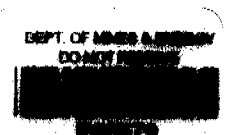
PR 84/3B

WELL COMPLETION REPORT

WEST MEREENIE NO. 3

Oilmin N.L.,
27-35 Turbot Street,
BRISBANE, QLD. 4000

September, 1983



C O N T E N T S

FIGURES

TABLES

APPENDICES

ENCLOSURES

1. SUMMARY

1. SUMMARY

West Mereenie No. 3 is the seventh well of a 20 well appraisal programme to delineate and develop the Mereenie oilfield. It was drilled to test the production potential of the P3 reservoirs on the northwestern flank of the field. The well is located approximately one mile northwest of Mereenie No. 1 and the Pacoota Sandstone was penetrated at approximately the same structural level as West Mereenie No. 2. (See Figures 1 and 2)

The well was spudded on the 7th January, 1983 using the OIME SL750 Mereenie Rig 1, and reached a total depth of 5095 feet in the Goyder Formation on the 22nd February, 1983.

The well was drilled with air and air foam from surface to the 15" casing point and thence to 10-3/4" casing point at 2125 feet. During the drilling of the Mereenie Sandstone, water influx necessitated the injection of foam at rates of up to 10 barrels per hour. After setting the 10-3/4" casing, drilling continued with air to 4030 feet, 30 feet below the top of the Pacoota P1 sub unit. At this point the hole was filled with oil based mud and drilling continued with this system to total depth, at 5095 feet in the Goyder Formation.

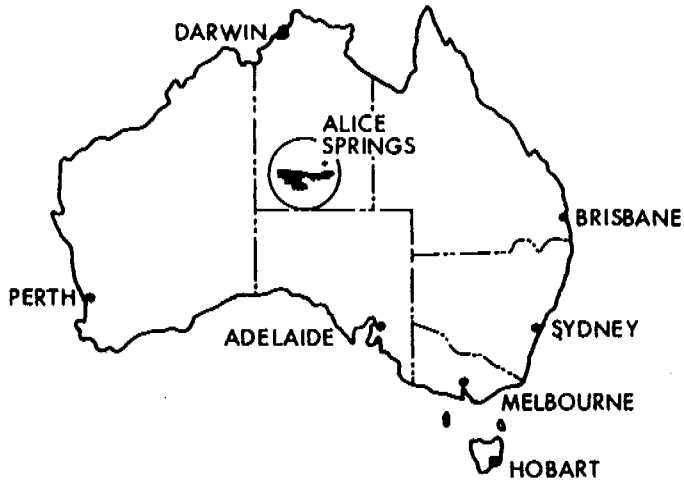
During the drilling of West Mereenie No. 3 the well deviated updip after the 10-3/4" casing shoe. The maximum deviation measured was 10° at 4300 feet, however, on the average, deviation was 5 to 6°. Whilst drilling with air the weight on bit was kept to a minimum to restrict hole deviation. This resulted in some anomalously slow drill rates in this section of the hole.

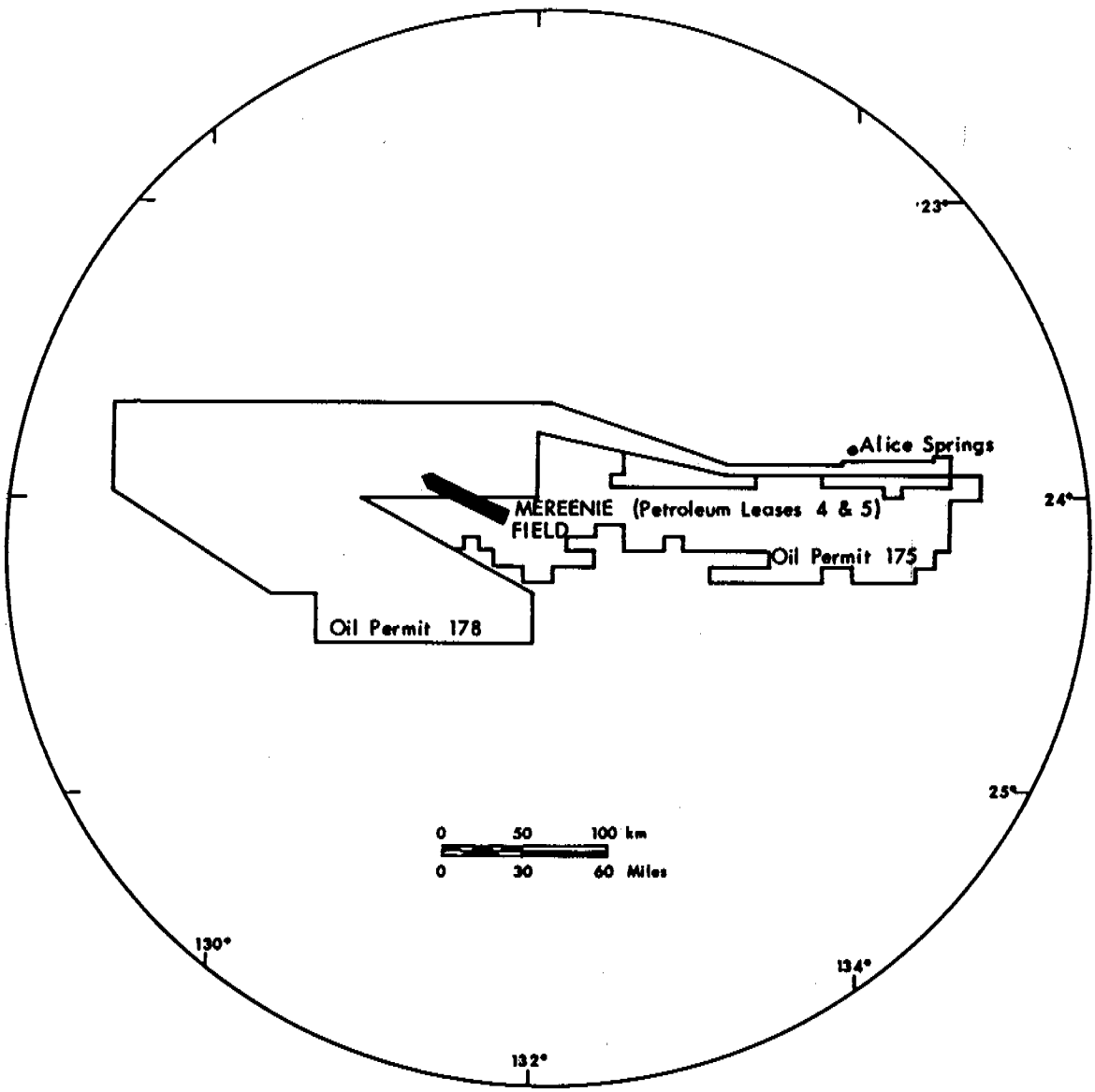
The Pacoota section was evaluated with six cores and five drill stem tests. The main target horizon, the middle to lower P3 sub unit was continuously cored and the entire section tested in three drill stem tests (D.S.T. Nos. 2, 3 and 4). Drill stem test No. 2 flowed oil and gas to surface at 679 BOPD and 490 mcfd respectively, establishing the P3-120 and P3-130 sands as being oil productive. D.S.T. Nos. 3 and 4 recovered only minor quantities of oil and gas cut mud.

