

# MAR 19680063: FOX LAKE

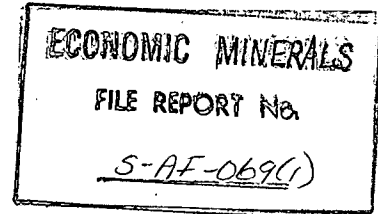
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19680063

REPORT ON FIELD WORK

OF CORE DRILLING

IN THE

FOX LAKE SULPHUR PROSPECT AREA

OF

ALBERTA, CANADA

FOR

JOE PHILLIPS LIMITED

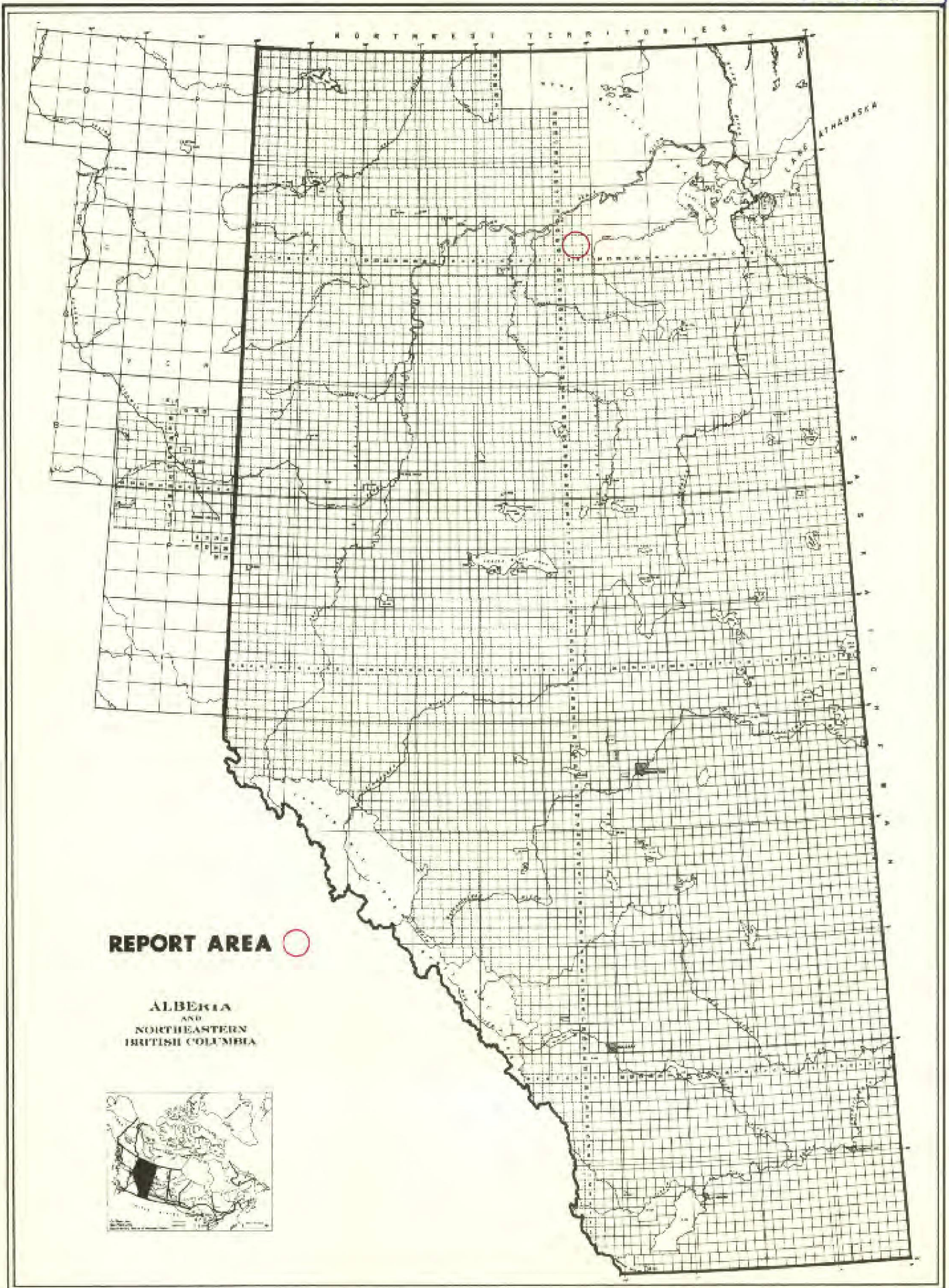
BY

SIGMA EXPLORATIONS LTD.

