeed this is locally coated with remnants of quartz."

Pits 4 and 5. "Apparently these were made by the most recent important work done on the Camp Five property. They are along an irregular nearly-vertical quartz vein showing pronounced pinch-and swell structure with here and there irregular apophyses projecting sideways (especially south) into the granite. Pit 4 has a worked face about 12 feet high, with only a foot of water at the bottom. Pit 5 has a 4-foot face now exposed, but the pond is 11 feet deep. Little shows here except for some barren quartz on the south face. The shaft-like opening presumably followed along a near-vertical shoot. The quartz vein can be traced from Pit 4 to Pit 5, but it is so barren that it was excavated to only a shallow depth, and now stands as an inverted saddle between them. It is definitely offset to the south from the vein in Pit 5, as it shows up well in the cliff face southeast of Pit 5 and west of Pit 4. It here contains a few flakes of molybdenite, but these constitute but a fraction of 1 percent of the actual area of the vein outcrop. The granitic wall rock on the east side of Pit 4 has a molybdenite-bearing streak about 4 feet long and up to 8 inches in width; it is from 0 to 2 inches distant from the quartz vein. On the whole the molybdenite in the area of Pits 3, 4, and 5 is less obvious then that in the area of Pits 1, 2, and 9."

Fracturing in the granite strikes N 30° E dipping 90° and N 40° W dipping 60° NE.

At the extreme E end of Pit 5 brownish stained quartz is exposed for a width of about 18 inches. Water in the pit prevents examination of depth. This area gave a relatively high geiger count.

Pit 6. "This trench which is about 18 feet deep extends some 30 feet in a southwesterly direction into the cliff face. The southeast edge is marked by fissure quartz up to 4 inches thick standing nearly vertical and striking N 55° E. The opposite edge of the pit is similarly fracture-controlled, but its strike is about N 20° E. This quartz is apparently fine-grained and barren, as is also the quartz which is roughly parallel to the shooting (dip 20 to 25° to the south); this latter quartz, however, is only about 1/2 inch thick. Blocks in the pit show molybdenite present in irregular coarsely-crystalline quartz masses; these are not over 2 feet across; they are of the blow-out type, with very irregular boundaries that grade into granite in the same manner as is described above for Pit 8. Samples from the dump of Pit 6, which dump is used to support the east-west road at the north end of the trench, show molybdenite in quartz, as well as interrupted thick films of purple fluorite, on joint surfaces in the granite. Associated with the latter are what was taken to be small masses of arsenopyrite, locally altered to limonite. The fluorite-arsenopyrite mineralization seems not to be associated directly with the molybdenite. Occurring with the latter at this pit and elsewhere are small amounts of yellow molybdic ocher, which consists of molybdenum hydroxide carrying ferric iron."

Exposure A

About 50 feet SE of Pit 9 an outcrop near the stream shows some relatively high radioacitivity over an area of 15 to 20 square feet. The rock is medium to fine grained granite mygmatite or aplite. Aome red and brown staining is present on fracture surfaces.

Origin *

There are apparently two stages of quartz formation. One stage has resulted in irregular replacement veins and shoots of rather coarse grained quartz. The molybdenite (and small amounts of melybdite) are definitely associated with this quartz, though also present in the neighboring granite. This quartz while in part possibly in vertical shoots, is very definitely in near-vertical vein-like masses trending slightly north of east. It is also possible, on the basis of present tentative evidence, to consider that albitization of the granite occurred locally in connection with the introduction of this quartz. Were this confirmed, it might well be of considerable aid in further prospecting.

Fine-grained quartz occurring as fissure fillings and in thin layers roughly parallel to the shooting (dips 20 to 25° to the south) is also present. This quartz seems to be barren in general, and is quite possibly younger than the coarse grained vein quartz, though unfortunately field evidence to settle this point was not observed. Since purple fluorite occurs sparingly on such fracture surfaces, it may be of the same age. With it is associated an iron mineral, possibly arsenopyrite.

A piece of basalt found near Pit 1 contains a tiny crystal of chalcopyrite; this may be of interest in connection with the fact that the analysis of the molybdenite concentrates shipped from this property early in 1940 showed them to contain 0.04 percent copper.

Apparently the group that first worked the Camp Five property considered that the molybdenite bore some genetic relationship to the basalt. Opening of Pits 1, 8, 9, and 10 all support this contention. However, it seems clear from the other openings, especially those of Pits 4 and 5, that this is probably not the case. Nowhere was molybdenite observed in the basalt of in significant close association. Nowhere were molybdenite-quartz veins observed cutting the basalt. It is therefore tentatively concluded that the molybdenite antidated the basalt, and therefore that the latter is of no significance in connection with the actual locale of deposition of the molybdenite.

DIAMOND DRILLING
SHAFT SINKING
GEOLOGICAL AND MINING REPORTS
MANUFACTURE OF DIAMOND DRILLS AND SUPPLIES

E. J. LONGYEAR COMPANY
MINING ENGINEERS
GENERAL OFFICE
FOSHAY TOWER
MINNEAPOLIS 2, MINNESOTA

March 14, 1951

Inlet Land Company, Inc.
2966 No. 49th Street
Milwaukee, Wisconsin

Attention: Mr. Otto B. Brumsted, President

Gentlemen:

We wish to acknowledge and thank you for your letter of March 7, also for the enclosed drilling data sheet that you so kindly completed.

After reviewing the information presented on the data sheet and in accordance with your letter of March 6, we are pleased to submit below our proposal for your contemplated drilling program which is to be carried out in Marinette County, Wisconsin.

We understand that the work as now contemplated will consist of the diamond core drilling of approximately 15 vertical holes in which it is estimated the depth will vary from 100 to 150 feet, that the minimum total footage will be 1,000 feet and that the material to be penetrated will consist entirely of granite and quartz; furthermore, that no overburden exists in the area to be drilled, and that all holes will start in bedrock. We also understand that the property on which the drilling is to be performed is accessible via a surfaced highway, that no road building will be required on the property, and that water is obtainable within 300 feet of any proposed drill hole location.

For this work, we propose to furnish one Longyear gasoline-powered diamond core drill together with the necessary accessory equipment required to accomplish the work as now planned. We further propose to operate the rig on a one-shift basis and to drill EX size (1½" diameter) hole, recovering core approximately 7/8" in diameter.

We will carry public liability insurance covering personal injury and property damage; Workmen's Compensation, Old Age Benefit, Unemployment and any other insurance on our employees required by state or federal laws; also, all-risk insurance on the drilling equipment protecting against loss by theft, fire, flood, land-slides and other similar hazards. Certificates showing the coverage referred to will be furnished if desired.

Based upon the conditions as outlined above, we are pleased to quote as follows:

<u>Diamond core drilling</u>
0 to 150 feet in depth, measured from
the collar of the hole
EX size (core approx. 7/8" in diameter - $8.50 per foot

Reaming and Casing, if required ..... $3.50 per foot

Delays for your convenience or for which
you are responsible ..... $6.00 per hour

Cores are to be delivered to your representative at the drill in core boxes furnished by you.

Statements will be rendered as promptly as possible after the first of each month.

We very much appreciate the opportunity of considering this work and, if awarded the contract, we are in position to commence work immediately after the spring break-up which we estimate will be approximately May 15.

In regard to your request for information concerning the geological services offered by E. J. Longyear Company, we are referring this matter to Dr. D. M. Davidson, our Chief Geologist. Dr. Davidson is out of the city at the present time but it is expected that he will return the first part of next week, so you may expect to hear from him shortly thereafter.

Yours very truly,

E. J. LONGYEAR COMPANY

W. Davenport
Treasurer & General Manager

MJG:LT

ACCEPTED:

INLET LAND COMPANY, INC.

_____

Map No. 2

Map no 3

Locations of Drill holes proposed by Geologists
Old Platform
Pit 9
Pit 1
Pit 2
Pit 3
Pit 4
Pit 5
Pit 6
Pit 7
Pit 10
Creek
Foundation
Road
SE¼ of NE¼ of SE¼ of NW¼
Sec 18
CAMP FIVE MOLYBDENITE PROPERTY
Sec 18 T 33N R 20E
Scale (feet)
50 0 50 100
GRANITE
BASALT
QRT VEIN
PIT
FENCE
ROAD

Map No. 4

To west 2-3
Gt. ridge
5-7 Stained
Apple
2-3
Stained
6-6 Verm
White Gr
2-3
N
Scale (feet)
50
0
50
100

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

Not To Be Filled in by Applicant

Docket No. DMEA-2334
Metal or Mineral Moly & Uran
Date Received 1-21-52
Amount $ 29,290.00
Participation (Government %)

Inlet Land Company Ind.
2966 North 49th St.
Milwaukee, (10) Wisconsin

Otto B. Brumsted
2966 North 49th St.
Milwaukee, (10) Wisconsin

Name and address of applicant

Date November 10, 1951

If you have already filed MF-100, give date filed _____, type of assistance requested _____,

DMA Docket Number (if available) _____

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

1. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

   (*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

   (*c*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

   NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

2. (*a*) What metals or minerals do you expect to find?