Data gathered from the well showed the P1 to have poor porosity except for a 12 foot zone equivalent to the P1-280 sandstone which tested approximately 10 Mmcfd in both West Mereenie Nos. 1 and 2.

As usual the P2 sub unit showed no reservoir potential and although the P4 sub unit has a 20 foot zone of porosity development this was shown to have poor permeabilities. The small amount of water recovered in D.S.T. No. 5 showed that the P4 unit is most probably in the water column.

Neither the oil/water nor the gas/oil contacts could be directly detected however the results of cores and drill stem tests indicate the oil/water contact occurs at approximately 4850 feet (-2363 feet MSL). The gas/oil contact is estimated to occur at 4630 feet (-2143 feet MSL) from data from surrounding wells. This gives an oil column of approximately 220 feet, some 80 to 100 feet thinner than experienced in the P3 in the eastern end of the field.





LOCATION MAP

RLH JUNE, 1983

FIGURE 1

0444

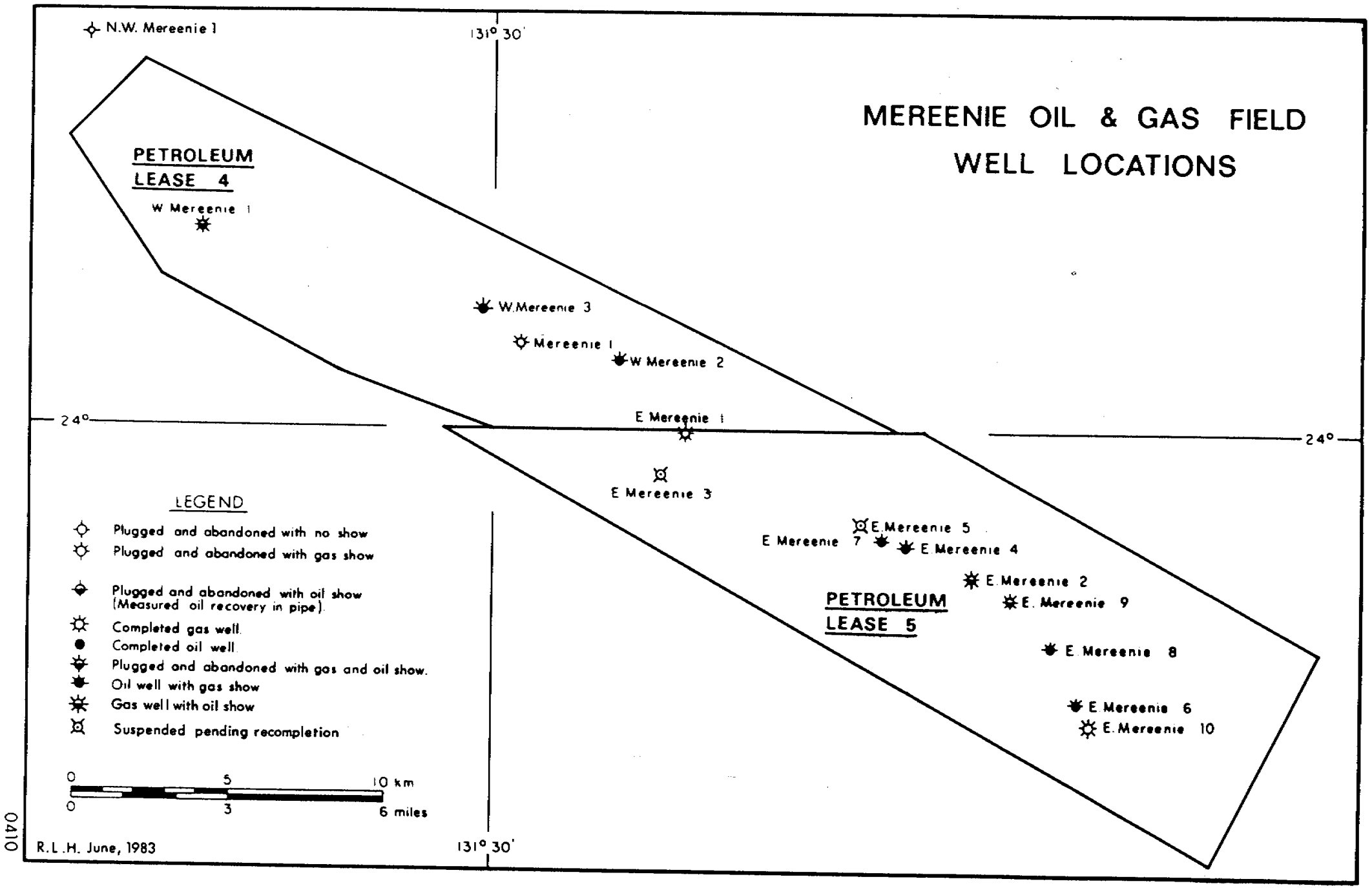

MEREENIE OIL & GAS FIELD
WELL LOCATIONS
N.W. Mereenie 1
131° 30'
PETROLEUM
LEASE 4
W Mereenie 1
W.Mereenie 3
Mereenie 1
W Mereenie 2
24°
E Mereenie 1
E Mereenie 3
E.Mereenie 5
E Mereenie 7
E Mereenie 4
E.Mereenie 2
E. Mereenie 9
PETROLEUM
LEASE 5
E Mereenie 8
E Mereenie 6
E.Mereenie 10
LEGEND
Plugged and abandoned with no show
Plugged and abandoned with gas show
Plugged and abandoned with oil show (Measured oil recovery in pipe).
Completed gas well.
Completed oil well.
Plugged and abandoned with gas and oil show.
Oil well with gas show
Gas well with oil show
Suspended pending recompletion
0 5 10 km
0 3 6 miles
R.L.H. June, 1983
131° 30'
0410

FIGURE 2

At total depth 5-1/2" casing was run to 5093 feet and cemented. The casing was perforated over the P3-130 reservoir interval (4672 to 4714 feet). Production tubing (2-3/8") was run to 4612 feet and the well completed as an oil producer from the Pacoota P3 unit.

