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Received Answered		14 MAY 1982		
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		DEPT. OF MINES		
		REF. No. 3621/82		

EXPLORATORY WELL PROGNOSIS

CAPE SORELL NO. 1

EXPLORATION PERMIT T-12-P

OFFSHORE WEST TASMANIA

APRIL 1982

AMOCO AUSTRALIA PETROLEUM COMPANY

OR-0358

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SUMMARY

Proposed Location: Shot Point 1060, Seismic Line 81 - 12
9 mi. N 60° W of Cape Sorell, Tasmania
Latitude: 42°08'09.54" S.
Longitude: 145°01'47.06" E.

Water Depth: 305 feet (approx.)

Distance from Shore: 9 miles

Projected Total Depth: 12,000 feet

Expected Drilling Time: 75 days (including testing)

Drilling Contractor/Rig: Diamond M Drilling Co./Diamond M Epoch

Reservoir Objectives: Primary: Upper Cretaceous Sandstones
(Expected Top at 3900 ft)
Lower Cretaceous Sandstones
Secondary: Jurassic Sandstones
(Expected Top at 6500 ft)

Estimated Spud Date: After June 15, 1982

*All depth figures in prognosis refer to subsea (Mean Sealevel) depths, unless otherwise specified.

A. GEOLOGYDescription of the Prospect

The Cape Sorell prospect is a seismically delineated structure lying some 9 miles off the west coast of Tasmania, where water depths are just over 300 ft. Approximately 19,000 acres of areal closure and from 400 to 800 ft. of vertical closure are indicated at the Upper Cretaceous and Top Lower Cretaceous levels, respectively. The structure is about 30 miles long and 15 miles wide. The sub-basin in which it is located resulted from early rifting between Australia and Antarctica during late Jurassic to the early Cretaceous. Main objectives are sandstones equivalent to the Australian Waarre Formation of Upper Cretaceous age and those equivalent to the Pretty Hill Formation of Top Lower Cretaceous. Seals and source rocks are expected to be Upper Cretaceous and possibly Jurassic to Lower Cretaceous marine shales. Reservoir porosities and permeabilities are expected to be similar to those of the equivalent sandstones in the Otway Basin; there they exhibit from 15 to 25% porosity and fair to good permeability.

Stratigraphy

The anticipated stratigraphic sequence for this well includes the interval from Plio-Pleistocene marine shales at the sea bed to Paleozoic (?) continental clastics at the projected total depth of 12,000 ft. The

CAPE SORELL SUB - BASIN (PREDICTED)