   (*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

11. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Inlet Land Company Inc.
(Name of company)

By Otto B. Brumsted Pres.
(Signature of authorized official)

November 10, 1951
(Date)

Otto B. Brumsted President
(Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—64067-2

Milwaukee, Wisconsin
2966 North 49th St.
11-10-51

Defense Minerals Adm.
Dept. of Interior
Washington, D. C.

Gentlemen:

In compliance with your instructions on form MF - 103 for securing government assistance in the exploration of minerals I submit the following information, See Exhibit A - Phase 1 and 2.

Question No. 1

A. Approx. 240 acres including abandoned Molybdenum Mine. See enclosed "Index Maps No. 1 and No. 2."

B. We are the owners of the property including mineral rights.

C. This land is located in Marinette County in the state of Wisconsin as follows:

SW 1/4 - SE 1/4 of Sec. 7 - Township 33 - N of Range 20 E.
S 1/2 - NW 1/4 of Sec. 18 - Township 33 - N of Range 20 E.
NE 1/4 - NW 1/4 of Sec. 18 - Township 33 - N of Range 20 E.
NW 1/4 - NE 1/4 of Sec. 18 - Township 33 - N of Range 20 E.
SE 1/4 - NE 1/4 of Sec. 13 - Township 33 - N of Range 19 E.

Question No. 2

A. Molybdenum and possibly uranium.

B. The following geologists have recommended diamond drilling:

Mr. R. G. Comer, Waukesha, Wisconsin, see enclosed geologist reports No. 1 and No. 2 and maps No. 3 and 4.
Professor Bean, State Geologist, University of Wisconsin, Madison Wisconsin.
Mining Engineer E. J. Martin, U. S. Bureau of Mines, Minn., Minn.

Question No. 3

A. Two thousand (2,000) feet of diamond core drilling.
Total cost of project ($29,290.00) Twenty nine thousand, two hundred ninety dollars.

B. Work can be started as soon as drilling contracts can be arranged (estimated 2 weeks) and completed in 4 months thereafter.

Question No. 4

See map No. 3

Question No. 5

No existing facilities, buildings, etc.

Question No. 6.

Building of office, tool house, and shelter size 20 ft. by 30 ft. on exploration site. Cost $3,000.00. Lumber, millwork, hardware, and Paint $1,800.00. Labor $1,200.00.

Question No. 7

Contract for drilling equipment to diamond drill project, from "E. J. Longyear Co., Minn., Minn." At cost of $8.50 per foot. Refer to enclosed bid by E. J. Longyear Co. Estimated cost of drilling 2,000 feet vertical $17,000.00. 200 ft. casing and reaming at $3.50 per foot. - $700.00. See exhibit A - phase 1 and 2. Purchase of core splitter. - $90.00.

Question No. 8

Estimated constructural cost of bulldozing, removing overburden, and building roads for drilling machine $1,200.00, see exhibit A - phase 1 and 2.

Estimated cost of Supervisors to be present at all times during drilling operations. Labor and Supervision: 1 superintendent in charge of project, approximately 80 days at $25.00 per day. $2,000.00. 1 geologist, approximately 8 days at $75.00 per day. $600.00. Subistence allowance 1,000.00. Transportation allowance $400.00. 1 or 2 carpenters at $1.75 to $2.50 per hour. 2 or 3 carpenter helpers at $1.25 to $1.50 per hour. See exhibit A - phase 1 and 2.

Question No 9

Miscellaneous Costs: Core boxex, stationary $600.00. General Supervision-Bookkeeping, vouchers, maps etc., of employees allocated on basis of time spent on the project $400.00. Rehabilitation and repairs, No cost.

Miscellaneous other costs: Assaying, 400 samples at $2.50. $1,000.00. Comp. ins., public liability ins. $200.00. Contingency $2,000.00.

Question No. 10

A. We are prepared to invest $14,645.00 in project. B. Yes.

Question No. 11

Contingency amount listed in question No. 9 to cover possible angle drilling costs and any unforseen costs.

Signed:
Inlet Land Co., Inc.
Otto B. Brumsted
Otto B. Brumsted, President

EXHIBIT "A"

The exploratory work to be performed under this contract will consist of two parts, Phase 1 and Phase 2. Phase 1 will commence within two weeks after the signing of the contract. Phase 2 will depend upon the outcome of Phase 1 and will be commenced only upon written approval of the Government.

Phase 1

Phase 1 will consist of the erection of a combination office-tool house and shelter, and drilling 1,000 feet of core-drill holes. The holes are to be located and directed under the supervision of a competent geologist. Each hole will be from 100 feet to 150 feet in depth. The operator is to carefully sample the core and sludge in accordance with conventional and approved sampling practices and will submit a complete report of the results obtained to the Government upon completion of the project. The estimated cost of Phase 1 is as follows:

Fixtures and improvements		$3,000
One combination office, shelter and tool house 20' X 30' built in sections and bolted together to assure greater resale value.		
cost of lumber, hardware, mill-work and paint	$1,800.00	
cost of labor	1,200.00	
total cost	$3,000.00	
Operating equipment		
Operating equipment to be purchased:		
1 core splitter		90
Operating equipment to be rented:		
1 D-8 cat bulldozer, approximately 5 days at $14.00 per hour. (This rate includes operator, fuel, and upkeep of equipment)		600
1,000 feet of drilling by contract at $8.50 per foot		8,500
100 feet of reaming and casing (Contract to be approved by Government)		350
Labor and supervision		
1 superintendent in charge of project and sampling at $25.00 per day, 40 days		1,000
1 geologist, approximately 4 days at $75.00 per day		300
1 or 2 carpenters at $1.75 to $2.50 per hour		---
2 or 3 carpenter helpers at $1.25 to $1.50 per hour		---

Subsistence allowance	500
Transportation allowance	200
Miscellaneous Costs	
Core boxes, stationary	$ 300
General Supervision	200
Bookkeeping, vouchers, maps, etc., of employees allocated on basis of time spent on the project	
Rehabilitation and Repairs	None
Miscellaneous other costs	
Assaying, 200 samples at $2.50	500
Comp. ins., public liability ins.	100
Contingency	1,000

Phase 2

Fixtures and improvements	None
Operating Equipment	
Equipment to be purchased	None
Equipment to be rented	None
Equipment to be supplied	None
1,000 feet of diamond drilling, approx.	$8,500
100 feet of casing, approximate	350
(This work to be contracted and contract to be approved by Government)	
Labor and Supervision	
1 superintendent in charge of project, approximately 40 days at $25.00 per day	1,000
1 geologist, approximately 4 days at $75.00 per day	300
Subsistence allowance	500
Transportation allowance	200
General supervision, bookkeeping and vouchers; wages of employees allocated on basis of time spent on project	200
Rehabilitation and repairs	None
200 samples at approximately $2.50 each	500
Comp. ins., public liability ins.	100
Contingency	1,000
TOTAL	$29,290.00
	(Total amount of loan)

GEOLOGIST REPORT # 1
April 30, 1951

On the 15th , 16th and 17th of April, 1951, a general examination was made of a two hundred and forty acre tract of land in Marinette county including the Camp Five Molybdenum prospect and other mineralized exposures.

Mr. Otto B. Brumsted of Milwaukee spent Sunday, April 15 in the area and showed the location of the six forties in question. He also pointed out the various locations where his work had indicated radioactivity, and one area where mineralized rock had been found and assayed. Mr. Brumsted knows the boundaries of the area thoroughly and has marked them with blazed lines and pickets where necessary. These lines were run by compass and are accurate enough for present purposes.

A general summary of findings follows:

Index

1. Location and general description.
2. Enclosures.
3. Transportation.
4. General geology.
5. Origin of ore.
6. Radioactivity.
7. Recommendations.

1. Location and general description.

The six contiguous forty acre tracts are located in Marinette county, Wisconsin in an area consisting mainly of granite ridges rising 100 to 200 feet above sandy plains. Near the center of the east line of the most southeasterly of these forties several showings of molybdenum bearing quartz veins are exposed in test pits and trenches. These pits extend onto the adjacent forty to the east owned by A. F. Esser of Milwaukee. Near the center of the west line of the forty north of these mine openings a granite knob shows some pyrite mineralization on it's east flank. Exact locations are shown on maps 1, 2, and 3.

2. Enclosures.

The following maps and enclosures are included:

1. Index map. (County Highway Dept.)
2. Ownership map. (R.G.C.)
3. Camp Five Molybdenum Prospect. (R.G.C.)
4. Radioactivity map. (R.G.C.)
5. General geology. (R.G.C.)

3. Transportation.

The area is readily accessible by road from U. S. Highway 141. Connecting roads are blacktop and sand. Railroad facilities are available at Middle Inlet and Crivitz. A privately operated airport is maintained three miles southwest of Crivitz.