2. WELL HISTORY

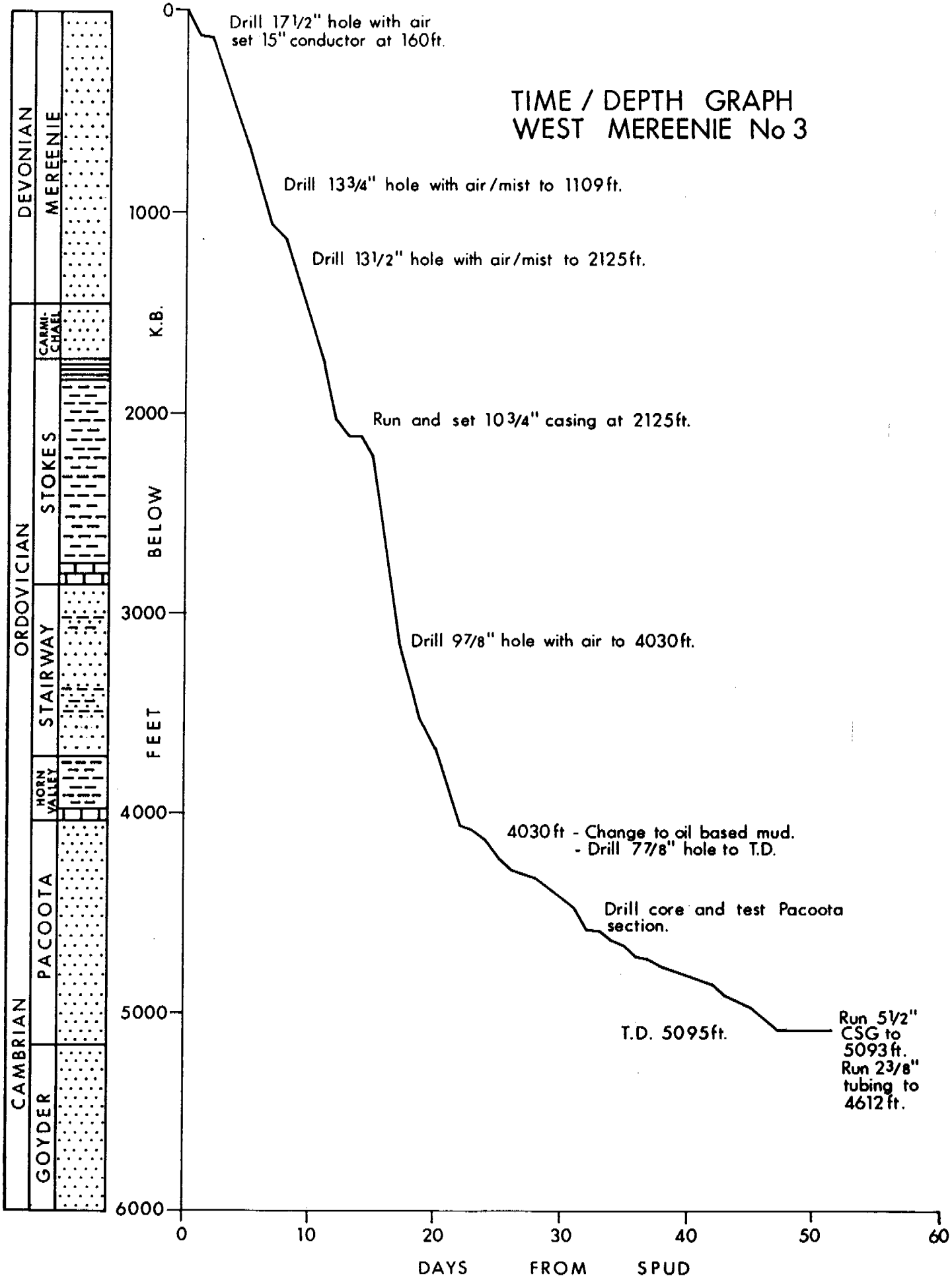
2. WELL HISTORY

Details of depth, time and main operations are shown on the time depth curve (Figure 3).

2.1 General Data

Well name and number:	West Mereenie No. 3.
Operator:	Oilmin N.L.
Beneficial interest holders:	Magellan Petroleum Australia Ltd. Canso Resources Limited Oilmin N.L. Transoil N.L. Petromin N.L. Flinders Petroleum N.L. Moonie Oil Proprietary Ltd.
Petroleum title:	Petroleum Lease No. 4.
District:	Alice Springs, Northern Territory.
Location:	Latitude: 23° 57' 33" S Longitude: 131° 29' 33" E
Elevation:	Ground level: 2467 feet MSL Kelly bushing: 2487 feet MSL (datum for all measurements)
Total depth:	5095 feet (driller) 5092 feet (logger)
Spudded:	7th January, 1983 (0530 hours)
Total depth reached:	22nd February, 1983 (2230 hours)
Rig released:	26th February, 1983 (1600 hours)
Total days drilling:	47 days
Well status:	Completed as an oil producer.
Geological formation tops:	

Mereenie Sandstone	20 feet
Carmichael Sandstone	1522 feet
Stokes Siltstone	1814 feet
Stairway Sandstone	2913 feet
Horn Valley Siltstone	3733 feet
Pacoota Sandstone	4000 feet
Goyder Formation	5062 feet