PROJECT NO. 69

Calgary, Alberta, Canada

April, 1968



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7	RESULTS & RECOMMENDATIONS

Map No.

1	BORE HOLE LOCATION & NUMBERS MAP
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LOCATION OF AREA

The Sulphur Permit is located in Northern Alberta, Twp. 106 to 108, Rge. 1 and 2 W.5M., approximately seven miles west of Wood Buffalo National Park, ten miles southeast of Fox Lake Indian Reserve No. 126 and 65 miles east of the Village of Fort Vermilion.

Topography

Permit Number 69 is located on a very flat swamp and muskeg plain, south of the Peace River. The average surface elevation of the area is approximately 850 feet above sea level and no severe elevation changes were encountered over the area.

The general drainage pattern is toward the east with Harper Creek draining the extreme south portion of the permit area, and other small stream systems draining the central and northern portions.

Forest cover throughout most of the prospect graded from very light to medium with some heavy stands of spruce and poplar occurring along the main creeks. The high ground in the area was covered with poplar while the lower swamps and muskegs were forested mainly with small spruce, tamarack and willow. No timber of commercial size or quality was noted anywhere in the area.

Access

Access to the area was gained by a winter road running east from Fort Vermilion along the south bank of the Peace River to the Fox Lake Indian Reservé Settlement. From the settlement southward, old seismic cut lines were used to travel into the permit area. The access road crossed two major rivers, the Wabasca River some 29 miles east of Fort Vermilion and the Mikkwa River 65 miles east. Crossings of these rivers were made on the ice. This road is not useable during the summer months.

A small airstrip is located at the Fox Lake Settlement and was used by chartered aircraft to deliver some supplies during field operations.

Weather

The weather conditions encountered during the field operation were unseasonably warm with day temperatures of +40<sup>o</sup> to +50<sup>o</sup> general in the area. Thus some difficulty was encountered by vehicles travelling on roads and trails during this time and great care had to be taken with heavy equipment at all ice crossings.

FIELD OPERATIONS

Field operations were commenced on the permit area March 16, 1968, and concluded on March 20, 1968. During this period a total of 742 feet of core drilling were completed and some 21 miles of line were cleaned by the bulldozers.

Other exploration programs were done by the crew and equipment in the vicinity of the Fox Lake Indian Reserve during the latter part of March. Thus the costs of moving the camp and equipment from Fort Vermilion to Fox Lake and return was divided between the operating companies.

Bulldozer operations were started on March 16 using a single Caterpillar D-7-A. This machine broke through the frost in the muskeg within three hours of starting the operation and had to be replaced by a wide pad Caterpillar D-6-A which completed all necessary snowplowing. During this period a total of 31 miles of existing line were snowplowed and 61.5 hours of bulldozer time was utilized on this permit. The bulldozer thus averaged approximately two hours per mile for all moving and snowplowing on this permit.

Drilling

Drilling operations were carried out by the Becker Hammer drills BMT-1 and #508. The BMT-1 rig was operated with two shifts

24 hours a day while 508 was operated on a single shift basis in daylight hours. The drilling program was completed March 20, 1968.

Bedrock was encountered at nearly all holes drilling in the southwest portion of the permit area north of Harper Creek. The average depth of this bedrock appeared to be approximately ten feet, and it appeared to be mostly a light-coloured, well-cemented sandstone lying directly under the clay. No evidence of hard shales were found in this area. North and east of this point glacial material consisting of clays and soft shales were encountered in most holes. There were a few rocks in the clay but no gravel deposits. Very little surface sand was encountered on this prospect.

During the period, March 19 to March 20, a total of 39 holes were drilled to an average depth of 25 feet except where bedrock was encountered above this depth, or where the client requested 40 foot tests. The drills averaged 16.3 feet per hour on this project including setting up and move time. Because of the problems of long moves between hole locations, and the presence of bedrock close to surface near the south end of the prospect, this rate per hour is somewhat lower than would be normally expected.



Chip samples were taken at the top of the bedrock and drilling suspended where shallow bedrock was encountered except on a few locations where it was requested by the supervisor that drilling continue ten feet into the rock. In order to complete as much of the program as possible, a minimum of time was spent on drilling into the bedrock.