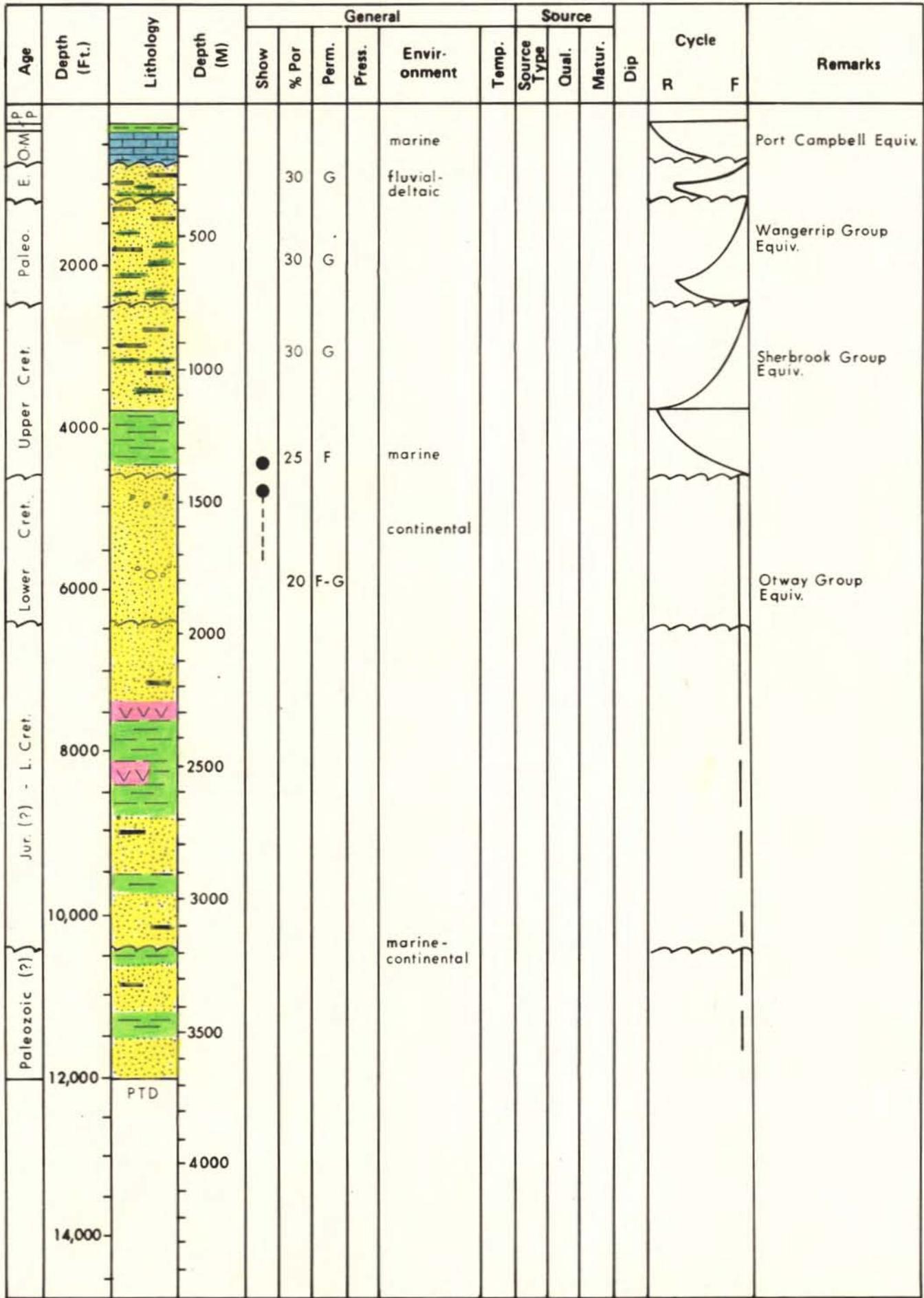
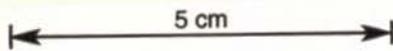


