

# MAR 19680076: WOOD BUFFALO

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SHELL CANADA LIMITED  
REPORT ON  
SULPHUR PROSPECTING PERMIT NO. 81  
WOOD BUFFALO AREA, ALBERTA

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ECONOMIC MINERALS  
FILE REPORT No.  
S-AF-081(1)

In accordance with the terms of the Agreement dated January 8, 1968, we submit the following report on the exploratory examination carried out during the 1967-68 winter season on the subject permit.

LOCATION:

Sulphur Prospecting Permit No. 81 containing 99,840 acres is located in Northern Alberta, Townships 115 to 118, Ranges 1 & 2, West 5th Meridian.

FIELD OPERATIONS:

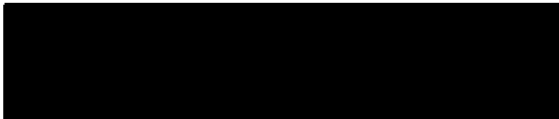
Seismic field party 5, operating for Shell Canada Limited, carried out the drilling of 882 seismic shot holes over the permit area during February, 1968. The holes, which are spaced 300 feet apart, were drilled to a maximum depth of 55 feet by truck mounted 3-1/2 inch auger drills.

The drillers were instructed to look for signs of sulphur and collect samples of the drill cuttings that appeared to contain sulphur. Samples of superficial material containing varying percentages of sulphur were supplied to the drillers to aid in visual examination of the drill cuttings. Enclosure No. 1 shows the auger hole locations examined for sulphur during the drilling program and a bar beside the location indicates the holes at which samples were collected.

ANALYSIS OF SAMPLES:

All samples collected were tested for sulphur by heating and burning of the sampled material. The samples which gave off a sulphurous odor from this test were then submitted to a detailed analysis by the hot Toulene extraction method. The results of samples analyzed by the Toulene method are covered in

Appendix 1 to this report.



O.L. Slind  
District Geologist  
Northern Plains District  
Southern Division Exploration

November 1968

## APPENDIX 1

SULFUR ANALYSIS BY HOT TOULUENE EXTRACTION  
SEISMIC SHOT HOLES

WOOD BUFFALO AREA  
SULFUR PERMIT 81

NOTE:

% Water based on Initial Weight of Sample

% Sulfur based on Dry Weight of Sample

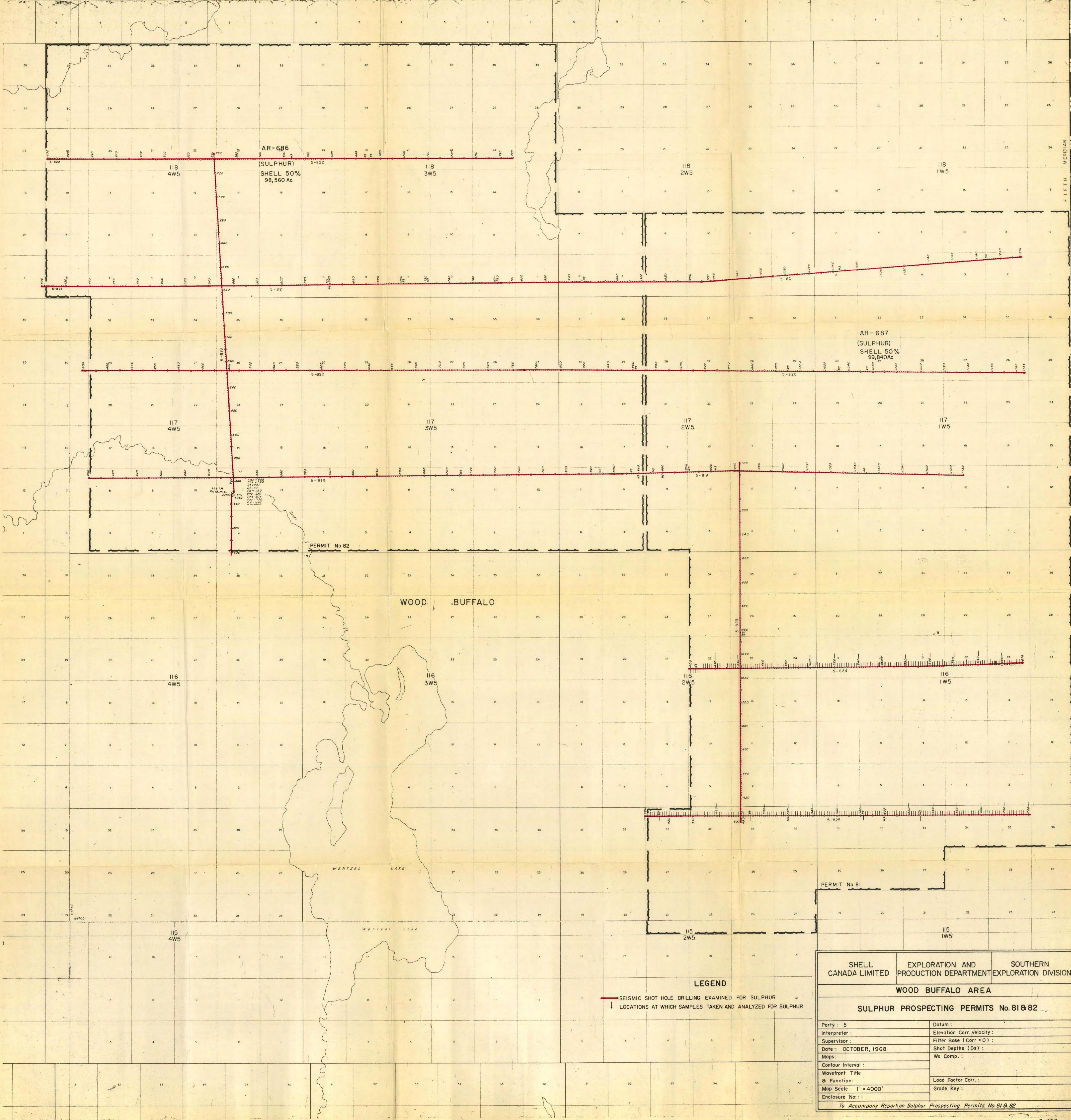
Pty-Line-Hole No.