### Sampling

An average of 13 samples were taken per hole at intervals of every two feet to a depth of 25 feet and four feet to 40 feet, with clean, representative samples being obtained at each hole.

Most holes started in brown clay, except in heavy muskeg areas where one foot to three feet of muskeg was overlying the clay. Very few problems were encountered in getting samples in any of these materials except in some of the heavily water-soaked clays which appeared to stick to the sides of the drill stem and came out of the discharge hose in lengths of two to four feet. Fortunately very little of this material was encountered.

### Plugging

Holes were plugged with metal Trojan hole plugs or four foot wooden hole plugs in accordance with the required geophysical regulations.


Surveying

No vertical control was carried over the permit area, but horizontal control was maintained by chaining. A transit was used to turn off angles for the new cut lines and to check angles at intersections of existing lines. Control was established from maps made from aerial surveys showing existing seismic cut lines or identifiable topographic features on the ground.

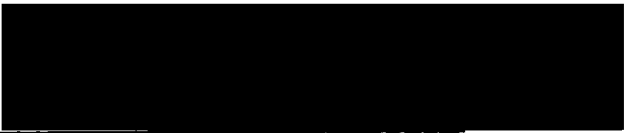
RESULTS & RECOMMENDATIONS

Samples from all of the drill holes were inventoried and transmitted to Chemical & Geological Laboratories Ltd. in Calgary for assaying as per Mr. Ewing's request. He selected the samples to be assayed and all the results were sent directly to him. No recommendations can be made on the basis of the assay results.

Respectfully submitted,

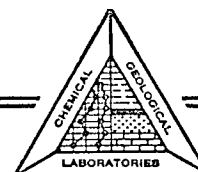
  
James D. Fowlie  
Supervisor

Approved:

  
W. N. Rabey, P. Eng.

# CHEMICAL & GEOLOGICAL LABORATORIES LTD.

14240-115 AVENUE, EDMONTON, ALBERTA



Date Reported: April 24, 1968

Laboratory Report Number: C68-3559

## JOE PHILLIPS LIMITED

KIND OF SAMPLE: Sulfur Soils

Date Received: April 8, 1968

105 Composite soils from Permit 69 as listed on previous report  
Laboratory Number C68-3543, for geiger check.

<u>COMPOSITE SAMPLE NUMBER</u>	<u>DRILL HOLE NUMBER</u>	<u>GEIGER READING (Milliroentgens)</u>
1	69-1-31	0.01
2	"	0.01
3	"	0.01
4	69-1-34	0.01
5	"	0.02
6	69-1-35	0.01
7	"	0.01
8	69-2-36	0.02
9	69-2-37	0.02
10	69-2-38	0.02
11	"	0.02
12	69-2-39	0.01
13	"	0.01
14	"	0.02
15	69-1-4	0.01
16	"	0.01
17	69-1-5	0.01

continued.....

Joe Phillips Limited

Laboratory Report Number: C60-3559

<u>COMPOSITE SAMPLE NUMBER</u>	<u>DRILL HOLE NUMBER</u>	<u>GEIGER READING (Milliroentgens)</u>
18	69-1-5	0.01
19	69-1-6	0.02
20	"	0.01
21	69-1-7	0.02
22	"	0.01
23	69-1-8	0.01
24	"	0.01
25	"	0.01
26	69-2-19	0.02
27	"	0.02
28	"	0.01
29	69-2-20	0.02
30	69-2-20	0.02
31	"	0.02
32	69-2-21	0.02
33	"	0.01
34	"	0.01
35	69-2-22	0.01
36	"	0.01
37	"	0.01
38	69-1-9	0.01
39	"	0.02
40	"	0.02
41	"	0.02
42	69-1-10	0.02

continued.....

<u>COMPOSITE SAMPLE NUMBER</u>	<u>DRILL HOLE NUMBER</u> &	<u>GEIGER READING (Milliroentgens)</u>
43	69-1-10	0.02
44	"	0.01
45	"	0.01
46	69-1-11	0.02
47	"	0.01
48	"	0.01
49	"	0.01
50	"	0.01
51	69-1-12	0.02
52	"	0.02
53	"	0.01
54	"	0.01
55	69-1-13	0.02
56	"	0.01
57	69-1-13	0.02
58	"	0.02
59	69-1-14	0.01
60	"	0.01
61	"	0.01
62	69-1-15	0.01
63	"	0.01
64	"	0.01
65	"	0.01
66	69-1-16	0.02
67	"	0.02

continued.....

