

MAR 19680137: FORT VERMILION

Received date: Dec 31, 1968

Public release date: Jan 01, 1970

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FINAL GEOLOGICAL REPORT
SULPHUR PROSPECTING PERMIT NO. 171
FORT VERMILION AREA

ECONOMIC MINERALS

FILE REPORT No.

S-AF-171(1)

INTRODUCTION

Sulphur Prospecting Permit Number 171 comprising 19,840 acres was issued with effective date of February 21, 1968.

A thorough study with respect to sulphur occurrences on the permit has been conducted both on a regional and on a local basis, the details of which are briefly outlined below.

LOCATION

The Sulphur Permit is located in Twps. 97 and 98, Rge. 13 W5M, and is approximately 60 miles due south of Fort Vermilion in north central Alberta. The permit lies several miles southwest of the main body of sulphur permits, none of which have reported any production of sulphur on a commercial basis.

The permit lies in the Buffalo Head Hills north of Bison Lake at an elevation of 1,900 - 2,200 feet above sea level and is drained to the northeast by the Peace River via the Buffalo River and several small tributary streams. (See Index Map).

Natural vegetation consists mostly of variable patches of evergreen with some deciduous growth, and considerable deadfall and muskeg.

EVALUATION FOR SULPHUR

Subsurface Geology

A test well, Amerada Cr. Talbot 10-35, drilled on Sulphur Permit 171 in Lsd. 10-35-97-113 W5, was spudded on January 17, 1968 and was abandoned at 5423 feet in the Precambrian on February 21, 1968. The well was drilled at a cost of \$204,031.42 to assist in evaluating the lands for sulphur as well as for gas and oil. No cores were cut, however, two tests were completed - one in the Keg River, the other in the "Granite Wash" recovering 2,787 feet and 4,850 feet of salt water respectively. (Fig. 2 & 3)

In an attempt to determine the possible origin or route of migration of the surficial sulphur and/or sulphurous waters, all available borehole cuttings from the well were carefully examined with respect to sulphur content.

Photographic Study

Aerial photographs covering the area were obtained and studied in detail for small areas lacking vegetation, light colored areas surrounding potholes and other features which, by comparison with areas of known sulphur occurrences on the Birch River and on the north flank of the Buffalo Head Hills, were thought to be characteristic of sulphur deposits or springs.

Surface Geology

A trip, by a company geologist, to the Fort Vermilion area on February 9, 1968 and inspection of several outcrops there encouraged the undertaking of a large scale regional study which was contracted to V. Zay Smith and Associates. At a total cost of \$2,750.00 that company conducted a two-phased study of an area covering the bulk of the sulphur permits, Twps. 92 - 101, Rges. 1 - 17 W5.

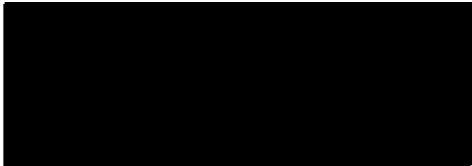
The first phase, completed in June 1968 dealt primarily with regional structural geology, physiography, stratigraphy and research of sulphur occurrences and origins.

The results of the work in Phase I was presented in a written report along with maps at a scale 1" = 2 miles which showed all localities of interest with respect to sulphur.

Phase II, completed in August 1968, was a continuation of the study involving field work and a limited drilling program to thoroughly inspect all favourable areas revealed through Phase I. These results were presented on the same maps which were accompanied by chemical analysis of samples taken in the field, photographs of several pertinent localities, and a written report.