4. General Geology.

"The district is underlain by granite with normal variation. It has intruded greenstones which outcrop in several sections and which may be found as inclusions quite extensively. Locally many of the granite variations can be attributed directly to the influence of the greenstone but others such as the porphyritic types are such as are to be found in any area of extensive granite outcropping. The structural expression of the granite, granite gneiss, and greenstone is predominately E-W.

Superimposed on this general picture is a north-east south-west structural disburbance revealed in three recognized shear zones. These shears are marked in the field by an excess of pegmatoid intrusion, by the customary pneumotelytic effects such as epidote, chlorite and quartz veinlets, by large quartz veins but more especially by extensive migmatization which is the surest criterion. All deposits of economic interest which I saw or of which I heard are located along these shear zones. It is apparent that the shears have been channels for both solutions and for intrusions."

The molybdenum deposits of the Camp Five property are found in the north flank of the east-west trending ridge which rises about 100 feet above a sandy plain lying to the north. They are bounded on the west by a northeast trending dike basic in character and by a glacial fill in the valley to the east. About 800 feet southeast of pit #6 (Map 3) granite outcrops are present. Granite extends from the basic dike west and is cut by several other dikes, one outcropping about 1,200 feet west of pit #9 and another where Plumadore Creek swings northeast.

The granite near the deposits at Camp Five is high in quartz content, low in ferromagnesian minerals and moderately coarse and even grained. Where molybdenum is present siliceous pegmatites cut the granite as veins of pinch and swell type, blowouts and apophyses. These vary from irregular quartz veins to quartz feldspar pegmatitic areas in the granite.

Where veins are linear they strike approximately east-west and are roughly vertical. The granite exhibits prominent sheeting dipping to the south about 20 degrees. Near the pits considerable NW and NE fracturing is present. Many of the fracture surfaces are coated with epidote, chlorite and in one case (pit #9) granular mobydenum.

A detailed description of pits follows.*

5. Origin of Ore.

From the fact that the granite is low in ferromagnesians and high in quartz and sodic feldspars it can be argued that the basalt dikes were a lamprophyric product of the granite magma and were emplaced late in the cooling history of the granite when some disburbance took place. The molydenum bearing pegmatite and quartz were deposited later in the fractured area of the granite east of the lamprophyric dike. These dikes and the associated aplites locally contain a high percentage of pyrite and minor amounts of copper, zinc lead, gold and silver.

6. Radioactivity.

The granite area was checked with a model M-3 geiger counter (Map 4). A few anomalous readings were found near the molybdenum area. In all cases observed high readings were due to coatings of somewhat radioactive minerals on fracture surfaces or local concentrations of radioactive minerals in the granite or aplites. Readings of similar or higher intensity in analysed samples of granite from further north indicate a content of U_3O_8 equivalent of less than one tenth of one percent - - - and this in very small areas of 1 to 20 square feet. No deep red staining common to many uranium bearing deposits was observed. No visible uranium minerals were found.

7. Recommendations.

The molybdenum content of the granite and pegmatites at Camp Five is too low to warrant mining. * Pegmatite deposits of this type are commonly irregular in shape and spotty in values. However, the fact that molybdenum is present in this area of fractured granite may point to the presence of similar or stronger mineralization under the valley - east of the extension of the basalt dike and north of the creek. There is no evidence of the identity of the underlying rock. Test pitting for this information would be impractical because of the high water table near the creek. Drilling would disclose it.

No commercial uranium mineralization was observed.

Very truly yours,

R. G. Comer
Geologist

Geologic Setting *

The Camp Five property is in an area of pre-Cambrian granite according to the map in U. S. Geol. Survey Prof. Paper 184, through this is definitely indicated as Killarney near Niagara. Actually the molybdnite deposits are in quite different rocks at the two localities.

At Camp Five the deposits are found in the north (steep slope) flank of an east-west trending ridge that rises nearly 100 feet above Middle Inlet and the tributary Plumadore Creek (see Plate 1); farther north there are no outcrops for some distance -- simply a sandy plain. The south slope of the hill is well mantled with a heavy cover of vegetation; no exploration was made south of the old road indicated in this area on Plate 1. The west end of the property is marked by a pronounced north-trending dry valley underlain by basalt from which fresh samples are readily collected in the prospect pits. West of this valley, granite is found for some distance but no detailed study was made. What is a likely branch of this main basalt dike strikes NNE, just missing the west edge of Pit 2. About 700 feet to the southeast of the boundary shown near the mill on Plate 1, there is another granite outcrop; this is at the east end of the fenced field, part of which appears along the lower right edge of the detailed map on Plate 1.

A Camp Five the country rock in which the molybdenite occurs is a medium course-grained pinkish - to brownish-red granitic rock. It was assumed to be a true granite until a thin section cut from a molybdenite-bearing sample, collected from the loose pieces lying on the granite just east of Pit 1, showed it to consist essentially of albite and quartz, with a variable portion of the albite replaced by or altered to chlorite, and a minor amount of muscovite. In another sample of rock free from molybdenite (40 feet south of Pit 4, see Plate 1) more than half of the feldspar was relatively fresh orthoclase, and there was an increased percentage of muscovite. This latter rock might be called a granodiorite, or else a somewhat albitized granite. A sample taken from the Middle Inlet quarry (1.8 miles SSE of the Camp Five property, see Index Map on Plate 1) appears from inspection to be a medium coarse grained biotite granite.

Molybdenite Deposits *

The molybdenite is found in quartz veins or disseminated in the granite. Some quartz veins are narrow (1/4 inch or so) sharp-walled fissure fillings, either roughly parallel to the sheeting (dips 20-25° to the south), or nearly vertical. These in general do not carry molybdenite in significant quantities. This mineral is mainly found in or near replacement quartz veins with pronounced pinch-and-swell structure (from 0 to 20 inches thick) and very indefinite walls. They may have formed by enlargement of some of the fracture-filling type of quartz vein by latter deposition of quartz which replaced the granite. In places they seem to be simply irregular masses or blowouts of quartz but the shaft-like openings of some of the pits on the property indicate that at least in part they may have been more or less vertical shoots. The most pronounced veins are the vertical ones

indicated on Plate 1 joining Pits 4 and 5; also at the southeast edge of Pit 2. Pit 3 is on a minor vein of similar strike (S 85°W) along the north face of a 15-foot cliff. The trend of these veins is roughly the same as the strike of the sheeting of the granite.

Ten pits or trenches have been indicated by numbers on the detailed map of Plate 1. These numbers have no sequential significance; it was not possible to ascertain enough of the history of the deposit to find in what order the pits were developed.

The remainder of this section is devoted to a description of the various pits.

Pit 8. "This may have been the first opening made on the property. Only a little material was removed, perhaps 100 square feet for a depth of 3 or 4 feet, and this was mainly obtained by blasting from the steep side of the hill. Most interesting is the presence of basalt stringers up to a foot thick cutting the granite here. Only a little molybdenite was seen here; this was in a small quartz replacement made in the granite, a foot or so from the basalt."

The rubble from the work done here is mixed granite and basalt. Stringers of basalt seem to cut the granite irregularly. Occasional patches of molybdenum occur in the granite. Much of the dike material is brown stained by oxidized pyrite.

Pit 7. This consists of a trench which was run south into the hillside so that a 15-foot high face was worked at the south end. This may have followed some sort of a vein, but if so it was short, as it does not show the back (south) face at the present time. The pond is some 10 feet deep, indicating that a shaft-like opening was followed down at the back of the trench; this may have been along a molybdenite-bearing quartz shoot. All outcrops on the sides of this opening as well as dump samples show granite; some of the latter contain quartz-enriched portions carrying flakes of molybdenite. Presumably the better pieces from this as well as all other dumps and their openings have been removed. Rock masses of this dump do not show much quartz; there is some vuggy limonitized pyrite; also some molybdenite was seen along slippage planes in the granite."

Sheeting is well developed in the granite exposed in this pit. The dip of the sheeting is about 20° to the south. Well developed fractures strike N 80° E dipping 90° and N 40° W dipping 70° to NE.

Pit 9. "This pit seems to have started as a trench heading south along the basalt-granite contact. This encountered a fracture-surface in the granite dipping steeply (85°) to the north which was covered with very fine granular molybdenite varying from nothing to over 1/2-inch in thickness. This was followed to the east by the trench indicated on Plate 1; along the north side of this cut near the west end there is an area of the granite about 5 to 1 feet in which flakes of molybdenite are readily found; these perhaps constitute 1 to 2 percent of this area. Some of the blocks of granite from the east end of this trench show fracture surfaces coated with irregular thick films of purple fluorite."

The contact between the granite and the basic dike is well exposed in the west end of this pit striking N15° E and dipping 90°. A prominent fracture surface in the pit strikes N 70° E and dips 80° to the NW. Some NS fracturing is present.