<u>COMPOSITE SAMPLE NUMBER</u>	<u>DRILL HOLE NUMBER</u> &	<u>GEIGER READING (Milliroentgens)</u>
68	69-1-16	0.02
69	"	0.02
70	69-3-17	0.02
71	"	0.03
72	"	0.03
73	"	0.02
74	69-3-18	0.03
75	"	0.03
76	"	0.02
77	"	0.02
78	69-3-23	0.01
79	"	0.01
80	"	0.02
81	"	0.02
82	69-4-24	0.03
83	" "	0.03
84	69-4-25	0.03
85	"	0.02
86	"	0.03
87	69-4-26	0.03
88	69-4-27	0.03
89	69-1-1	0.02
90	"	0.01
91	"	0.01
92	69-1-2	0.02
93	"	0.02

continued.....

John Phillips Limited

Laboratory Report Number: C68-3559

<u>COMPOSITE SAMPLE NUMBER</u>	<u>DRILL HOLE NUMBER</u> &	<u>GEIGER READING (Milliroentgens)</u>
94	69-1-3	0.01
95	"	0.02
96	69-4-28	0.03
97	"	0.02
98	69-4-29	0.02
99	69-4-30	0.03
100	"	0.03
101	69-4-32	0.03
102	"	0.02
103	69-4-33	0.02
104	"	0.02
105	"	0.01

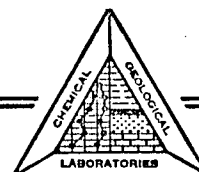
We would draw your attention to the following:

- (1) Although readings are low, they all gave a reading.
- (2) Grid line samples from #3 and #4 gave slightly higher readings.



# CHEMICAL & GEOLOGICAL LABORATORIES LTD.

14240-115 AVENUE, EDMONTON, ALBERTA



Date Reported: April 22, 1968

Laboratory Report Number: C68-3543

## JOE PHILLIPS LIMITED

KIND OF SAMPLE: Soils

Well: Prospect 69

Date Received: April 8, 1968

Sulfur determinations to be made on composite samples.

<u>COMPOSITE SAMPLE NUMBER</u>	<u>DRILLHOLE NUMBER</u>	<u>COMPOSITE SAMPLES FROM DEPTH IN FEET</u>	<u>% OF SULFUR</u>
1	69-1-31	2,4, 6, 8	0.59
2	"	10, 12, 14, 16	2.17
3	"	18, 20, 22, 24, 25	1.90
4	69-1-34	2, 4, 6, 8	Trace
5	"	10, 11	0.99
6	69-1-35	2, 4, 6	0.14
7	"	8, 10	Trace
8	69-2-36	4, 6, 8, 9	2.90
9	69-2-37	2, 4, 6, 8, 10	0.47
10	69-2-38	2, 4, 6, 8	Trace
11	"	10, 12	Trace
12	69-2-39	2, 4, 6, 8	0.64
13	"	10, 12, 14, 16	Trace
14	"	18, 20	Trace

continued.....

Phillips Limited

Laboratory Report Number: C68-3543

<u>COMPOSITE SAMPLE NUMBER</u>	<u>DRILLHOLE NUMBER</u>	<u>COMPOSITE SAMPLES FROM DEPTH IN FEET</u>	<u>% OF SULFUR</u>
15	69-1-4	2, 4, 6, 8	0.67
16	"	10, 12, 14, 16	1.28
17	69-1-5	2, 4, 6, 8	Trace
18	"	10, 12, 14	Trace
19	69-1-6	2, 4, 6	0.80
20	"	8, 10, 12	Trace
21	69-1-7	2, 4, 6, 8	0.87
22	"	10, 12, 14	Trace
23	69-1-8	2, 4, 6, 8	1.34
24	"	10, 12, 14, 16	1.48
25	"	18, 20, 22, 25	1.02
26	69-2-19	2, 4, 6, 8	1.58
27	"	10, 12, 14, 16	1.52
28	"	18, 20	Trace
29	69-2-20	2, 4, 6, 8	0.34
30	69-2-20	10, 12, 14, 16	1.10
31	"	18, 20, 22, 25	1.98
32	69-2-21	2, 4, 6, 8	0.95
33	"	10, 12, 14, 16	0.53
34	"	18, 20, 22, 25	1.01
35	69-2-22	2, 4, 6, 8	Trace
36	"	10, 12, 14, 16	Trace
37	"	18, 20, 25, 29	Trace
38	69-1-9	2, 4, 6, 8	Trace
39	"	10, 12, 14, 16	Trace
40	"	18, 20, 22	Trace

continued.....