<u>SAMPLE</u>	<u>DEPTH</u>	<u>% WATER</u>	<u>% SULFUR</u>
5-824-412	40	3.22	-
414	40	3.33	-
416	40	3.35	-
418	10	3.60	-
420	10	2.54	-
422	?	2.76	-
422	40	3.02	-
424	10	2.09	-
440	10	4.01	-
506	10	3.00	-
518	40	3.15	-
520	0-10	2.55	-
520	10-40	9.43	-
522	10-40	2.89	-
524	10-40	2.30	-
524	40	2.26	-
526	10-40	2.29	-
526	40	.87	-
528	10-40	2.22	-
532	40	2	-
534	40	2.39	-
536	10-40	2.79	-
540	10-40	2.08	-
544	0-10	2.14	-
546	10-40	1.17	-
550	40	1	-
564	40	1	-
566	40	2.23	-
568	10	2.74	-
572	40	2.65	-
574	40	1.84	-
576	40	2.12	-
580	40	2.58	-
582	0-10	11.16	-
584	0-10	2.79	-
584	10-40	3.52	-
586	0-10	17.32	-
586	10-40	2.66	-
588	0-10	4.44	-
590	0-10	4.20	-
590	10-40	3.07	-
592	0-10	2.93	-
592	10-40	3.90	-
594	0-10	3.90	-

<u>SAMPLE</u>	<u>DEPTH</u>	<u>% WATER</u>	<u>% SULFUR</u>
594	10-40	4.11	-
596	0-10	3.38	-
596	10-40	2.92	-
598	10-40	3.41	-
600	0-10	12.17	Trace
600	10-40	1.51	Trace
602	0-10	14.38	-
602	10-40	2.76	-
604	0-10	6.26	-
604	10	3.63	-
604	10-40	2.65	-
606	0-10	2.47	-
606	10-40	4.08	-
610	0-10	4.49	-
612	0-10	2.82	-
612	10-40	2.26	-
616	0-10	3.90	-
616	10	2.76	-
616	40	3.06	-
618	10	3.84	-
618	40	4.44	-
620	?	3.65	-
620	40	3.72	-
622	10	4.56	-
624	?	4.50	-
626	10	3.68	-
626	40	3.72	-
628	10	4.31	-
628	40	3.76	-
630	10	4.47	-
630	40	2.34	-
632	?	3.51	-
632	40	3.45	-
634	40	3.78	-
636	40	2.15	-
636	40	4.27	-
638	10	3.98	-
638	40	3.55	-
640	10	3.96	-
640	10-40	3	-
644	10-40	3	-
648	10-40	3	-
650	10-40	3	-
652	10-40	3	-
654	10-40	3	-
5-825-708	0-10	3	-
708	10-40	3	-
5-825-544	10	3.07	-
594	10	6.58	-
594	40	7.41	-
596	10	4.01	-
596	40	2.75	-

<u>SAMPLE</u>	<u>DEPTH</u>	<u>% WATER</u>	<u>% SULFUR</u>
5-825-598	10	3.65	-
598	40	3.71	-
616	40	2.46	-
620	10	2.88	-
622	10	2.11	-
622	40	2.43	-
626	10	4.40	-
630	10	2.07	-
630	40	1.79	-





AR-686  
(SULPHUR)  
SHELL 50%  
98,560 Ac.

AR-687  
(SULPHUR)  
SHELL 50%  
99,840 Ac.

PERMIT No. 82

PERMIT No. 81

WOOD BUFFALO

WENZEL LAKE

WENZEL LAKE

**LEGEND**

- SEISMIC SHOT HOLE DRILLING EXAMINED FOR SULPHUR
- ↓ LOCATIONS AT WHICH SAMPLES TAKEN AND ANALYZED FOR SULPHUR

SHELL CANADA LIMITED		EXPLORATION AND PRODUCTION DEPARTMENT		SOUTHERN EXPLORATION DIVISION	
<b>WOOD BUFFALO AREA</b>					
<b>SULPHUR PROSPECTING PERMITS No. 81 &amp; 82</b>					
Party : 5		Datum :			
Interpreter :		Elevation Corr. Velocity :			
Supervisor :		Filter Base ( Corr = 0 ) :			
Date : OCTOBER, 1968		Shot Depths (Ds) :			
Maps :		Wx Comp. :			
Contour Interval :		Load Factor Corr. :			
Wavefront Title & Function :		Grade Key :			
Map Scale : 1" = 4000'		Enclosure No. : 1			
To Accompany Report on Sulphur Prospecting Permits No. 81 & 82					



# SULPHUR PROSPECTING PERMIT No. 81

SHELL CANADA LIMITED and IMPERIAL OIL  
ENTERPRISES LTD.,  
% SHELL CANADA LIMITED,  
BOX 186,  
EDMONTON, ALBERTA.

DATE OF ISSUE - JANUARY 8, 1968  
AREA - 99,840 ACRES.

TP.118

TP.117

TP.116

TP.115

11048

R. 2

R. 1 W. 5 M.