

# MAR 19680143: NORTHERN ALBERTA

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REPORT ON FIELD EXAMINATION

SHAWNEX MINES LTD.

SULPHUR PROSPECTING PERMIT NO. 177

NORTHERN ALBERTA

THIS REPORT HAS BEEN PREPARED  
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Shawmex Mines Ltd.

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EARNSCLIFFE

ECONOMIC MINERALS

FILE REPORT No.

S-AF-177(2)

REPORT ON FIELD EXAMINATION  
SHAWNEX MINES LTD.  
SULPHUR PROSPECTING PERMIT NO. 177  
NORTHERN ALBERTA

Prepared For  
Shawnex Mines Ltd.  
December, 1968

J. C. SPROULE AND ASSOCIATES LTD.  
OIL AND GAS ENGINEERING AND GEOLOGICAL CONSULTANTS

REPORT ON FIELD EXAMINATION

SHAWNEX MINES LTD.

SULPHUR PROSPECTING PERMIT NO. 177

NORTHERN ALBERTA

The field work on Sulphur Prospecting Permit No. 177 has been carried out at the request of Mr. Dan J. Fulton, acting for Shawnex Mines Ltd. The work was authorized under our letter agreement of July 19, 1968, and the request made was that J.C. Sproule and Associates Ltd. should investigate and sample representative locations as described as Step 1 of Phase II in our letter of July 19. We quote as follows with reference to our proposal for field examination:

"The field party conducting Phase II would, upon arrival in the field, immediately check those points of indicated interest that had become evident from the photo-geological study. More specifically, we think that the preliminary study will give you a good idea of all those areas that are likely to contain sulphur. All areas where sulphur is likely to occur will be checked by a helicopter reconnaissance crew. Hand specimens and/or auger samples will be taken to determine the presence or absence of sulphur. We might call this preliminary part of the field program Step 1 of Phase II. The total cost of Step 1 would be \$800."

The field work has been conducted by Mr. S.R.L. Harding and Mr. N. Soul, working by helicopter from a base camp established on the east side of the Athabasca River about six miles south of the mouth of the Firebag River.

In the September 17, 1968, report on the Photogeological Study of Sulphur Prospecting Permit No. 177, it was recommended that a field check be made of an area of flattening in the northeastern portion of the Permit, which was designated on the accompanying mosaic as 'Area 1'. This was done and two auger holes were drilled and sampled to eight-foot depths. Black mud was recovered at these two locations, Sample Locations 177-1 and 177-2, but analyses showed only traces of sulphur.

On a helicopter flight up the stream valley, which crosses the southern part of the Permit, some slumping was observed in valley walls but no sulphur springs were observed and no suitable basins for sulphur accumulation. Farther up this valley and about one mile west of Permit No. 177, two helicopter landings were made. At Sample Location 177-3, some large-scale slumping in Cretaceous shales was associated with iron springs. Analyses of a mud sample from this location yielded only a trace of sulphur. On the opposite side of the valley, a bottom sample taken from a small muskeg area analyzed 12.60 percent sulphur by dry weight. Springs in the area did not, however, appear to be sulphur springs such as are known in the Firebag River area and the nearby Coffey Lake area, east of the Athabasca River.

At Location No. 177-5, on the west side of the subject Permit, a mud sample was taken from the bottom of a drained beaver pond. The analysis of this sample showed 7.52 percent sulphur by dry weight. The last sample taken, which was at Location 177-6, a swampy depression at the south edge of the Permit, showed only 0.74 percent sulphur.

The sample locations are indicated on the accompanying Figure 1 and the analyses by Chemical and Geological Laboratories Ltd. constitute Appendix I attached hereto.

With reference to the results of the field examination, we note that only traces of sulphur were obtained from auger samples in that portion of Permit No. 177, which we considered most suitable to the accumulation of sulphur. The best sulphur analyses from samples taken on the Permit was 7.52 percent from the bottom of a drained beaver pond on the strongly sloping east end of the Birch Hills. Any basin areas on this slope are quite small in size and unlikely to provide locations for accumulation of sulphur in commercial quantities. The same may be said of that part of Permit No. 177 that is to the east of the off-permit Location No. 177-4, which yielded a sample with 12.60 percent sulphur.