Joe Phillips LimitedLaboratory Report Number: C68-3543

<u>COMPOSITE SAMPLE NUMBER</u>	<u>DRILLHOLE NUMBER</u>	<u>COMPOSITE SAMPLES FROM DEPTH IN FEET</u>	<u>% OF SULFUR</u>
41	69-1-9	24, 25	Trace
42	69-1-10	2, 4, 6, 8	0.81
43	"	10, 12, 14, 16	0.20
44	"	18, 20, 22	Trace
45	"	24, 25	0.75
46	69-1-11	2, 4, 6, 8	0.24
47	"	10, 12, 14, 16	Trace
48	"	18, 20, 22, 24	2.03
49	"	25, 28, 32	1.59
50	"	36, 40	2.15
51	69-1-12	2, 4, 6, 8	0.62
52	"	10, 12, 14, 16	1.28
53	"	18, 20	1.39
54	"	22, 24, 25	0.50
55	69-1-13	2, 4, 6, 8	Trace
56	"	10, 12, 14, 16	1.24
57	"	18, 20	Trace
58	"	22, 24, 25	Trace
59	69-1-14	2, 4, 6, 8	0.78
60	"	10, 12, 14, 16	0.78
61	"	18, 20, 24, 25	0.78
62	69-1-15	2, 4, 6, 8	0.78
63	"	10, 12, 14, 16	0.20
64	"	18, 20, 22, 24	0.30
65	"	28, 32, 36, 40	1.05
66	69-1-16	2, 4, 6, 8	Trace
67	"	10, 12, 14	0.58

continued.....

Joe Phillips LimitedLaboratory Report Number: C68-3543

<u>COMPOSITE SAMPLE NUMBER</u>	<u>DRILLHOLE NUMBER</u>	<u>COMPOSITE SAMPLES FROM DEPTH IN FEET</u>	<u>% OF SULFUR</u>
68	69-1-16	16, 18, 20	0.29
69	"	22, 24, 25	0.82
70	69-3-17	2, 4, 6, 8	0.42
71	"	10, 12, 14, 16	Trace
72	"	18, 20, 22	3.04
73	"	24, 25	1.77
74	69-3-18	2, 4, 6, 8	Trace
75	"	10, 12, 14, 16	1.43
76	"	18, 20, 22, 24	0.39
77	"	28, 32, 36, 40	1.17
78	69-3-23	2, 4, 6, 8	Trace
79	"	10, 12, 14, 16	2.11
80	"	18, 20, 22	1.67
81	"	24, 25	0.42
82	69-4-24	2, 4, 6	2.28
83	"	8, 10	3.44
84	69-4-25	2, 4, 6	2.52
85	"	8, 10, 12	0.71
86	"	14, 16, 18, 19	0.63
87	69-4-26	2, 4	Trace
88	69-4-27	2, 4, 6	1.77
89	69-1-1	2, 4, 6, 8	0.46
90	"	10, 12, 14, 16	1.75
91	"	18, 20, 22	1.33
92	69-1-2	2, 4, 6, 8	Trace
93	"	10, 12, 14, 16	0.63

continued.....

Joe Phillips Limited

Laboratory Report Number: C68-3543

<u>COMPOSITE SAMPLE NUMBER</u>	<u>DRILLHOLE NUMBER</u>	<u>COMPOSITE SAMPLES FROM DEPTH IN FEET</u>	<u>% OF SULFUR</u>
94	69-1-3	2, 4, 6	1.07
95	"	8, 10, 12	Trace
96	69-4-28	2, 4, 6	Trace
97	"	8, 10, 12	Trace
98	69-4-29	2, 4, 6	Trace
99	69-4-30	2, 4, 6	1.20
100	"	8, 10, 12	Trace
101	69-4-32	2, 4, 6	Trace
102	"	8, 10, 12	Trace
103	69-4-33	2, 4, 6	Trace
104	"	8, 10	0.60