Pit 1. "Here the basalt-granite contact is also well exposed; it is vertical or dips very steeply to the west. This pit is a shaft-like opening which has an 18-foot face on its east side. A number of very irregular quartz masses of the "blowout" type appear in the pit walls; the largest one is 3 by 1 feet. Only one of these (10feet up on the east side) shows molybdenite (two small flakes) at the present time. One small flake of this mineral was also seen in the quartz-enriched granite on the west side of the pit 3 feet above the base and 4 inches from the basalt. Loose samples lying on the granite on the east side of this pit (and probably from this pit) are excellent to show molybdenite in quartz-enriched granite which has suffered pronounced chloritization of the plagioclase feldspar."

Pit 2. "This pit consists of a crudely-rectangular opening now filled with water at least 20 feet deep whose surface is at an altitude of 779 feet. Along the south and east sides the exposed face is 12 to 15 feet high. This drops to 4 to 6 feet around the northeast and north portions. The west end shows 3 to 4 feet of rubble and connot be far from the basalt dike. Most interesting is the quartz vein indicated on Plate 1 along the southeast edge; here is the best show of molybdenite now visible at this property. This vein is of the very irregular pinch-and-swell structure replacement type, which before mining started apparently barely reached the surface at a low point in the latter. At the southeast corner of the pond there is exposed along a nearly-vertical face of granite striking N.55° E. an irregular mass of quartz 12 feet wide by 8 feet high with a vein-like offshoot about one foot wide extending downward nearly to the surface of the pond. This latter downshoot and the lower portion of the quartz to the northeast contain platy masses of molybdenite with the plates approximately vertical. Thus for a curved length of about 4 feet and a width of 6 to 8 inches, about one-quarter of the surface area is molybdenite. Most of the quartz is barren, however, and no clues to explain the localization of the molybdenite near the base of the quartz were observed."

"Farther west near the middle of the south wall of Pit 2 there is another molybdenite-rich area in quartz. This is much like that described above; it is on the upper portion of the pit walls and is inaccessible, though easily observed from a distance of 10 to 12 feet. It is not certain that these two molybdenite occurrances are in the same quartz vein, as the latter is very irregular. However, the vein shown on the map, Plate 1, is drawn to include both, though they are not actually connected at the exposed level."

"The molybdenite-bearing quartz has a most irregular, roughly vein-like shape which averages perhaps a foot in thickness, but shows pronounced pinch-and-swell structure. The contact with the granite is both indefinite and irregular; crude apophyses of the quartz cut out into the granite. Samples can be collected varying in all degree from pure quartz, to quartz with occassional reddish feldspars, through masses of granite obviously enriched by quartz, to the normal granite. Field relations here seem definitely to show that the molybdenite-bearing quartz, at least in considerable part, has replaced the granite."

Fractures on E and N of pit strike N 40° E and dip 90°.

Pit 3. "At this position only a small amount of rock has been removed from the natural face of the cliff; perhaps a vertical height of 6 to 8 feet is involved; a narrow and shallow trench was cut to allow drainage. A 4 by 6-foot area of barren quartz is exposed along the east side of the cut. Apparently this hole was made following down this quartz lead, but results did not warrant much work. At one place a mass of quartz extending back (south) about a foot into the cliff was knocked out. The trend of this vein-like mass of quartz is essentially that of the cliff face to the west; indeed this is locally coated with remnants of quartz."

Pits 4 and 5. "Apparently these were made by the most recent important work done on the Camp Five property. They are along an irregular nearly-vertical quartz vein showing pronounced pinch-and swell structure with here and there irregular apophyses projecting sideways (especially south) into the granite. Pit 4 has a worked face about 12 feet high, with only a foot of water at the bottom. Pit 5 has a 4-foot face now exposed, but the pond is 11 feet deep. Little shows here except for some barren quartz on the south face. The shaft-like opening presumably followed along a near-vertical shoot. The quartz vein can be traced from Pit 4 to Pit 5, but it is so barren that it was excavated to only a shallow depth, and now stands as an inverted saddle between them. It is definitely offset to the south from the vein in Pit 5, as it shows up well in the cliff face southeast of Pit 5 and west of Pit 4. It here contains a few flakes of molybdenite, but these constitute but a fraction of 1 percent of the actual area of the vein outcrop. The granitic wall rock on the east side of Pit 4 has a molybdenite-bearing streak about 4 feet long and up to 8 inches in width; it is from 0 to 2 inches distant from the quartz vein. On the whole the molybdenite in the area of Pits 3, 4, and 5 is less obvious then that in the area of Pits 1, 2, and 9."

Fracturing in the granite strikes N 30° E dipping 90° and N 40° W dipping 60° NE.

At the extreme E end of Pit 5 brownish stained quartz is exposed for a width of about 18 inches. Water in the pit prevents examination of depth. This area gave a relatively high geiger count.

Pit 6. "This trench which is about 18 feet deep extends some 30 feet in a southwesterly direction into the cliff face. The southeast edge is marked by fissure quartz up to 4 inches thick standing nearly vertical and striking N 55° E. The opposite edge of the pit is similarly fracture-controlled, but its strike is about N 20° E. This quartz is apparently fine-grained and barren, as is also the quartz which is roughly parallel to the shooting (dip 20 to 25° to the south); this latter quartz, however, is only about 1/2 inch thick. Blocks in the pit show molybdenite present in irregular coarsely-crystalline quartz masses; these are not over 2 feet across; they are of the blow-out type, with very irregular boundaries that grade into granite in the same manner as is described above for Pit 8. Samples from the dump of Pit 6, which dump is used to support the east-west road at the north end of the trench, show molybdenite in quartz, as well as interrupted thick films of purple fluorite, on joint surfaces in the granite. Associated with the latter are what was taken to be small masses of arsenopyrite, locally altered to limonite. The fluorite-arsenopyrite mineralization seems not to be associated directly with the molybdenite. Occurring with the latter at this pit and elsewhere are small amounts of yellow molybdic ocher, which consists of molybdenum hydroxide carrying ferric iron."

Exposure A

About 50 feet SE of Pit 9 an outcrop near the stream shows some relatively high radioactivity over an area of 15 to 20 square feet. The rock is medium to fine grained granite mygmatite or aplite. Some red and brown staining is present on fracture surfaces.

Origin *

There are apparently two stages of quartz formation. One stage has resulted in irregular replacement veins and shoots of rather coarse grained quartz. The molybdenite (and small amounts of melybdite) are definitely associated with this quartz, though also present in the neighboring granite. This quartz while in part possibly in vertical shoots, is very definitely in near-vertical vein-like masses trending slightly north of east. It is also possible, on the basis of present tentative evidence, to consider that albitization of the granite occurred locally in connection with the introduction of this quartz. Were this confirmed, it might well be of considerable aid in further prospecting.

Fine-grained quartz occurring as fissure fillings and in thin layers roughly parallel to the shooting (dips 20 to 25° to the south) is also present. This quartz seems to be barren in general, and is quite possibly younger than the coarse grained vein quartz, though unfortunately field evidence to settle this point was not observed. Since purple fluorite occurs sparingly on such fracture surfaces, it may be of the same age. With it is associated an iron mineral, possibly arsenopyrite.

A piece of basalt found near Pit 1 contains a tiny crystal of chalcopyrite; this may be of interest in connection with the fact that the analysis of the molybdenite concentrates shipped from this property early in 1940 showed them to contain 0.04 percent copper.

Apparently the group that first worked the Camp Five property considered that the molybdenite bore some genetic relationship to the basalt. Opening of Pits 1, 8, 9, and 10 all support this contention. However, it seems clear from the other openings, especially those of Pits 4 and 5, that this is probably not the case. Nowhere was molybdenite observed in the basalt of in significant close association. Nowhere were molybdenite-quartz veins observed cutting the basalt. It is therefore tentatively concluded that the molybdenite antidated the basalt, and therefore that the latter is of no significance in connection with the actual locale of deposition of the molybdenite.

Copy:
E. J. Longyear Company
Mining Engineers
Minneapolis 2, Minn.

Inlet Land Company, Inc.
2966 No. 49th Street
Milwaukee, Wisconsin

March 14, 1951

Attention: Mr. Otto B. Brumsted, President

Gentlemen:

We wish to acknowledge and thank you for your letter of March 7, also for the enclosed drilling data sheet that you so kindly completed.

After reviewing the information presented on the data sheet and in accordance with your letter of March 6, we are pleased to submit below our proposal for your contemplated drilling program which is to be carried out in Marinette County, Wisconsin.

We understand that the work as now contemplated will consist of the diamond core drilling of approximately 15 vertical holes in which it is estimated the depth will vary from 100 to 150 feet, that the minimum total footage will be 1,000 feet and that the material to be penetrated will consist entirely of granite and quartz; furthermore, that no overburden exists in the area to be drilled, and that all holes will start in bedrock. We also understand that the property on which the drilling is to be performed is accessible via a surfaced highway, that no road building will be required on the property, and that water is obtainable within 300 feet of any proposed drill hole location.

For this work, we propose to furnish one Longyear gasoline-powered diamond core drill together with the necessary accessory equipment required to accomplish the work as now planned. We further propose to operate the rig on a one-shift basis and to drill EX size (1½" diameter) hole, recovering core approximately 7/8" in diameter.