Figure 2

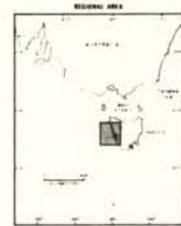
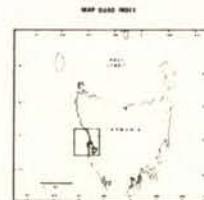
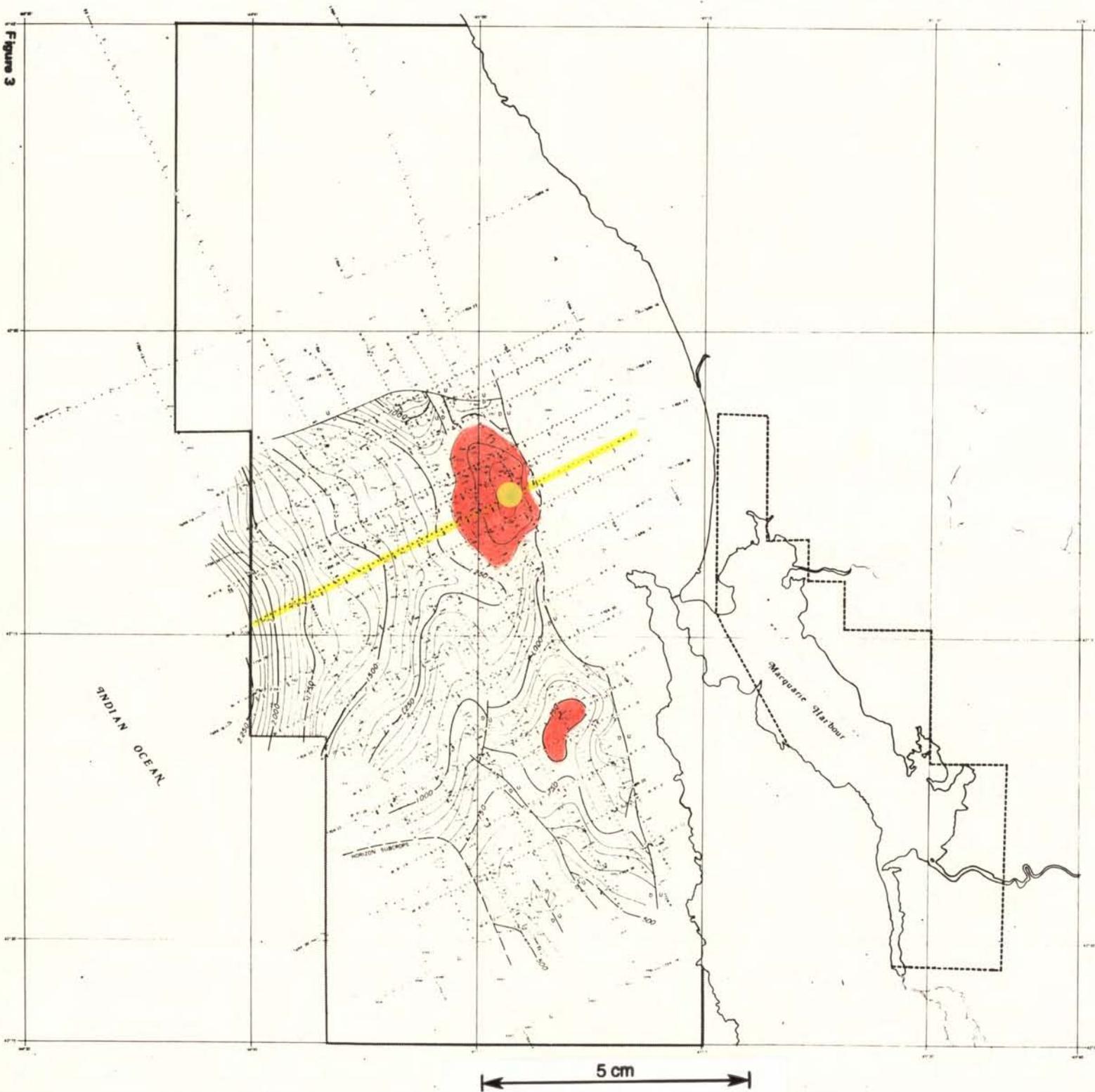


generalized lithological character of the different stratigraphic divisions shown on the graphic column of Fig. 2 may be summarized as follows:

Plio-Pleistocene	Sea floor (305') to approx.	425'	Marine shales
Oligocene-Miocene	Approx. 425' to approx.	750'	Marine limestone and shales
Eocene	" 750' to "	2500'	Fluvio-deltaic clastics
Upper Cretaceous	" 2500' to "	3750'	Fluvio-deltaic clastics
Upper Cretaceous	" 3750' to "	4600'	*Marine shales with basal sandstone (?)
Lower Cretaceous	" 4600' to "	6500'	*Continental clastics
Jurassic(?)- Lower Cretaceous	" 6500' to "	10,400'	*Marine/Continental clastics
Paleozoic (?)	" 10,400' to "	12,000'	Marine/Continental clastics

* Primary zone of interest lies in the interval from approx. 3900' to 7000'.
Note also: a "bright spot" at about 4200' is to be approached with caution while drilling.