CONCLUSIONS

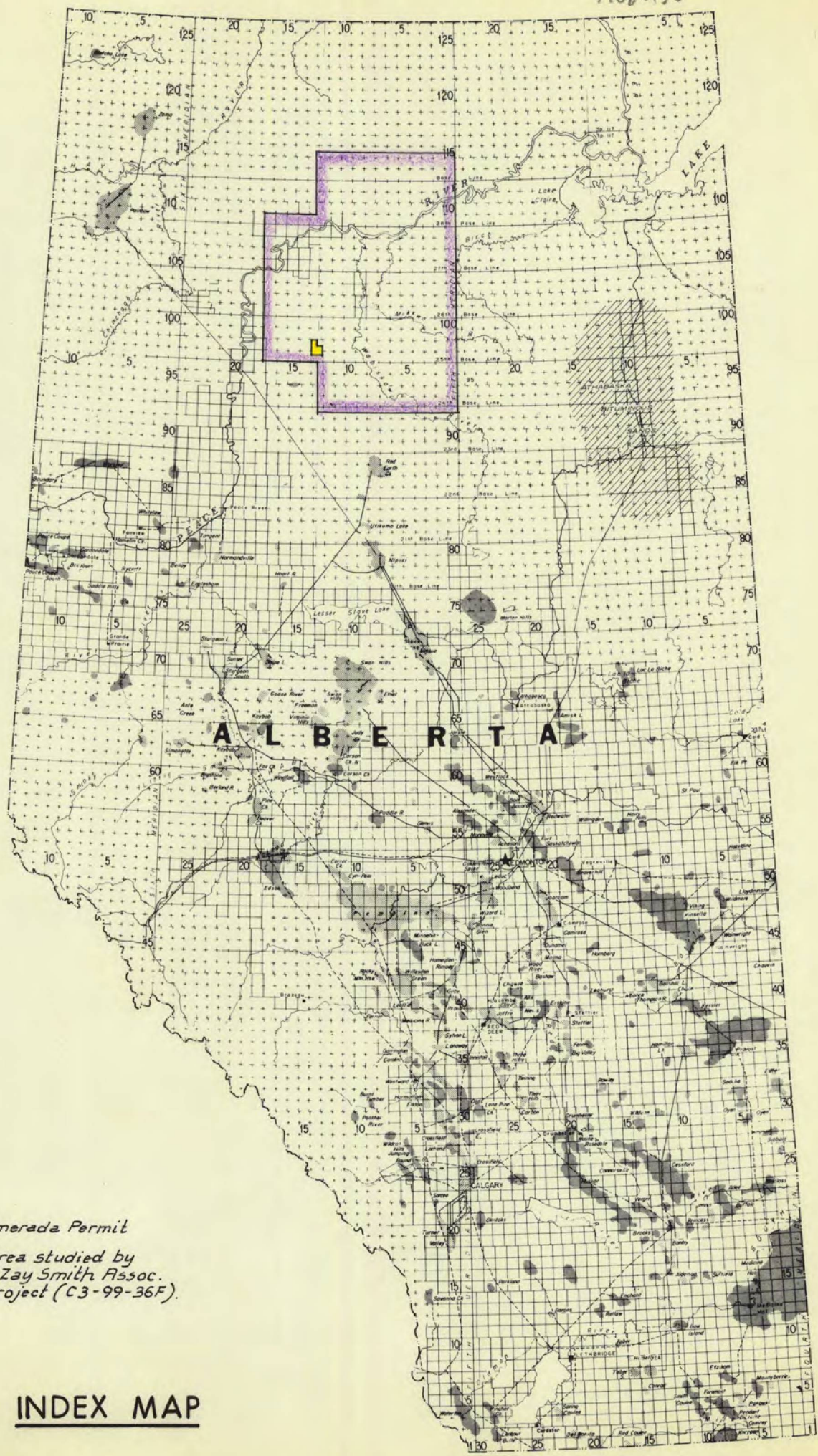
With the results of the above evaluation of Sulphur Prospecting Permit #171 in hand it has been concluded that the occurrence of sulphur in the Fort Vermilion area is erratic, disseminated, often of poor quality and not economically commercial at this time. Specifically on permit #171, the studies have revealed no facts to indicate that sulphur exists in commercial quantities.