We will carry public liability insurance covering personal injury and property damage; Workmen's Compensation, Old Age Benefit, Unemployment and any other insurance on our employees required by state or federal laws; also, all-risk insurance on the drilling equipment protecting against loss by theft, fire, flood, land-slides and other similar hazards. Certificates showing the coverage refered to will be furnished if desired.

Based upon the conditions as outlined above, we are pleased to quote as follows:

<u>Diamond core drilling</u>
0 to 150 feet in depth, measured from the collar of the hole
EX size (core approx. 7/8" in diameter - $8.50 per foot

Reaming and Casing, if required.....$3.50 per foot

Delays for your convenience or for which
you are responsible .....$6.00 per hour

Cores are to be delivered to your representative at the drill in core boxes furnised by you.

Statements will be rendered as promptly as possible after the first of each month.

We very much appreciate the opportunity of considering this work and, if awarded the contract, we are in position to commence work immediately after the spring break-up which we estimate will be approximately May 15.

In regard to your request for information concerning the geological services offered by E. J. Longyear Company, we are referring this matter to Dr. D. M. Davidson, our Chief Geologist. Dr. Davidson is out of the city at the present time but it is expected that he will return the first part of next week, so you may expect to hear from him shortly thereafter.

Yours very truly,

E. J. LONGYEAR COMPANY

W. Davenport
Treasurer & General Manager

MJG:LT

Accepted:

Inlet Land Company, Inc.

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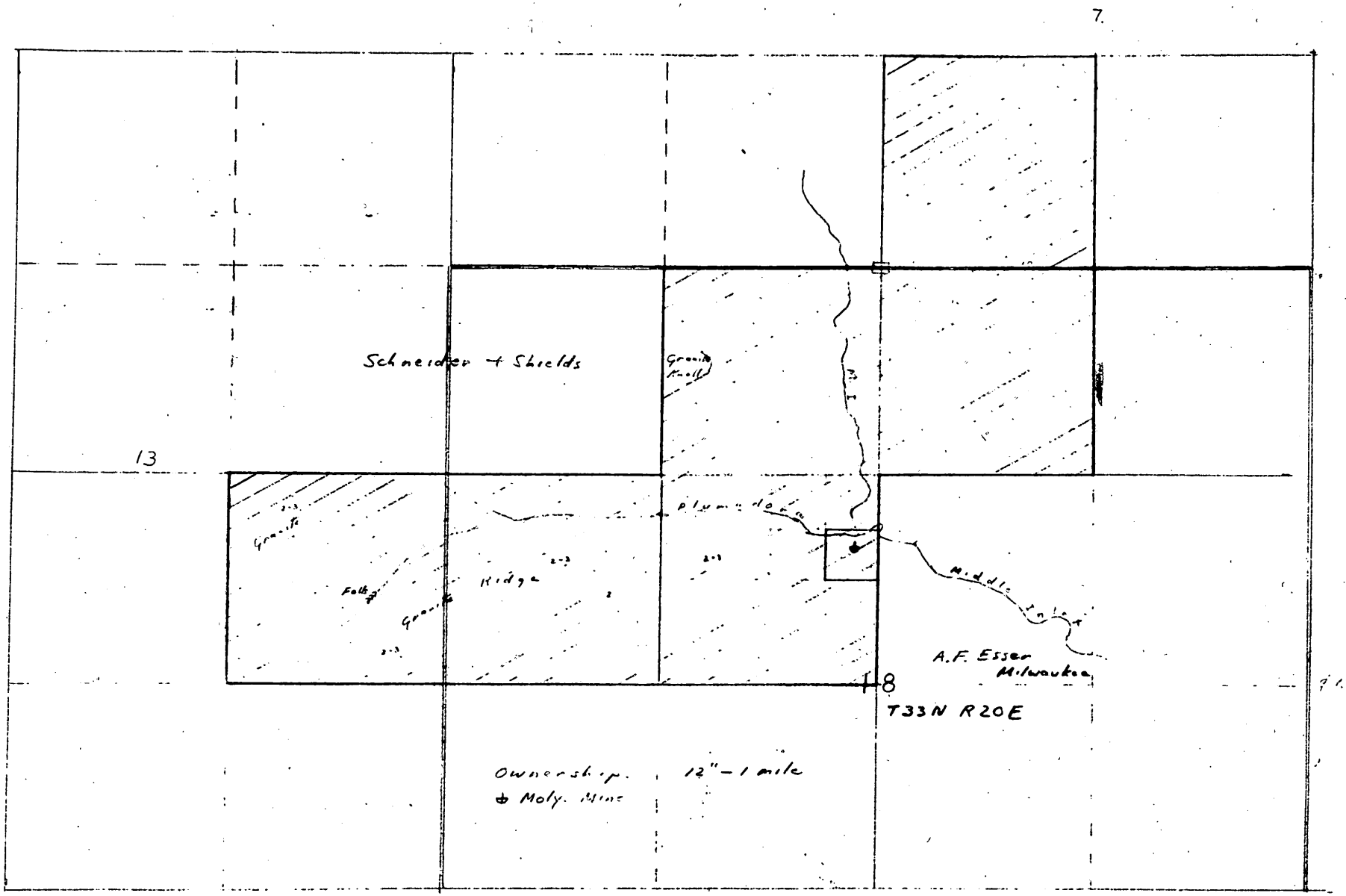
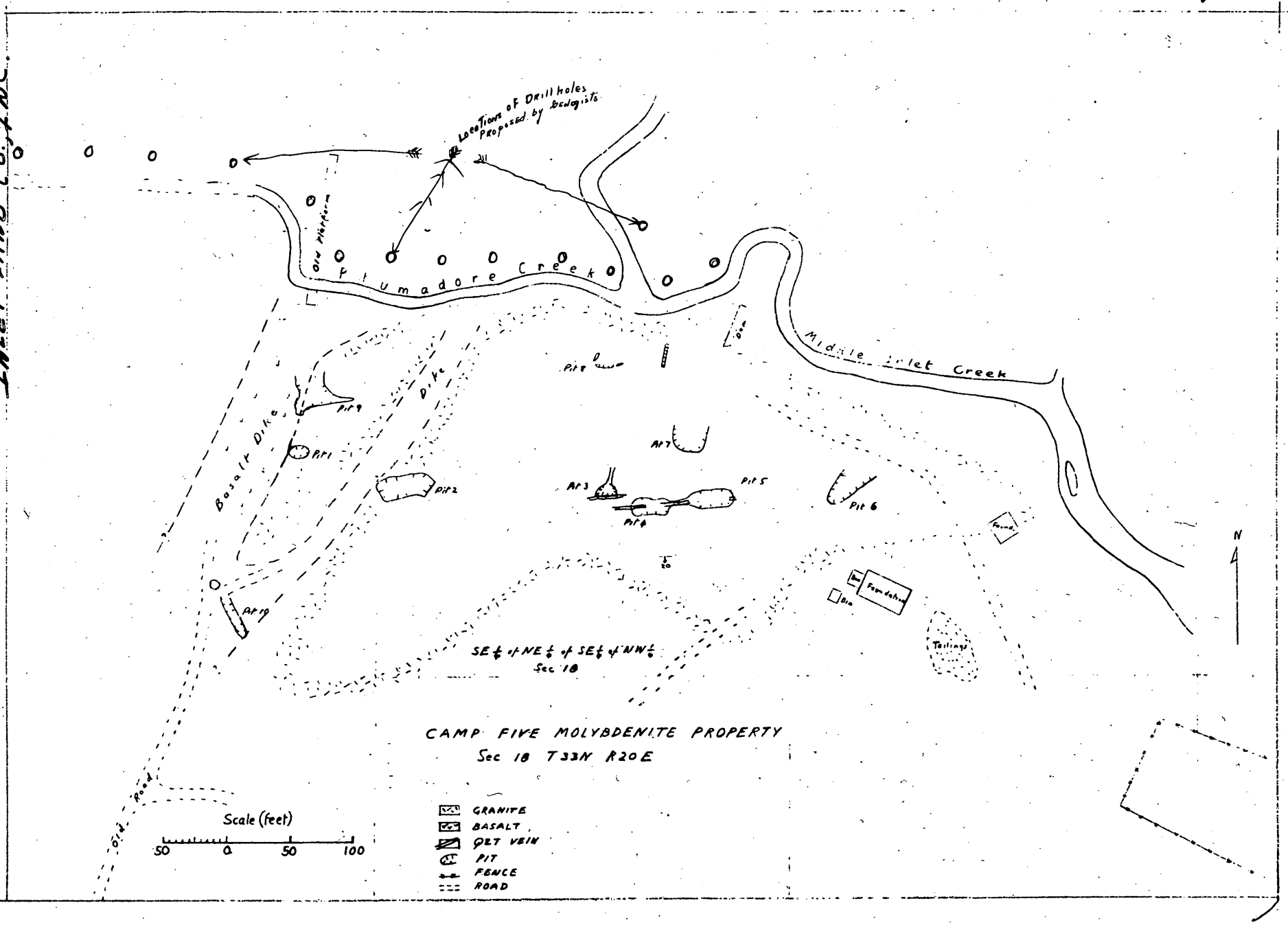
DMEA-2334
INLET LAND CO. INC.