Figure 3



WELL DATA

WELL NO.	DATE	DEPTH (m)	VELOCITY (km/s)
1	1961	100	1.6
2	1961	200	1.7
3	1961	300	1.8
4	1961	400	1.9
5	1961	500	2.0
6	1961	600	2.1
7	1961	700	2.2
8	1961	800	2.3
9	1961	900	2.4
10	1961	1000	2.5
11	1961	1100	2.6
12	1961	1200	2.7
13	1961	1300	2.8
14	1961	1400	2.9
15	1961	1500	3.0
16	1961	1600	3.1
17	1961	1700	3.2
18	1961	1800	3.3
19	1961	1900	3.4
20	1961	2000	3.5
21	1961	2100	3.6
22	1961	2200	3.7
23	1961	2300	3.8
24	1961	2400	3.9
25	1961	2500	4.0
26	1961	2600	4.1
27	1961	2700	4.2
28	1961	2800	4.3
29	1961	2900	4.4
30	1961	3000	4.5
31	1961	3100	4.6
32	1961	3200	4.7
33	1961	3300	4.8
34	1961	3400	4.9
35	1961	3500	5.0
36	1961	3600	5.1
37	1961	3700	5.2
38	1961	3800	5.3
39	1961	3900	5.4
40	1961	4000	5.5
41	1961	4100	5.6
42	1961	4200	5.7
43	1961	4300	5.8
44	1961	4400	5.9
45	1961	4500	6.0
46	1961	4600	6.1
47	1961	4700	6.2
48	1961	4800	6.3
49	1961	4900	6.4
50	1961	5000	6.5
51	1961	5100	6.6
52	1961	5200	6.7
53	1961	5300	6.8
54	1961	5400	6.9
55	1961	5500	7.0
56	1961	5600	7.1
57	1961	5700	7.2
58	1961	5800	7.3
59	1961	5900	7.4
60	1961	6000	7.5
61	1961	6100	7.6
62	1961	6200	7.7
63	1961	6300	7.8
64	1961	6400	7.9
65	1961	6500	8.0
66	1961	6600	8.1
67	1961	6700	8.2
68	1961	6800	8.3
69	1961	6900	8.4
70	1961	7000	8.5
71	1961	7100	8.6
72	1961	7200	8.7
73	1961	7300	8.8
74	1961	7400	8.9
75	1961	7500	9.0
76	1961	7600	9.1
77	1961	7700	9.2
78	1961	7800	9.3
79	1961	7900	9.4
80	1961	8000	9.5
81	1961	8100	9.6
82	1961	8200	9.7
83	1961	8300	9.8
84	1961	8400	9.9
85	1961	8500	10.0
86	1961	8600	10.1
87	1961	8700	10.2
88	1961	8800	10.3
89	1961	8900	10.4
90	1961	9000	10.5
91	1961	9100	10.6
92	1961	9200	10.7
93	1961	9300	10.8
94	1961	9400	10.9
95	1961	9500	11.0
96	1961	9600	11.1
97	1961	9700	11.2
98	1961	9800	11.3
99	1961	9900	11.4
100	1961	10000	11.5

MAP REFERENCE DATA

WELL NO.	DATE	DEPTH (m)	VELOCITY (km/s)
1	1961	100	1.6
2	1961	200	1.7
3	1961	300	1.8
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19	1961	1900	3.4
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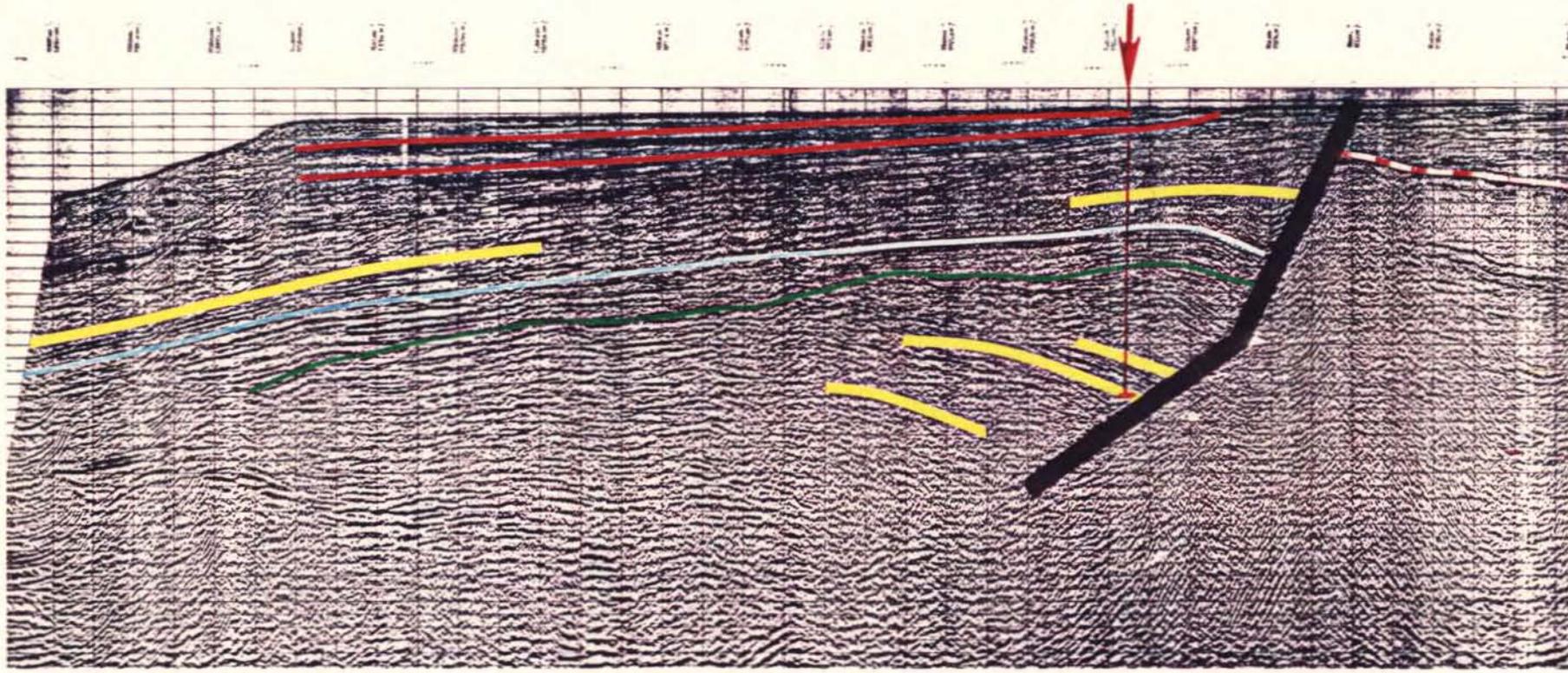
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39	1961	3900	5.4
40	1961	4000	5.5
41	1961	4100	5.6
42	1961	4200	5.7
43	1961	4300	5.8
44	1961	4400	5.9
45	1961	4500	6.0
46	1961	4600	6.1
47	1961		