APRIL 1982

FIGURE 3

2.2 Rig Data

Drilling contractor:	Mereenie Joint Venture Partners		
Drilling plant:	Make:	O.I.M.E.	
	Type:	Model SL-5 (SL-750)	
	Rated capacity:	12,500 ft. with 4-1/2" O.D. drill pipe.	
	Motors:	3 - Caterpillar D-3408 (compounded) 385 B.H.P. each.	
Mast -	Make:	Parco Model P-131	
	Type:	Cantilever	
	Rated capacity:	550,000 lbs. (10 lines)	
Pumps -	Make:	2 - Continental Emsco Triplex.	
	Type:	F-800 - V-belt driven from compound.	
	Size:	6-3/4" x 9"	
Rotary table -	Make:	IDECO LR-275 (27-1/2")	
	Capacity:	570 tons dead load.	
Blowout preventors -	Make:	Cameron	Cameron
	Model:	"U" Double Gate	"D" Annular
	Size:	13-5/8"	13-5/8"
	Rating (PSI)	5000	5000
Choke manifold -	Make:	McEvoy	
	Size & type:	3" - 5000 PSI W.P. choke and kill with one positive and one adjustable choke and Cameron 3" - 5000 H.C.R. flanged valve.	
Mud tanks -	Size & capacity:	3 tank system - returns, settling and suction - Total capacity: 777 barrels.	
Shale shaker -	Make:	Brandt	
	Type:	Single dual screen	
Mud mixers -	Make:	4-Brandt heavy duty.	
	Type:	32" blade - electrically driven	

2.2 Rig Data (Contd.)

Desander -	Make:	DEMCO
	Model:	84, comprising 4 x 8" cones.
	Capacity:	540 to 700 GPM, electrically driven.
Desilter -	Make:	DEMCO
	Model:	412-H, comprising 12 x 4" cones.
	Capacity:	960 to 1080 GPM, electrically driven.
Drill pipe -	4-1/2" O.D. 16.6 lbs/ft. API Grade "E" - EUE. Seamless range 2 - 18° taper, internally coated with 6-1/4" O.D. by 3-1/2" tool joints, hardbanded, 4-1/2" x H connections.	
Drill collars -	6 x 8" O.D. 2-13/16" I.D. x 31 ft. 6-5/8" reg. connections.	
	12 x 7" O.D. 2-13/16" I.D. x 31 ft. 4" I.F. connections.	
	27 x 6-1/2" O.D. 2-1/4" I.D. x 31 ft. 4" I.F. connections.	
	3 x 4-1/8" O.D. 2" I.D. x 31 ft. 3-1/2" reg. connections.	

Air drilling equipment:

Air compressors -	Make:	3 only Sullair units.
	Model:	900/250 D.U.
	Capacity:	900 CFM at 250 PSI each.
Air compressor booster -	Make:	Knight Industries
	Model:	K.O.A. Model 2.
	Capacity:	245 PSI inlet and 1400 PSI discharge at 1500 CFM.
Diverter -	Make:	Shaffer
	Model:	Type 79 rotating BOP.
	Size:	13-5/8"
	Rating:	3000 PSI.
Injection pumps -	Make:	2 only "LATO"
	Model:	LATO L421D
	Capacity:	6 GPM at 2135 PSI each. Powered by Lombardini diesel engines.

2.3 Drilling Data.

2.3.1 Drilling Record

Well: West Mereenie No. 3 ..... Field: Mereenie .....

Date	E.T.D. (ft.)	Details of Operations, Descriptions and Results
1983		
Jan. 7	123	Moved-in and rigged-up Mereenie OIME SL-750 Rig No. 1. Spudded at 0530 hrs. Air drilled 17-1/2" hole to 123 feet.
Jan. 8	160	Drilled 17-1/2" hole to 160 feet. Ran and cemented 15" conductor pipe.
Jan. 9	304	Drilled out cement, reamed hole. Drilled 13-3/4" hole to 304 feet.
Jan. 10	490	Drilled 13-3/4" hole to 490 feet.
Jan. 11	665	Drilled 13-3/4" hole to 665 feet. Air dusting ceased at 560 feet. Foam injection commenced 4 BPH.
Jan. 12	886	Drilled 13-3/4" hole to 886 feet. Hole making approx. 50 BPH water. Foam injection increased to 6 BPH.
Jan. 13	1050	Drilled 13-3/4" hole to 1050 feet. Foam injection increased to 7 BPH.
Jan. 14	1140	Drilled 13-3/4" hole to 1109 feet. Drilled 13-1/2" hole to 1140 feet.
Jan. 15	1380	Drilled 13-1/2" hole to 1380 feet. Foam injection reduced to 6 BPH.
Jan. 16	1511	Drilled 13-1/2" hole to 1438 feet. Reamed hole from 1204 to 1438 feet. Drilled 13-1/2" hole to 1511 feet. Hole making approx. 300 BPH water. Foam injection increased to 7 BPH.
Jan. 17	1785	Drilled 13-1/2" hole to 1785 feet. Hole making over 300 BPH water. Foam injection increased to 10 BPH.
Jan. 18	2039	Drilled 13-1/2" hole to 2039 feet. Survey at 1850 = 3°.
Jan. 19	2125	Drilled 13-1/2" hole to 2125 feet. Strap out of hole, lay out stabilizer and shock sub. Run 10-3/4" casing; 54 joints, 40.5 lbs/ft, H40 to 2120 feet. Cemented with 250 sacks of Class A

Well: West Mereenie No. 3 ..... Field: Mereenie .....

Date	E.T.D. (ft.)	Details of Operations, Descriptions and Results.
		cement with 2% retarder; slurry weight 15 lbs per gallon; displace with 203 bbls of water; cement basket run at 246 feet and cement to surface.
Jan. 20	2125	Back-out landing joint, make-up casing bowl, nipple-up and test BOP. Make-up bit, casing bowl undergauge, grind out casing bowl. Nipple-up and test BOP and choke line to 1000 psi. Run-in hole.
Jan. 21	2203	Tested annular rams to 1000 psi, drilled-out plug at shoe, pull out of hole. Run in hole, circulate and unload hole. Drilled 9-7/8" to 2203 feet.
Jan. 22	2770	Drilled 9-7/8" hole to 2770 feet.
Jan. 23	3070	Drilled 9-7/8" hole to 3070 feet.
Jan. 24	3345	Drilled 9-7/8" hole to 3345 feet.
Jan. 25	3511	Drilled 9-7/8" hole to 3511 feet.
Jan. 26	3674	Drilled 9-7/8" hole to 3674 feet. Ream from 3476 to 3543 feet.
Jan. 27	3911	Drilled 9-7/8" hole to 3911 feet.
Jan. 28	4030	Drilled 9-7/8" hole to 4030 feet. P.O.H. layout 9" and 7" drill collars, 2 stabilizers and bit sub. Nipple-down rotating head and nipple-up flow line. Change over from air to oil base drilling mud.
Jan. 29	4058	Drill 7-7/8" hole to 4058 feet. Survey at 4058 = 7°.
Jan. 30	4143	Drill 7-7/8" hole to 4143 feet.
Jan. 31	4256	Drill 7-7/8" hole to 4256 feet.
Feb. 1	4296	Drill 7-7/8" hole to 4290 feet. Ream from 4180 to 4290 feet. Drill 7-7/8" hole to 4296 feet.
Feb. 2	4309	Cut Core No. 1 from 4296 to 4309 feet.