Rge. 2

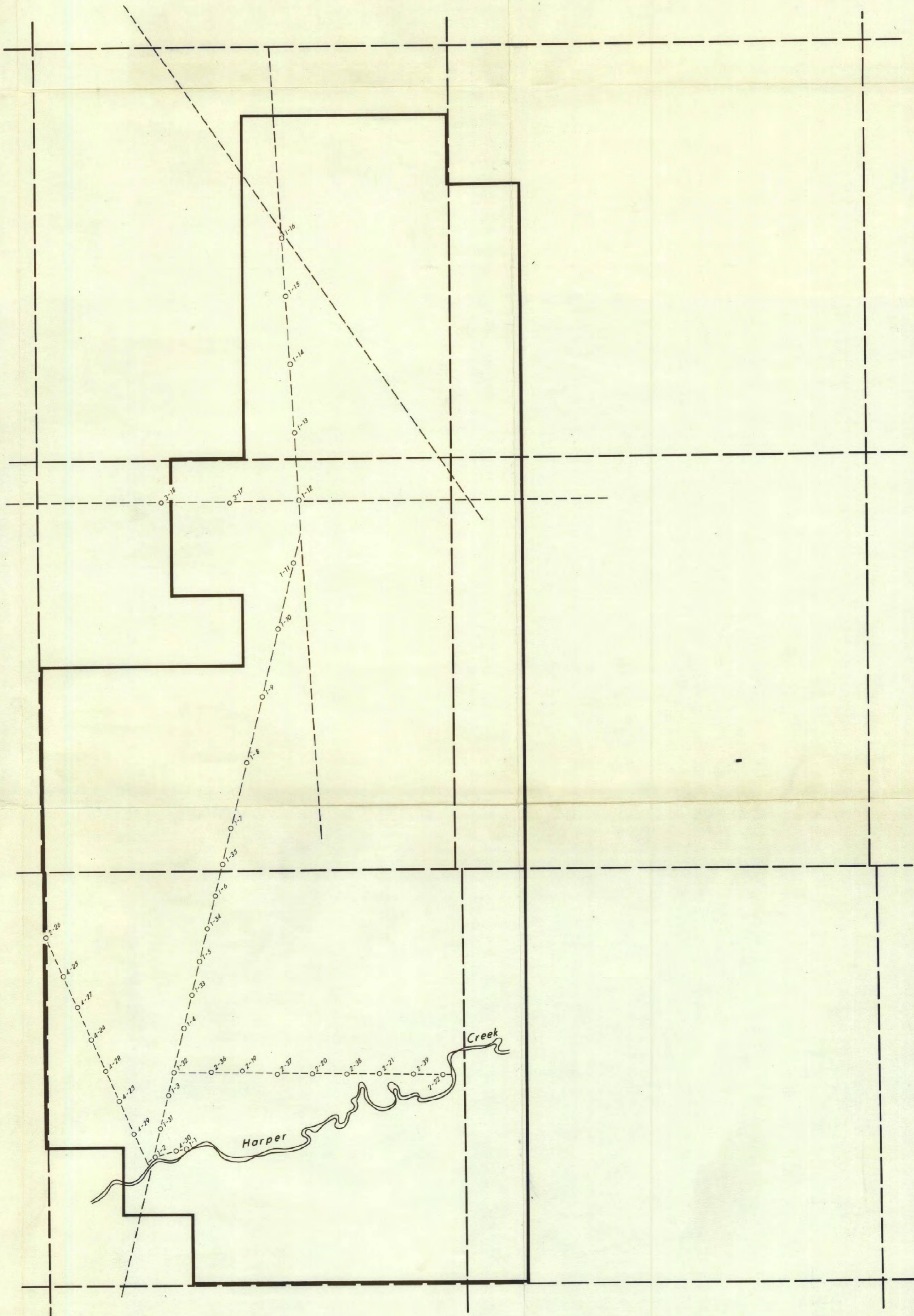
Rge. 1

W.5M.