Map No. 2



Map no ③ 3

DMR-2334
INLET LAND CO. INC.

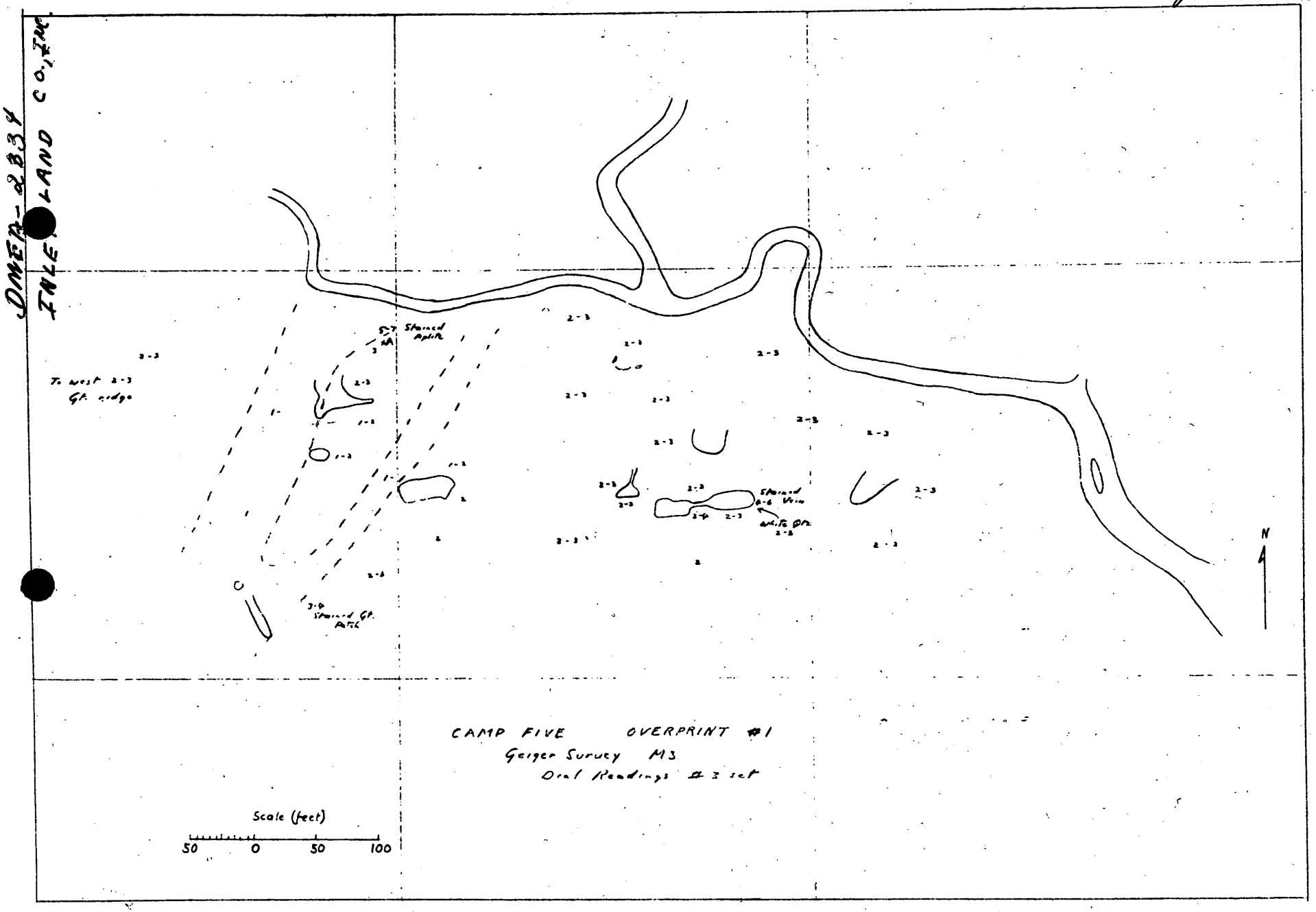


Map No. 4

4

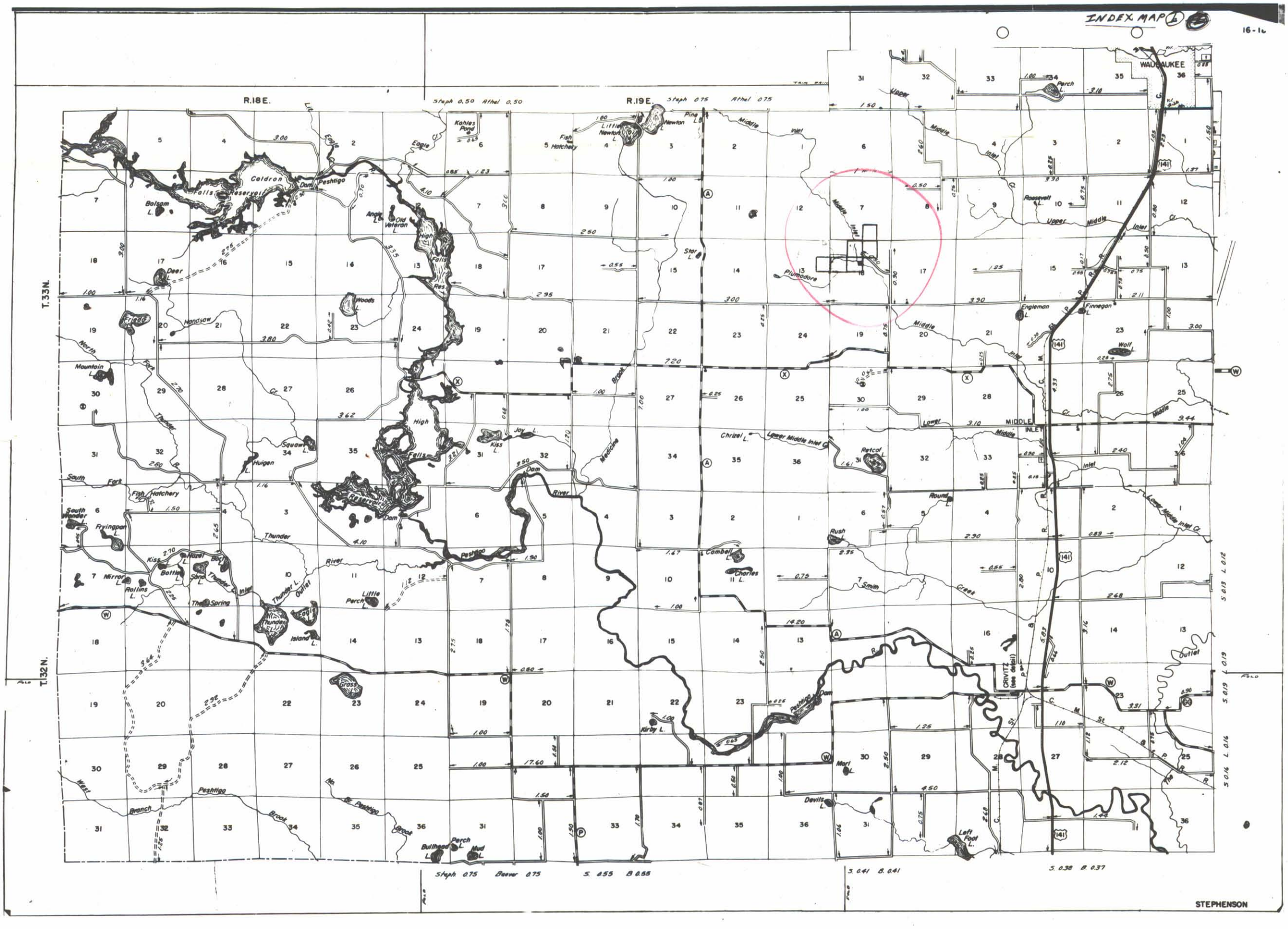
DMEA-2B34

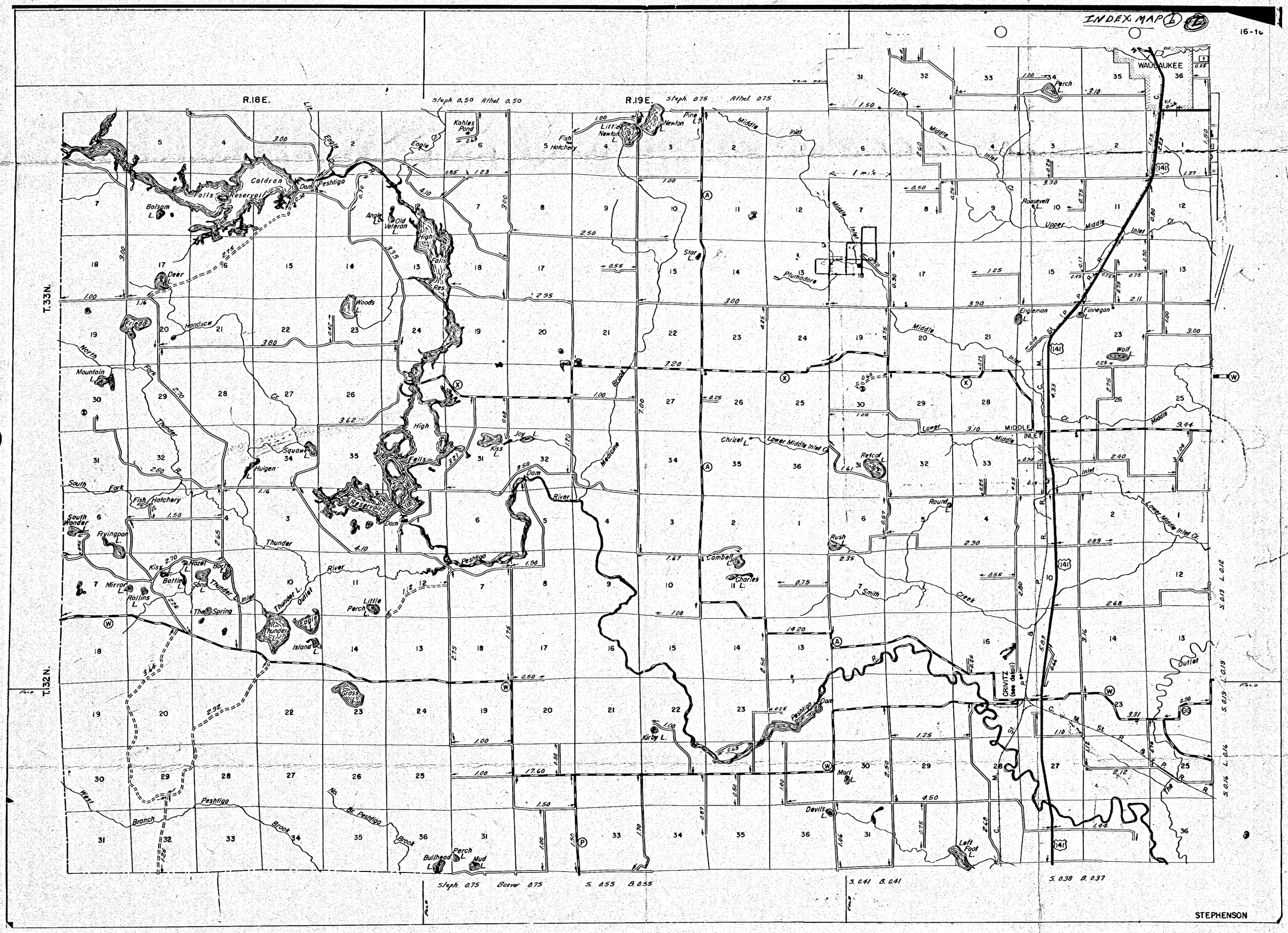
INLEY LAND CO., INC.