LINE 81-12

SW

Cape Sorell No. 1

NE



AMERICAN OVERSEAS OIL CO.
Geophysical Department
P.O. Box 100
Houston, Texas 77001
© 1968

5 cm

Figure 5

459011

WELLSITE OPERATIONSMud Logging

The well will be monitored continuously from the shoe of the 20-inch casing to total depth for down-hole pressure information and hydrocarbon evaluation. A hot wire gas detector and chromatograph will be in continuous operation from the 30-inch casing shoe to final depth. Specific instructions to the mud logging team regarding requirements for collecting, recording, and reporting geological data will be provided in advance of spudding the well by the Amoco geological representative.

Wireline Logging

An Amoco geologist or well log analyst will be available to assist in the planning and evaluation of all wireline logging. The specific logging program listed in the drilling operations portion is designated to ensure the best possible evaluation of this exploratory well. It will be followed as closely as possible, but it may be modified if unforeseen problems dictate changes.

Testing

The principal, but not necessarily exclusive, method of evaluating prospective pay zones in the well will be that of drillstem testing before

and after setting the casing. The following data will be collected for all tests:

- 1) Stabilized gas or oil production rates.
- 2) Water production rates.
- 3) B.S.&W. percentages.
- 4) Gravities of oil, condensate, gas and water.
- 5) Salinities and resistivities of formation water.
- 6) Pour-point of condensate or oil.
- 7) Rough wellhead composition of gas.
- 8) Bottom hole pressure, buildups, and drawdowns.
- 9) Bottom hole temperature (by thermometer).
- 10) Surface pressures, temperatures, and flow rate versus time.
- 11) Drums and one quart samples of condensate or oil.
- 12) Companion samples of oil and gas (3-gal. cylinders).
- 13) Samples of formation water.
- 14) Pressurized bottom-hole oil sample.

In addition to samples required for engineering studies, one quart samples of all fluids tested will be sent to the Geological Research Director of Amoco Production Research in Tulsa, Oklahoma, for geochemical analyses. These samples will be collected in metal containers, and care should be taken to avoid contamination by any type of foreign organic material.

Coring

Conventional cores will be cut in any potential reservoir rock that has good quality hydrocarbon shows. All cores will be cut at the discretion of the Amoco wellsite geologist. Cores taken will be shipped directly to the Geological Research Director of Amoco Production Research, Tulsa, Oklahoma.