Well: ..West Mereenie No.3..... Field: ..Mereenie.....

Date	E.T.D. (ft.)	Details of Operations, Descriptions and Results.
Feb. 3	4334	Cut Core No. 1 to 4311 feet. Recover 14 feet. Ream rat hole 4296 to 4311 feet. Drill 7-7/8" hole to 4334 feet. Survey at 4321 feet - 10°.
Feb. 4	4376	Drill 7-7/8" hole to 4376 feet. Run D.S.T. No.1 4304 to 4376 feet.
Feb. 5	4419	D.S.T. No.1 - Open tool 10 mins. then closed-in for 30 mins. Reopen tool for 120 mins. then closed-in for 250 mins. Reverse circulated fluids to surface. Nil recovery. FIELD CHART READINGS D.S.T. NO.1 IHP IFP ISIP FFP FSIP FHP BHT 2183 70 610 77 1768 2166 134°F Ream 4320 to 4376 feet. Drill 7-7/8" hole to 4419 feet.
Feb. 6	4497	Drill 7-7/8" hole to 4415 feet. Survey - 6°. Drill 7-7/8" hole 4479 feet. Survey - 6°. Drill 7-7/8" hole to 4497 feet.
Feb. 7	4576	Drill 7-7/8" hole to 4576 feet. Survey at 4564 feet - 5-1/2°.
Feb. 8	4598	Ream with core bit from 4420 to 4576 feet. Cut Core No.2 from 4576 to 4598 feet.
Feb. 9	4633	Cut Core No.2, 4598 to 4600 feet. Cut 24 feet. Recovered 23.6 feet (98%). Ream from 4576 to 4600 feet. Drill 7-7/8" hole to 4633 feet.
Feb. 10	4680	Drill 7-7/8" hole to 4680 feet. Run survey at 4680 feet - 5°.
Feb. 11	4730	Cut Core No.3, 4680 to 4730 feet. Cut 50 feet. Recovered 49.2 feet (98%). Run-in hole with D.S.T. No.2

Well: West Mereenie No. 3 ..... Field: Mereenie .....

Date	E.T.D. (ft.)	Details of Operations, Descriptions and Results.
Feb. 12	4738	Run D.S.T. No. 2 - Open tool for 12 mins and closed-in for 62 mins. Reopened tool for 119 mins and closed-in for 240 mins. Gas and oil to surface. Flow through separator. Measure oil into stock tank. Recovered 28.3 bbls 50 API oil in stocktank. Oil at 679 BOPD. Gas at 490 Mcfd. GOR 722 cu. ft/bbl. FIELD CHART READINGS D.S.T. NO. 2 IHP IFP ISIP FFP FSIP FHP BHT 2263 548 1803 941 1785 2339 139°F Cut Core No. 4, 4730 to 4738 feet.
Feb. 13	4775	Cut Core No. 4, 4738 to 4775 feet.
Feb. 14	4780	Cut Core No. 4, 4775 to 4780 feet. Cut 50 ft. Recovered 50 ft. (100%). Run D.S.T. No. 3, 4731 to 4780 feet. Open tool for 11 mins and closed-in for 31 mins. Reopen tool for 120 mins and closed-in for 185 mins. Gas to surface 13 mins. Back circulate after second shut-in. Recover 4 bbls of gas and oil cut mud. FIELD CHART READINGS D.S.T. NO. 3 IHP IFP ISIP FFP FSIP FHP BHT 2381 105 1775 192 1785 2370 140°F
Feb. 15	4820	Cut Core No. 5, 4780 to 4820 feet.
Feb. 16	4830	Cut Core No. 5, 4820 to 4830 feet. Cut 50 ft. Recovered 50 ft. (100%). Run D.S.T. No. 4, 4779 to 4830 feet. Open tool for 10 mins and closed-in for 31 mins. Reopen tool for 90 mins and closed-in for 134 mins. Gas to surface RTSTM 70 mins. Back circulate after second shut-in. Recover 2 bbls of gas and oil cut mud.

Well: West Mereenie No.3 ..... Field: Mereenie .....

Date	E.T.D. (ft.)	Details of Operations, Descriptions and Results.
		FIELD CHART READINGS D.S.T. NO.4 IHP 2391 IFP 129 ISIP 1093 FFP 182 FSIP 1543 FHP 2374 BHT °F 141
Feb. 17	4872	Ream from 4680 to 4850 feet. Drill 7-7/8" hole to 4872 feet.
Feb. 18	4902	Cut Core No.6, 4872 to 4902 feet. Cut 30 feet. Recover 29.4 feet (98%).
Feb. 19	4950	Ream 4872 to 4902 feet. Drill 7-7/8" hole to 4950 feet.
Feb. 20	4985	Run D.S.T. No.5, 4870 to 4950 feet. Open tool for 13 mins. and closed-in for 31 mins. Reopened tool for 90 mins. and closed-in for 120 mins. Pulled out test string. Recovered 125 feet of mud. Recovered 2 litres of oil and water cut mud from between DCIP and hydrospring. FIELD CHART READINGS D.S.T. NO.5 IHP 2429 IFP 87 ISIP 1806 FFP 325 FSIP 1810 FHP 2426 BHT °F 142 Drill 7-7/8" hole 4950 to 4985 feet.
Feb. 21	5044	Drill 7-7/8" hole to 5044 feet.
Feb. 22	5095	Drill 7-7/8" hole to 5095 feet. Strap-out of hole.
Feb. 23	5095	Run Gearhart electric logs. Run velocity survey. Lay out drillpipe.
Feb. 24	5095	Lay down drillpipe and drill collars. Run 5-1/2" casing. Casing set at 5093 feet. Mixed and pumped 350 sacks of class G construction cement treated with 3/4% CFRZ and 1/2° Halad 22A in a 15.3 ppg slurry. Plug did not bump. Test tubing head and casing seals to 1000 psi for 15 mins. Held OK.
Feb. 25	5095	Nipple-up BOPs and test same to 1000 psi. Run-in hole with tubing and scraper. Tag plug at 5015.68 ft. P.O.H. Run Gearhart CBL and casing collar locator.