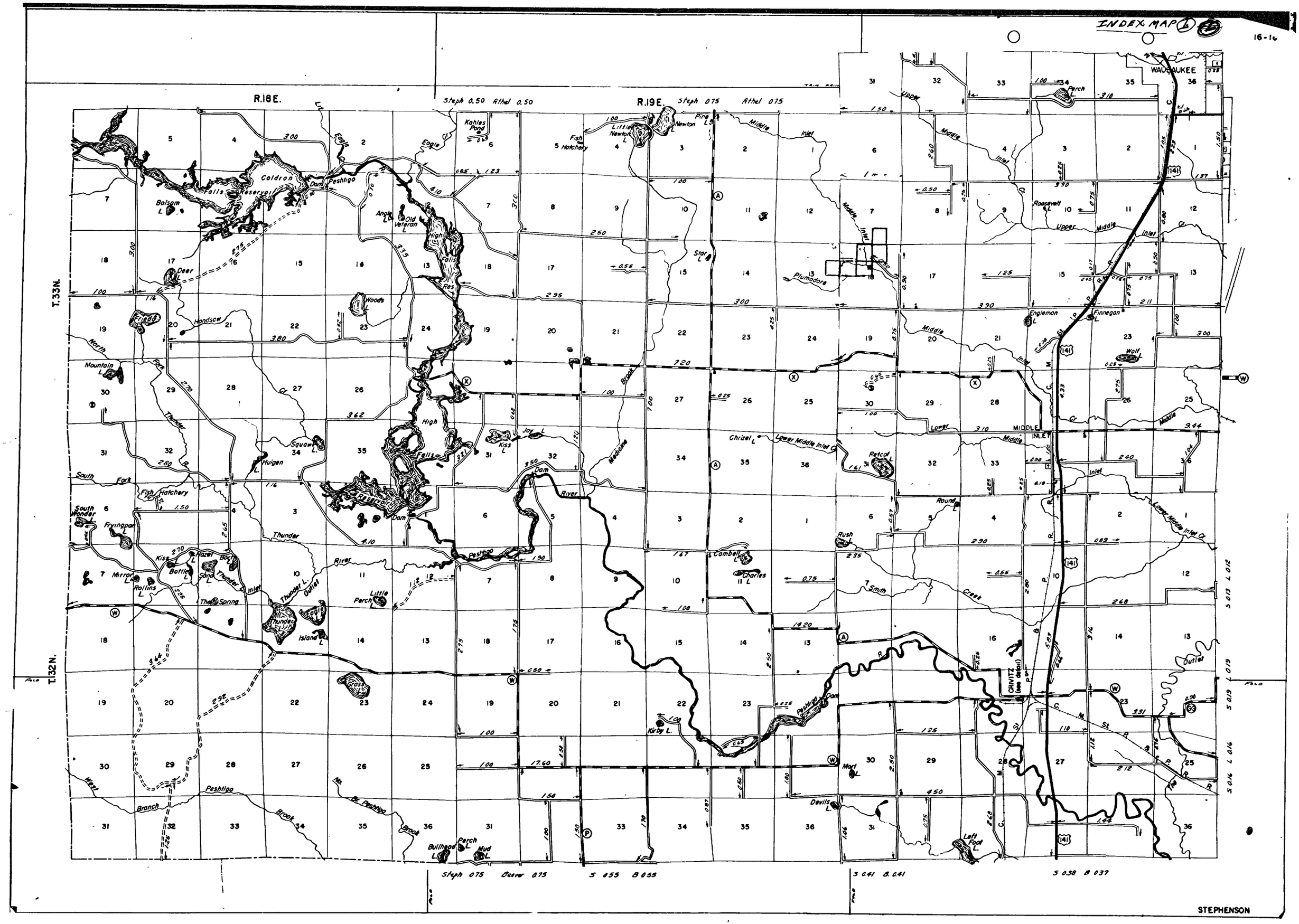


INDEX MAP 1

16-16




INDEX MAP
16-16
R.18E.
R.19E.
T.33N.
T.32N.
Steph. 0.50 Athel. 0.50
Steph. 0.75 Athel. 0.75
Steph. 0.75 Beaver 0.75 S. 0.55 B. 0.55
S. 0.41 B. 0.41
S. 0.38 B. 0.37
WAUSAUKEE
MIDDLE INLET
CRIVITZ (see detail)
STEPHENSON
Caldron Falls Reservoir
Peshtigo Dam
High Falls Res.
Reservoir
Peshtigo River
Thunder River
Thunder L.
Little Newton L.
Newton L.
Pine L.
Fish Hatchery
Kohles Pond
Eagle Cr.
Lit. Eagle Cr.
Balsam L.
Deer L.
Freedom
Mountain L.
North Fork Thunder Cr.
South Fork
South Wonder
Fryingpan L.
Mirror L.
Rollins L.
Kiss L.
Bottle L.
Hazel L.
Bear L.
Sand L.
Thunder Inlet
Thunder L. Outlet
The Spring
Huigen L.
Squaw L.
Handsaw
Woods L.
Angle L.
Old Veteran L.
Joy L.
Kiss L.
Medicine Brook
Star L.
Plumadore
Chrizel L.
Lower Middle Inlet Cr.
Upper Middle Inlet Cr.
Roosevelt L.
Perch L.
Engleman L.
Finnegan L.
Wolf L.
Retcof L.
Round L.
Rush L.
Cambell L.
Charles L.
Smith Creek
Little Perch L.
Island L.
Grass L.
Kirby L.
Mud L.
Devils L.
Left Foot L.
Bullhead L.
Perch L.
Mud L.
West Branch Peshtigo Brook
No. Br. Peshtigo Brook
Peshtigo Dam
Outlet
The Outlet