Cuttings/Sidewall Cores

Cuttings will be collected at 30-foot intervals (and when feasible, at 20-foot intervals) from the 30" casing shoe at about 600 feet to a depth of 3000' and thence at 10-foot intervals to total depth. In addition to seven (7) sets of washed and dried sample cuts (two of which must weigh at least 100 grams) in envelopes, two regular cloth bag samples will be collected at the intervals and depth ranges described above. The two sets of regular-size cloth bag samples should be lightly washed to remove drilling fluid and air dried. They will be sent to the Amoco Production Company's Research Lab at Tulsa for special studies (following the completion of wellsite evaluation).

Sidewall cores are planned to check porosity/permeability, lithology and shows in potential reservoir beds, and for use in paleontological/palynological analysis. Ample sidewall cores will be taken in order to accomplish these objectives.

Velocity Survey

A velocity survey will be conducted at total depth after the final logging run.

MF/mdr
208/G

B. DRILLING OPERATIONSCASING PROGRAM (Tentative)

<u>Casing Size</u>	<u>Anticipated Setting Depths</u>	<u>Hole Size</u>
30"	600 ft.	36"
20"	1,100 ft.	12½" opened to 26",
13-3/8"	4,000 ft.	12½" opened to 17½"
9-5/8"	8,000 ft.	12½"
7"	12,000 ft.	8½" (if necessary)

MUD PROGRAM

<u>DEPTH</u>	<u>MUD TYPE</u>	<u>MUD WEIGHT (lb./gal.)</u>	<u>VISCOSITY</u>	<u>WATER LOSS (cc/30 min.)</u>
Mudline - 4,000'	Seawater - w/viscous sweeps	*	-	-
4,000' - TD	Dispersed/ Seawater	*		

Note:

- * Required mud weight will be based on pore pressure calculated while drilling.
- * All depths are below mean sea level.

LOGGING PROGRAM

Run No. 1 (600' - 1,100'):

- 1) DIS or ISF-Sonic-GR-SP
- 2) FDC-CNL-GR w/ tension curve
- 3) HDT

Run Nos. 2 (1,100' - 4,000'), 3 (4,000' - 8,000'), and 4 (8,000' - 12,000')

- 1) DLL-GR-MSFL w/SP
- 2) DIS or ISF-Sonic-GR-SP
- 3) FDC-CNL-NGS w/ tension curve
- 4) HDT
- 5) CST
- 6) RFT (when necessary)

Note: Add velocity survey to Run 4.

- * Record Natural Gamma Ray Spectroscopy (NGS) 5 times at a maximum speed of 600 feet/hour over all cored intervals.

GENERAL PROCEDURE

The following is a general outline of the anticipated procedure for drilling the Cape Sorell No. 1 well. Deviations from this procedure may be dictated by conditions prevailing at the time of the drilling of the well.

- 1) Position Rig over location and set anchors.
- 2) Set temporary guide base.
- 3) Drill 36" hole to \pm 600 feet MSL.
- 4) Run and cement 30" casing with \pm 1320 sx class "G" cement.
- 5) Install marine riser and diverter system.
- 6) Drill 12 $\frac{1}{4}$ " hole to \pm 1,100 feet MSL.
- 7) Run wireline logs (see Logging Program No. 1).
- 8) Open hole to 26" with underreamer.
- 9) Run and cement 20" casing with \pm 1620 sx. class "G" cement.
- 10) Install B.O.P. stack and riser.
- 11) Drill 12 $\frac{1}{4}$ " hole to \pm 4,000 feet MSL.
- 12) Run wireline logs (see Logging Program No. 2).
- 13) Open hole to 17 $\frac{1}{2}$ " with underreamer.
- 14) Run and cement 13-3/8" casing with \pm 1520 sx. class "G" cement.
- 15) Core objective formation through any hydrocarbon shows.
- 16) Drill 12 $\frac{1}{4}$ " hole to \pm 8,000 feet MSL.
- 17) Run wireline logs (see Logging Program No. 3).

- 18) Run and cement 9-5/8" casing with \pm 900 sx. class "G" cement, if warranted.
- 19) Drill stem test potential intervals as desired.
- 20) Drill 8½" hole to \pm 12,000 feet MSL.
- 21) Run wireline Logs (See Logging Program Program No. 4)
- 22) Run and cement 7" casing with class "G" cement if warranted.
- 23) Abandon well, providing for reentry, if necessary.

NOTE: (a) Conventional cores may be taken within any potentially productive intervals as shows and hole conditions dictate.

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