The whole Permit No. 177 appears to be in an area where Cretaceous shales and sands, in considerable thickness, overlie the Devonian carbonates. Our experience in the general area has led us to believe that sulphur springs usually originate in areas where the Devonian rocks are at or near the surface.

We quote from our letter proposal of July 19, 1968:

"If the early field check should show the encouraging presence of sulphur, we would proceed with the second step of the field study, which would involve more extensive field studies and sampling of prospective areas. .... You would, of course, be advised of the preliminary results of (Step 1 of) Phase II before being required to authorize Step 2 of Phase II."

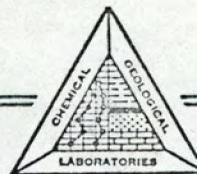
On the basis of the results of the Step 1 field examination, we do not consider further sulphur exploration of Sulphur Prospecting Permit No. 177 to be justified and recommend that you take steps to drop this Permit and request a refund of your deposit with the Department of Mines and Minerals.

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V.A. Farley *o*

  
S.R.L. Harding, P. Geol. *o*

1009 Fourth Avenue S.W.,  
Calgary 2, Alberta.  
December 17, 1968.  
VAF:SRLH:ldl



14240-115 AVENUE, EDMONTON, ALBERTA

4605 - 12th. Street, N. E., Calgary 67, Alberta.

Date Received: October 24th., 1968 Laboratory Report Number: C68-4216-6J. C. SPROULE & ASSOCIATES LTD.

Kind of Sample: Soil

Date Reported: November 5th., 1968

SAMPLE  
NUMBERELEMENTAL SULPHUR  
(% by Weight on  
Dry Sample)177-1  
177-2  
177-3  
177-4  
177-5  
177-6Trace  
Trace  
Trace  
12.60  
7.52  
0.74

R.12

R.11

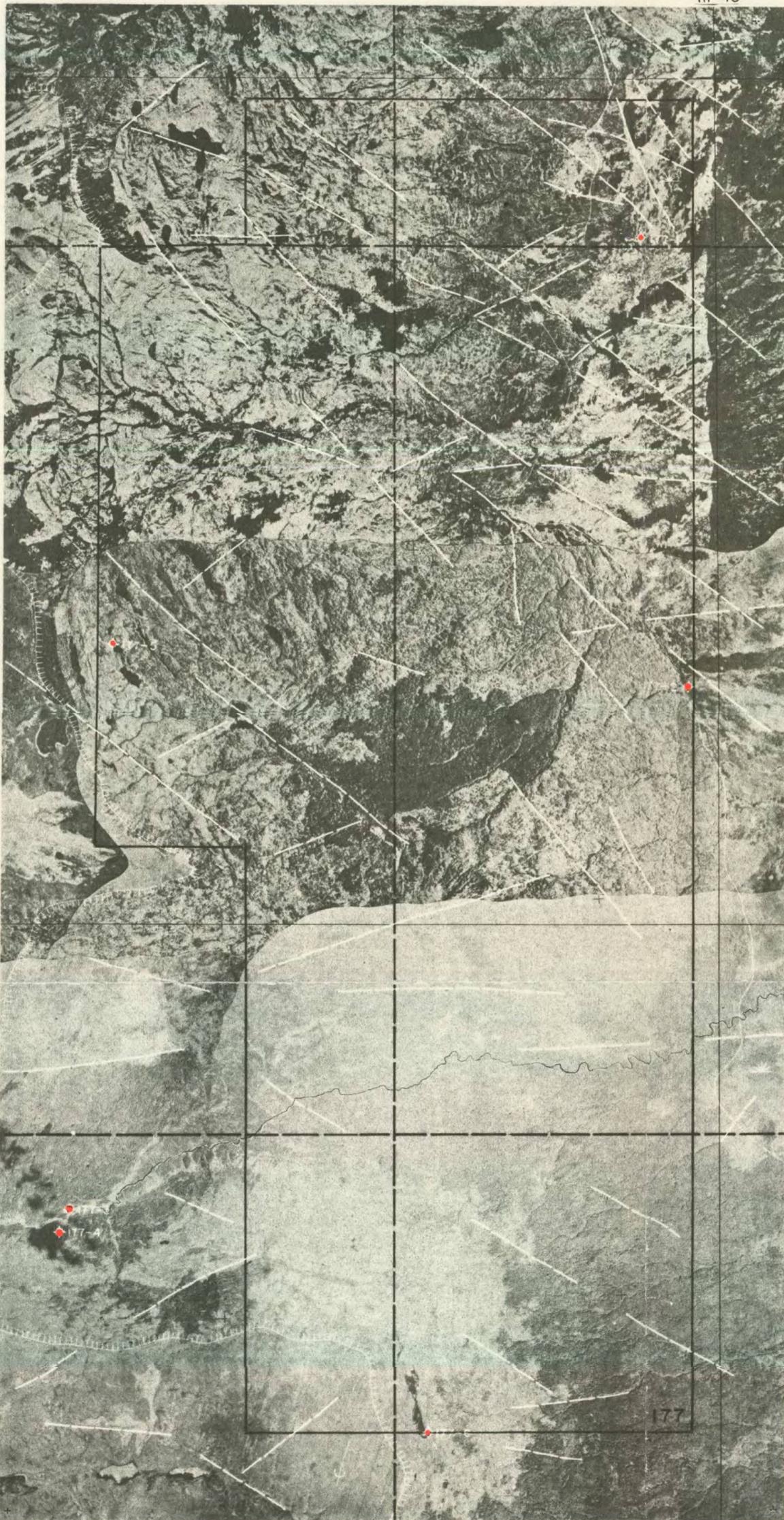
111°45'