Twp. 108

Twp. 107

Twp. 106



**LEGEND**

- PERMIT OUTLINE
- o-o-o- EXISTING LINES DRILLED
- - - - - EXISTING ACCESS LINES



**SIGMA EXPLORATIONS LTD.**

309 8th Ave. S.W. Calgary, Alberta Phone 264-7865

**SULPHUR EXPLORATION PROGRAM  
SULPHUR PERMIT No. 69**

SCALE: 1" = 1Mile

MARCH/1968

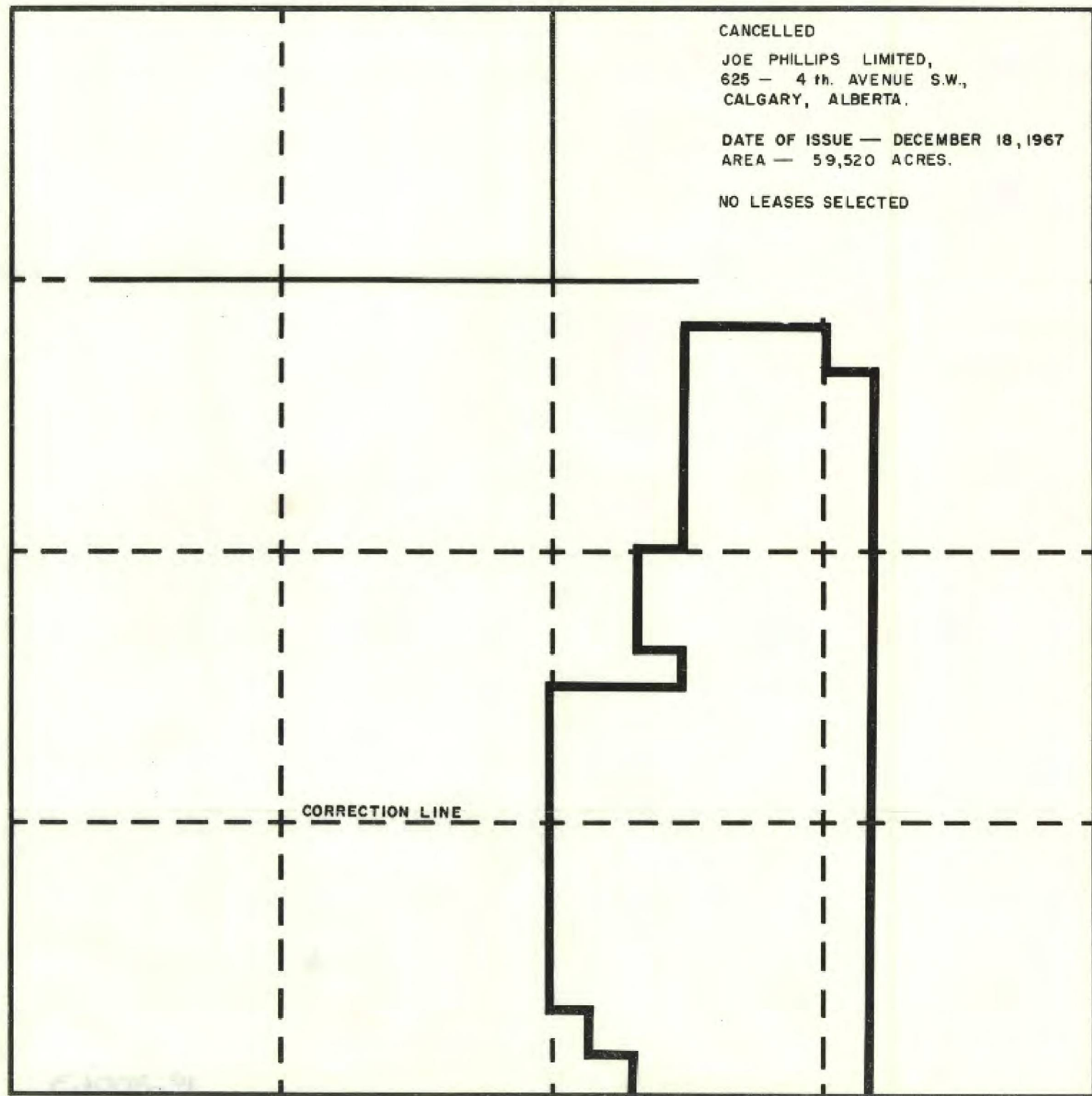
# SULPHUR PROSPECTING PERMIT NO. 69

CANCELLED

JOE PHILLIPS LIMITED,  
625 - 4th AVENUE S.W.,  
CALGARY, ALBERTA.

DATE OF ISSUE — DECEMBER 18, 1967  
AREA — 59,520 ACRES.

NO LEASES SELECTED



TP.108

TP.107

TP.106

845/8

CORRECTION LINE

R. 2

R. 1 W. 5 M.