K. L. Phelps
Geological Department

September 24, 1968

KLP:sh

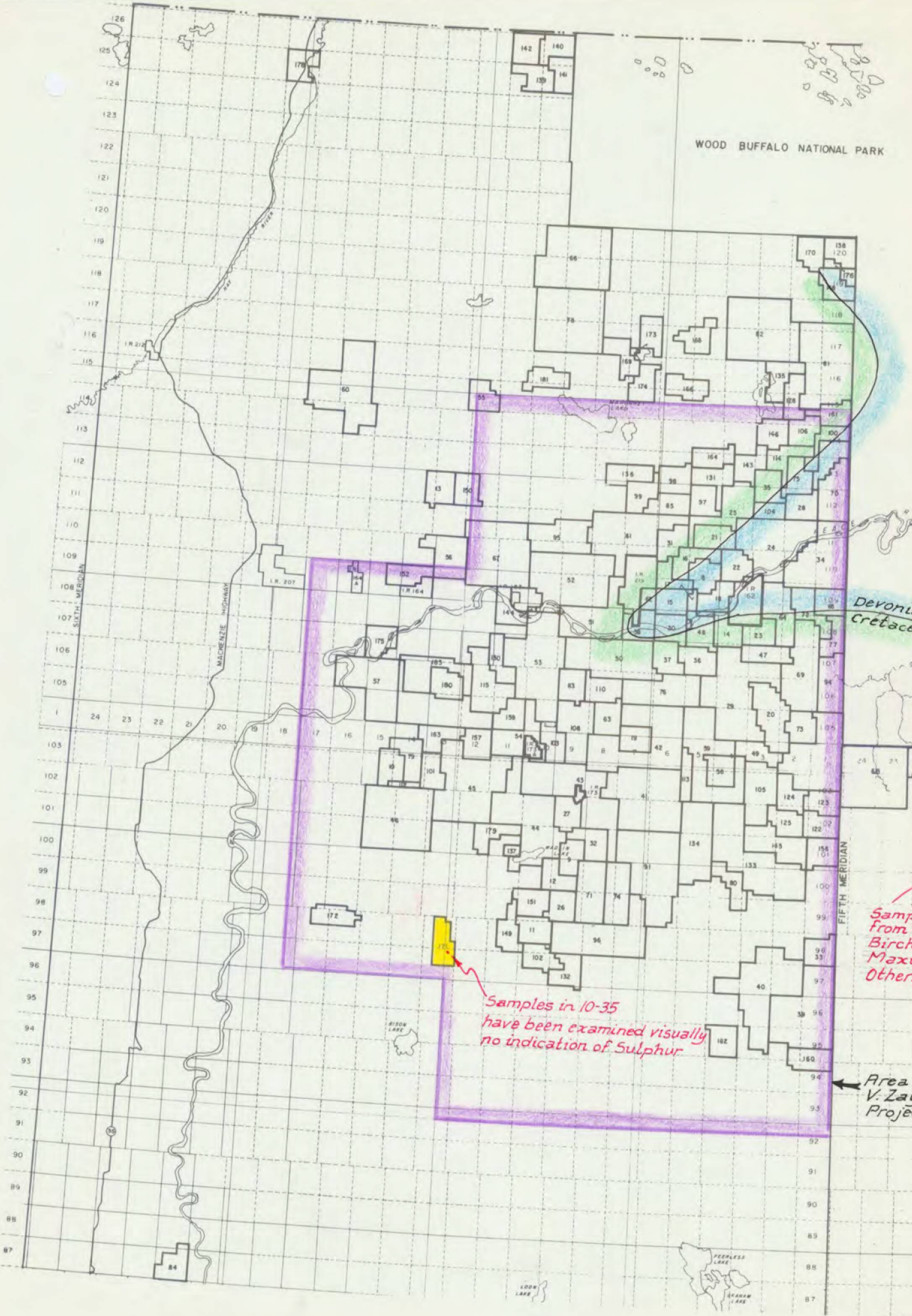


- Amerada Permit
- Area studied by V. Zay Smith Assoc. Project (C3-99-36F)

INDEX MAP

ALBERTA SULPHUR PROSPECTING PERMITS

Table with columns: NO. T R M ISSUED HOLDER ACRES. Contains two columns of permit data listing permit numbers, dates, holders, and acreages.



Samples in 10-35 have been examined visually no indication of Sulphur

Samples analysed from outcrops on Birch River Maximum 10%+8% Others under 3%

Area studied by V. Zay Smith Assoc. Project (C3-99-36F)

TOTAL ACREAGE - 6,433,532

Legend for symbols: PERMIT IS NOT SHOWN ON THIS MAP, I.R. - INDIAN RESERVES - NO DISPOSITION, LINE THROUGH PARTICULARS INDICATES PERMIT CANCELLED.

MAINTAINED UP TO DATE FREE OF CHARGE TO ANYONE AT ALL TIMES

FIELD TITLE SERVICE 560 GUINNESS HOUSE CALGARY Tel. 263-3750 Scale: 1 in. = 2 1/2 mi.