57°50'

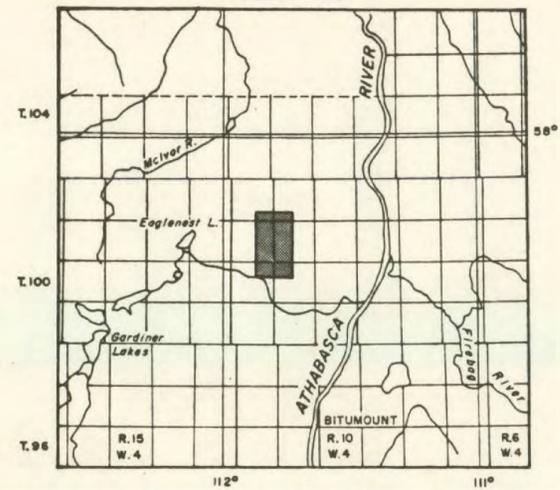
T.101

57°45'

177

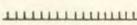
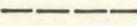
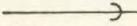


INDEX MAP



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**LEGEND**

-  **SURFICIAL DEPOSITS**
- Muskeg*
- PHOTOGEOLOGICAL SYMBOLS**
-  *Scarp*
-  *Alignment interpreted to indicate faulting or fracturing in bedrock*
-  *Direction of glacial movement*
-  *AREA 1,2 etc.* *Areas of interest discussed in report*
-  *177* *Sulphur prospecting permit outline*
-  *Sample Location*

**PHOTOGEOLOGICAL MOSAIC  
SULPHUR PROSPECTING PERMIT  
No. 177  
EAST BIRCH MOUNTAINS AREA  
ALBERTA**

PREPARED FOR  
**SHAWNEX MINES LTD.**



APPROXIMATE SCALE IN MILES

THIS IS A SEMICONTROLLED MAP-MOSAIC AND SHOULD NOT BE MISTAKEN FOR AN ACCURATE GEOGRAPHIC BASE

J.C. SPROULE AND ASSOCIATES LTD. CALGARY, ALBERTA