Well: ...West Mereenie No.3..... Field: ..Mereenie.....

Date	E.T.D. (ft.)	Details of Operations, Descriptions and Results.
Feb. 26	5095	Log and perforate with Gearhart. Run-in hole with packer and 2-3/8" tubing. Tubing set at 4612 feet. Displace tubing set packer and flow well. Rig released 1600 hrs.

2.3.2 Hole Sizes and Depth

17-1/2" to 160 feet

13-3/4" to 1109 feet

13-1/2" to 2125 feet

9-7/8" to 4030 feet

7-7/8" to 5095 feet

2.3.3 Casing and Cementing Details.

15" casing:	Weight:	not specified
	Grade:	welded
	Shoe depth:	123 feet
	Cement used:	50 sacks
10-3/4" casing:	Weight:	40.5 lb/ft.
	Grade:	H40
	Shoe depth:	2113 feet
	Cement used:	250 sacks
5-1/2" casing:	Weight:	14 lb/ft.
	Grade:	K55
	Shoe depth:	5093 ft.
	Cement used:	350 sacks.

2.3.4 BIT AND DEVIATION RECORD

WELL: WEST MEREENIE NO. 3
FIELD: MEREENIE
LOCATION: 23° 57' 33" S
131° 29' 33" E

TD: 5095 feet TVD
DEVIATION (BHL)

SPUD DATE: 7/1/83 COMP DATE: 26/2/83
CONTRACTOR: MEREENIE RIG No: 1
TYPE UNIT: PARCO SL-750
DRILL PIPE DESCRIPTION

ELEVATIONS
GROUND: 2467 feet
CASING HEAD
TUBING HEAD
ROTARY DRIVE BUSHING: 2487 feet

DATE IN	DEPTH OUT ft	BIT RECORD							WEIGHT 000lb	RPM	DEPTH & DEVIATION VERTICAL ☐ HORIZONTAL ☐
		BIT No	SIZE	MAKE	TYPE	JET	FEET	HOURS			
8/1/83	160	1	17-1/2	.HTC	OSC3AJ	OPEN	160	25	10	50	40' 1/8°
9/1/83	370	2	13-3/4	SEC	H7UG	OPEN	210	19	15	60	275' 1°
10/1/83	560	3	13-3/4	SEC	H7UG	OPEN	190	20	25	50	604' 1/2°
11/1/83	807	4	13-3/4	SEC	H7UG	OPEN	247	17.25	30	50	890' 3/4°
12/1/83	886	5	13-3/4	SEC	H7UG	OPEN	79	11.5	40	50	
13/1/83	1109	6	13-3/4	SMITH	Q9JS	OPEN	223	33	40	50	
14/1/83	1438	7	13-3/4	HTC	X33	OPEN	329	36.25	40	50	1230' 1°
16/1/83	1886	8	13-3/4	HTC	X33	OPEN	448	38.25	30	50	1850' 3°
18/1/83	2015	RR8	13-3/4	HTC	X33	OPEN	129	18.75	25	50	2080' 5°
20/1/83	2203	9	9-7/8	SEC	H7UG	OPEN	188	12.75	5	70	2161' 4°
21/1/83	3141	10	9-7/8	HTC	J22	OPEN	938	40	10/15	65	3141' 4-1/2°
24/1/83	3542	11RR	9-7/8	HTC	J22	OPEN	402	45.25	5/7	65	3488' 6-3/4°
26/1/83	4030	12	9-7/8	HTC	J22	OPEN	487	49.75	5/10	65 70	4012' 8-1/2°
29/1/83	4291	13	7-7/8	HTC	J33	3x16	261	64	10/30	50	4223' 7°
1/2/83	4296	14	7-7/8	HTC	J33	3x16	5	1.5	30	50	
2/2/83	4311	C-1	7-27/32	CHRIS	MC201		15	26	17	70	
3/2/83	4376	RR14	7-7/8	HTC	J33	3x16	65	19.5	30	50	4321' 10°
5/2/83	4576	15	7-7/8	HTC	J55	3x16	200	55.5	30	50	4565' 5-1/2°
8/2/83	4600	C-2	7-27/32	ACC	EHSTAR		24	17.25	17	70	
9/2/83	4680	16RR	7-7/8	HTC	J77	3x16	80	24.75	35	45	4650' 5-1/2°
10/2/83	4730	C-2RR	7-27/32	ACC	EHSTAR		50	17	15	80	
12/2/83	4780	C-2RR	7-27/32	ACC	EHSTAR		50	31.5	15/17	80	
14/2/83	4830	C-2RR	7-27/32	ACC	EHSTAR		50	28.5	21	80	
17/2/83	4872	17	7-7/8	HTC	J77	3x16	42	13	35	45	
18/2/83	4902	C-3	7-27/32	CHRIS	MC201		30	19	17	70	
19/2/83	4950	18	7-7/8	HTC	J77	3x16	48	10.25	35	45	4913' 3-1/2°
20/2/83	5022	19	7-7/8	HTC	J55	3x16	72	21.25	35	50	
21/2/83	5095	20	7-7/8	HTC	J77	3x16	73	29.25	35	50	5095' 4°
25/2/83	5051	21	4-3/4	HTC	WO	OPEN	CASING SCRAPER RUN IN 5-1/2" CASING.				

2.3.5 Drilling Fluid

The 17-1/2" hole was air drilled to 160 feet at which depth the 15" conductor pipe was run.

The 13-3/4" hole was air drilled from the 15" casing shoe to 560 feet at which depth water influx necessitated the addition of foaming agent. Drilling continued with air mist to 1109 feet where the hole size was decreased to 13-1/2" and thence to the 10-3/4" casing point at 2125 feet. From the 10-3/4" casing shoe 9-7/8" hole was drilled using air until 4030 feet where the hole was filled with oil based mud. An oil based mud system was used in the 7-7/8" hole from 4030 feet to total depth at 5095 feet.

Water was pumped from a water well two miles to the east through a 2" line.

The daily mud properties are as follows :-

DAILY DRILLING FLUID PROPERTIES

TABLE 1.