C. M. St. P. & P. R.R.
Wis. Div.
141
63
Trim Point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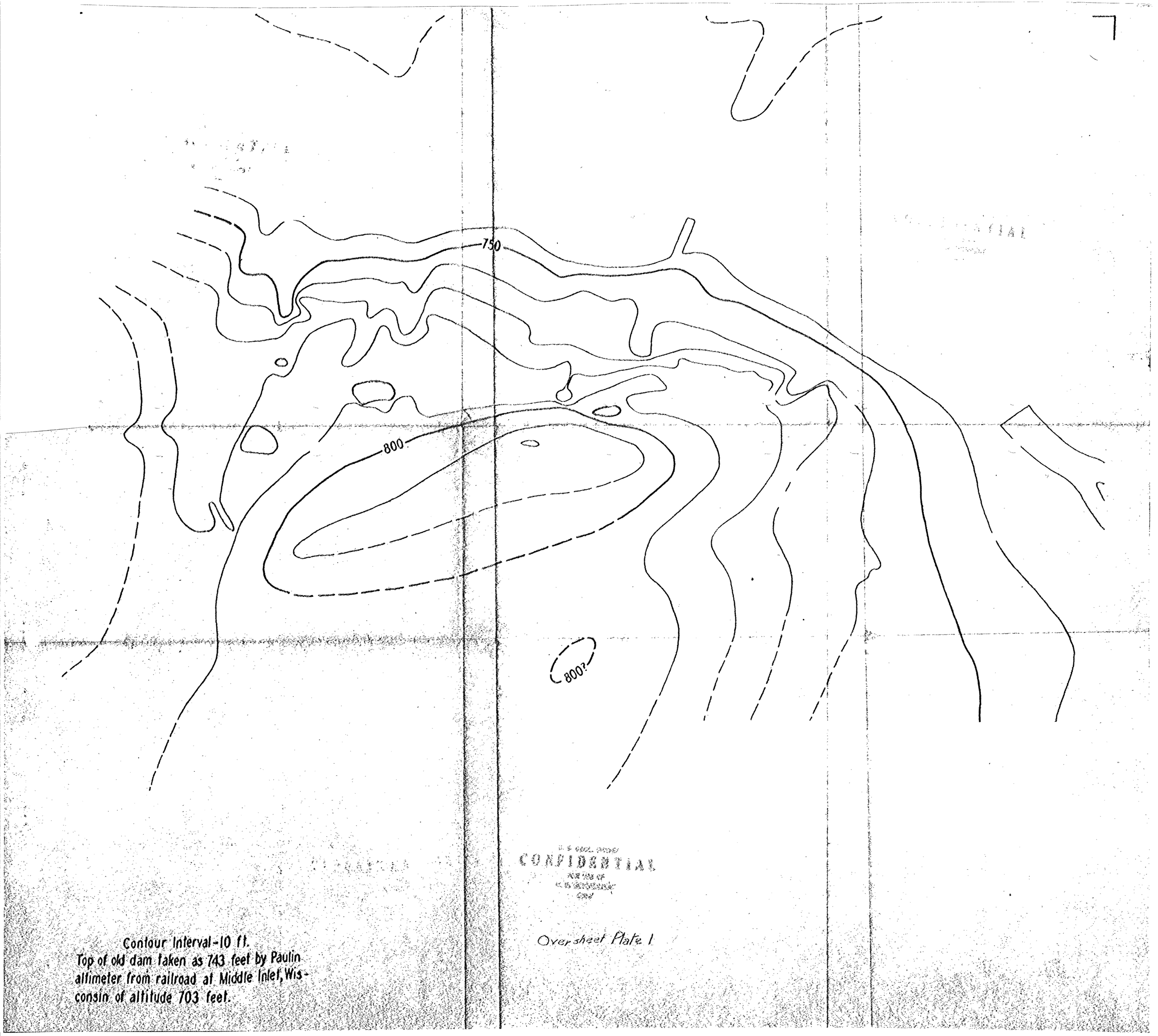
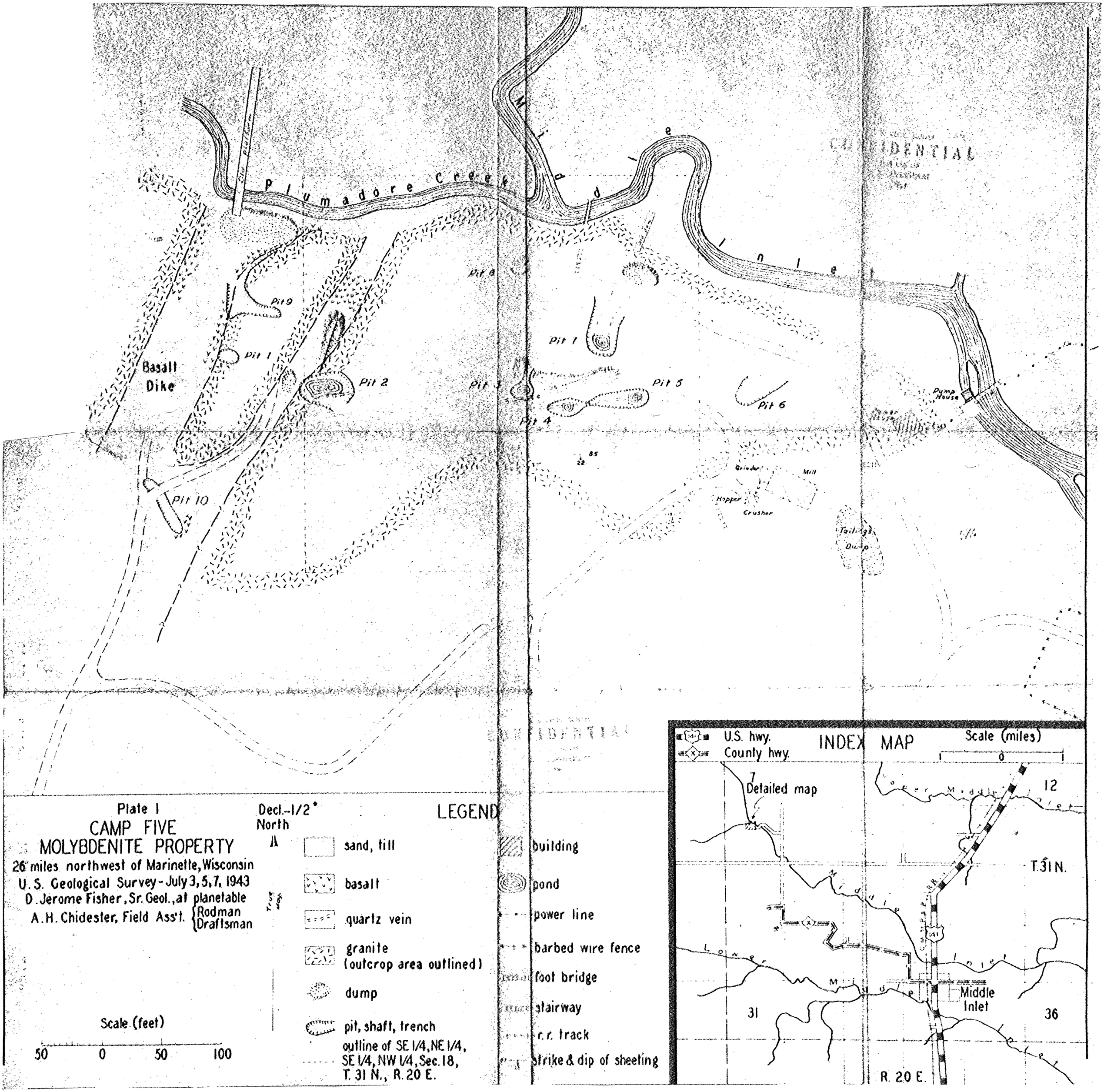
141



Contour Interval-10 ft.
Top of old dam taken as 743 feet by Paulin altimeter from railroad at Middle Inlet, Wisconsin of altitude 703 feet.


Plumadore Creek
Middle Inlet
Old Road
Basalt Dike
Pit 1
Pit 2
Pit 3
Pit 4
Pit 5
Pit 6
Pit 8
Pit 9
Pit 10
Pump House
Grinder
Mill
Hopper
Crusher
Tailings Dump
Plate I
CAMP FIVE
MOLYBDENITE PROPERTY
26 miles northwest of Marinette, Wisconsin
U. S. Geological Survey - July 3, 5, 7, 1943
D. Jerome Fisher, Sr. Geol., at planetable
A. H. Chidester, Field Ass't. {Rodman / Draftsman
Decl.-1/2° North
True North
Scale (feet)
50 0 50 100
LEGEND
sand, till
basalt
quartz vein
granite (outcrop area outlined)
dump
pit, shaft, trench
outline of SE 1/4, NE 1/4, SE 1/4, NW 1/4, Sec. 18, T. 31 N., R. 20 E.
building
pond
power line
barbed wire fence
foot bridge
stairway
r.r. track
strike & dip of sheeting
INDEX MAP
U.S. hwy.
County hwy.
Scale (miles)
0
Detailed map
Lower Middle Inlet
12
T.31 N.
Middle Inlet
31
36
R. 20 E.