DRILLSTEM TEST RECORD
10-35-97-113 W5

No	Interval	Zone	Results	VO	HP	FP	SIP	Time
1.	5157-5197	Keg R	G.A.B., rec. 2787' s.w.	I. F.	60 2746	392 1397	2190 2137	100 60
2.	4344-4394	Sl. Pt.	Seat failed.					
3.	5356-5423	Granite Wash	S.A.B., rec. 4850' s.w.	I.	45 2789	1224 1306	2368 2368	30 60

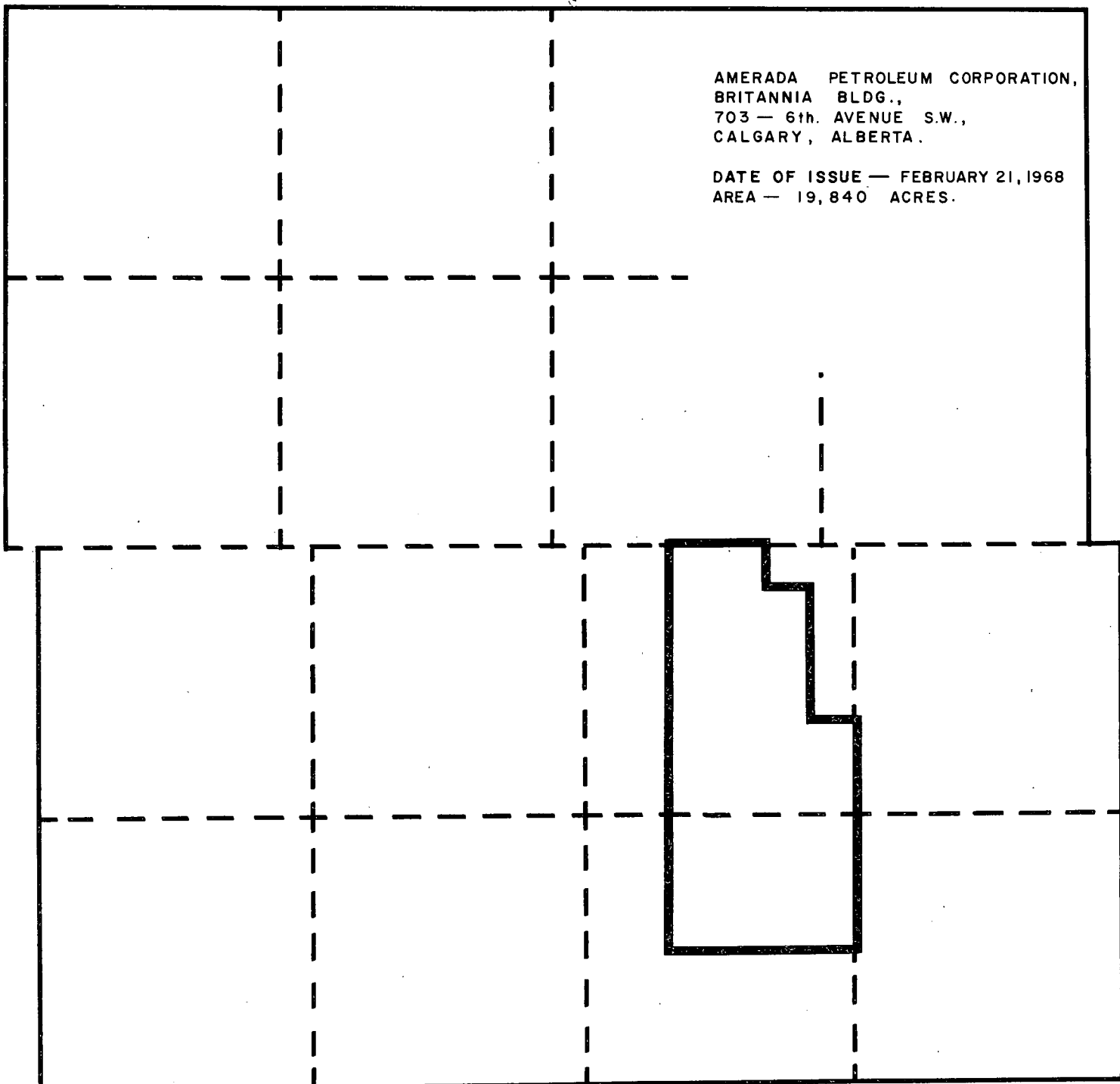
PERFORATION AND STIMULATION RECORD

No	Interval	Zone	Method and Results

SULPHUR PROSPECTING PERMIT No. 171

AMERADA PETROLEUM CORPORATION,
BRITANNIA BLDG.,
703 — 6th. AVENUE S.W.,
CALGARY, ALBERTA.

DATE OF ISSUE — FEBRUARY 21, 1968
AREA — 19,840 ACRES.



TP. 98

84F/8+9
SE NE

TP. 97

R.13

R.12 W. 5 M.