WELL : WEST MEREENIE NO. 3

DATE	DEPTH (feet)	WEIGHT (ppg)	VISC (sec)	W.L. (c.c)	PH	SALT (ppm)	OIL (%)	SAND (%)	SOLIDS (%)	REMARKS
7/1/83	45									STIFF FOAM
8/1/83	160									
9/1/83	160									AIR FOAM
10/1/83	370									
11/1/83	560									
12/1/83	795									AIR MIST
13/1/83	926									
14/1/83	1085									
15/1/83	1215									
16/1/83	1440									
17/1/83	1548									
18/1/83	1886									
19/1/83	2120									
20/1/83	2120									
21/1/83	2125									AIR
22/1/83	2290									
23/1/83	2950									
24/1/83	3160									
25/1/83	3395									
26/1/83	3543									
27/1/83	3725									
28/1/83	3972									
29/1/83	4030									
30/1/83	4070	9.1	59				-	0.25		OIL BASED MUD
31/1/83	4165	9.2	70				-	-		
1/2/83	4288	9.2	58				-	-		
2/2/83	4300	9.2	62				68	0.5		
3/2/83	4311	9.1	63				-	-		
4/2/83	4357	9	62				-	-		
5/2/83	4376	9.2	62				66	-		
6/2/83	4444	9.2	53				73	1.5		
7/2/83	4519	9.2	54				73	0.75		
8/2/83	4576	9.1	53				73	0.75		
9/2/83	4600	9.2	56				75	0.5		
10/2/83	4657	9.2	51				69	1.0		
11/2/83	4697	9.1	47				73	-		
12/2/83	4730	9.1	48				76	-		
13/2/83	4749	9.3	53				75	1.0		
14/2/83	4789	9.2	50				-	-		
15/2/83	4788	9.3	55				75	0.5		

DAILY DRILLING FLUID PROPERTIES (contd.) TABLE 1.

WELL : WEST MEREENIE NO. 3

DATE	DEPTH (feet)	WEIGHT (ppg)	VISC (sec)	W.L. (c.c)	PH	SALT (ppm)	OIL (%)	SAND (%)	SOLIDS (%)	REMARKS
16/2/83	4830	9.2	47				-			
17/2/83	4840	9.3	50				73	1/2		
18/2/83	4882	9.3	52				74	1/2		
19/2/83	4902	9.5	51				72	1/2		
20/2/83	4950	9.3	48				-	1/2		
21/2/83	5012	9.3	48				76	1/4		
22/2/83	5064	9.4	47				75	1/2		
23/2/83	5095	9.4	46				-	1/2		
24/2/83	5095	9.4	46				-	1/2		TOTAL DEPTH
25/2/83	5095									TOTAL DEPTH
26/2/83	5095									TOTAL DEPTH
27/2/83	5095									TOTAL DEPTH

2.3.6 Formation Sampling

(i) Ditch cuttings -

Samples were taken at intervals of 30 feet from 570 to 3920 feet. From this depth samples were taken at intervals of 10 feet until the interval was reduced to 5 feet at 4311 feet. This sample interval was maintained until total depth at 5095 feet. When drilling with mud two splits of sample were bagged untreated and three splits then made of the washed and dried samples. Where air or mist drilling provided only cuttings powder this was split five ways. The samples were distributed as follows :-

Oilmin:
- 1 set washed and dried) mud drilling
- 1 set untreated)
- 2 sets of powder - air/mist drilling

Magellan:
- 1 set washed and dried - mud drilling
- 1 set of powder - air/mist drilling

N.T. Dept. of Mines:
- 1 set washed and dried) mud drilling
- 1 set untreated)
- 2 sets of powder - air/mist drilling

Samples descriptions are given in Appendix 1.

(ii) Coring -

A total of 219 feet of core was cut in six coring runs with 99% recovery.

All core depths have been corrected to the corresponding electric log depths where necessary.

Core No.	Interval (driller) (ft)	Interval (corrected) (ft)	Cut (ft)	Rec. (ft)	Rec. (%)	Bit Type
1	4296-4311	4298-4313	15	14	93	C201 (7-27/32")
2	4576-4600	4574-4598	24	23.6	98	ACC EHSTAR (7-27/32")
3	4680-4730	4678-4728	50	49.2	98	ACC EHSTAR (7-27/32")
4	4730-4780	4728-4778	50	50	100	ACC EHSTAR (7-27/32")
5	4780-4830	4778-4828	50	50	100	ACC EHSTAR (7-27/32")
6	4872-4902	same	30	29.4	98	MC201 (7-27/32")

(iii) Sidewall sampling -

No sidewall samples were taken.

2.3.7 Logging and Surveys

(i) Electric logging -

The following logs were run using a Gearhart DDL logging unit :-

Log	Run	Interval (ft)	Date
CDL-CNS-CAL	1	3450 to 5095	23/2/83
Gamma	1	Surface to 5095	23/2/83
DIL-Gamma-CAL	1	3450 to 5095	23/2/83

Prints of all wireline logs are included as Enclosure 3.

(ii) Velocity survey -

A velocity shoot was run on the 23rd February, 1983, by Velocity Data Pty. Ltd. Details are given in Appendix 5.

(iii) Penetration rate and gas logs -

The penetration rate was recorded continuously from spud to total depth. The mud gas was monitored continuously on a conventional hotwire detector and flame ionization chromatograph during the mud drilling phase.

A mud log showing penetration rate, gas, lithological and pertinent engineering data was prepared at the wellsite on a daily basis and is included as Enclosure 2.

(iv) Deviation surveys -

Deviation surveys are shown in 2.3.4 (Bit and Deviation Record).

(v) Temperature surveys -

Temperature surveys were not carried out, however, the following temperatures were recorded :-

134°F at 4376 feet (Halliburton)

139°F at 4730 feet (Halliburton)

140°F at 4780 feet (Halliburton)

141°F at 4850 feet (Halliburton)

142°F at 5095 feet (Gearhart)

2.3.8 Formation testing

(i) Drill stem testing

D.S.T. 1	Interval:	4304 to 4376 feet.
	Method:	Conventional dual bottom hole.
	Tester:	Halliburton
	Results:	No gas to surface. Nil recovery.
D.S.T. 2	Interval:	4658 to 4730 feet.
	Method:	Conventional dual bottom hole.
	Tester:	Halliburton
	Results:	Gas to surface 3 mins. Oil and gas to surface 12 mins. Gas at 490 Mcfd. Oil at 679 BOPD (50 API at 60°F). G.O.R. 722 cu. ft/bbl.
D.S.T. 3	Interval:	4731 to 4780 feet.
	Method:	Conventional dual bottom hole.
	Tester:	Halliburton
	Results:	Gas to surface 13 mins. Gas RTSTM. Recovered 4 bbls of gas and oil cut mud on back circulation.
D.S.T. 4	Interval:	4779 to 4830 feet.
	Method:	Conventional dual bottom hole.
	Tester:	Halliburton
	Results:	Gas to surface 70 mins. Gas RTSTM. Recovered 2 bbls of gas and oil cut mud on back circulation.
D.S.T. 5	Interval:	4870 to 4950 feet.
	Method:	Dual conventional bottom hole.
	Tester:	Halliburton
	Results:	No gas to surface. Pull wet string. Recover 125 feet of mud in drill string. Recover 0.5 gallons of oil and water cut mud from between DCIP and hydrospring.

2.3.9 Well Completion Data

128 joints of 5-1/2", K55, 14 lbs/ft casing was run with the shoe at 5093 feet. After cementing with 350 sacks of Class A construction cement treated with 3/4% CFR2 and 1/2% Halad 22A the cement plug was tagged at 5015.68 feet. The casing was perforated by Gearhart with a 4" casing gun over the interval 4672 to 4714 feet (P3-130 sandstone) with two shots per foot. After perforating an Otis R.H. packer with a ball catcher, Otis XN no-go nipple and a wireline re-entry guide, was run on 146 joints of 2-3/8", J55, 4.7 lbs/ft tubing. The completion assembly was set at 4636 feet.

A 2000 psi working pressure McEvoy Christmas tree was installed and the well shut-in.

3. GEOLOGY

3. GEOLOGY

3.1 Previous Work

This is the first well of the present appraisal programme to be drilled in Petroleum Lease 4. Previous wells in the area were Mereenie No. 1 drilled in 1963-1964, West Mereenie No. 1 drilled in 1964-1965, both crestal wells, and West Mereenie No. 2, a flank well, drilled in 1965.

Mereenie No. 1 was plugged and abandoned due to technical difficulties after recording gas flows totalling 11 Mmcfd from the Pacoota P1.

West Mereenie No. 1 drilled 701 feet into the Goyder Formation, recovered oil from the P4 and recorded gas flows of 88 mcfd from the P3 and up to 10 Mmcfd from the P1.

West Mereenie No. 2 was drilled to the top of the Goyder Formation, recorded open hole gas flows up to 10.6 Mmcfd from the P1 and recovered small amounts of oil in drill stem tests in the P3.

These three wells indicated the hydrocarbons in the western portion of the Mereenie Anticline were part of the same gas and oil accumulation intersected in the East Mereenie wells with a common gas/oil contact at -2130 feet MSL and a common oil/water contact at -2450 feet MSL.

Subsequent drilling (EM-6, EM-8, EM-9, EM-10) to test the oil potential of the Pacoota P1 reservoir showed that in the eastern portion of the field the P1 contains a separate oil pool with a gas/oil contact at approximately -2130 feet MSL and an oil/water contact at -2680 feet MSL.

The drilling to date in Petroleum Lease No. 4 has shown the best reservoir potential occurs near the base of the P1 and middle and lower portions of the P3. Porosity above 5% does exist elsewhere in the Pacoota section however these zones are of poor permeability.

3.2 Stratigraphy

West Mereenie No. 3 spudded in the Mereenie Sandstone and reached total depth of 5095 feet, 33 feet into the Upper Cambrian Goyder Formation. For a list of formation tops and thicknesses see Table 1.

A detailed description of lithology is appended (Appendices 1 and 2) and is graphically shown and briefly described on the Composite Well Log and Mud Log (Enclosures 1 and 2).

The stratigraphic units penetrated are described below :-

TABLE 2.

WEST MEREENIE NO.3 STRATIGRAPHIC TABLE.

AGE	FORMATION	DEPTH (ft.)		THICKNESS
		KB (ft.)	MSL (ft.)	
DEVONIAN-SILURIAN	MEREENIE SANDSTONE	Surface 20	+2467	1502
UPPER ORDOVICIAN	CARMICHAEL SANDSTONE	1522	+965	292
MIDDLE ORDOVICIAN	STOKES SILTSTONE	1814	+673	1099
	Upper Stokes Siltstone	1814	+673	822
	Lower Stokes Siltstone	2636	-149	277
	STAIRWAY SANDSTONE	2913	-426	820
	Upper Stairway Sandstone	2913	-426	163
	Middle Stairway Sandstone	3076	-589	426
	Lower Stairway Sandstone	3502	-1015	231
LOWER ORDOVICIAN	HORN VALLEY SILTSTONE	3733	-1246	267
UPPER CAMBRIAN to LOWER ORDOVICIAN	PACOOTA SANDSTONE	4000	-1513	1062
	P1 Sub Unit	4000	-1513	340
	P2 Sub Unit	4340	-1853	219
	P3 Sub Unit	4559	-2072	273
	P4 Sub Unit	4832	-2345	230
CAMBRIAN	GOYDER FORMATION	5062	-2575	33+
	TOTAL DEPTH:	5095	-2608	

Mereenie Sandstone

Depth: Surface to 1522 feet

Thickness: 1502+ feet

Age: Upper Silurian to Middle Devonian

The Mereenie Sandstone can be divided into four distinct litho-stratigraphic units. These units are present in West Mereenie Nos. 1 and 2 and are of similar thickness, gamma ray response and lithology. The regional unconformity at the base of the Mereenie Sandstone is not apparent on the electric logs nor from the drill rate.

Lithology:

Surface to 777 feet

This unit is a massive buff to white, fine to medium grained, quartzose sandstone with thin, coarse grained horizons. Occasionally sandstone horizons are coloured red-brown.

777 to 988 feet

Purple, micaceous siltstones are thinly interbedded with red-brown, fine to medium grained, quartzose sandstones in this section.

988 to 1411 feet

This section consists of massive, white, fine to medium grained, quartzose sandstone with frequent thin horizons of coarse grained, quartzose sandstone.

1411 to 1522 feet

The basal unit consists of thinly interbedded, dolomitic, micaceous siltstones and dolomitic, quartzose sandstones. The colouration is dominantly red-brown.

Carmichael Sandstone (Larapinta Group)

Depth: 1522 to 1814 feet

Thickness: 292 feet

Age: Upper Ordovician

Lithology:

The lithology of the Carmichael Sandstone is very similar to the basal unit of the Mereenie Sandstone. The only significant difference is that the Carmichael section has a higher proportion of sandstone and some of the sandstones are coarser grained. A similar section is present in the surrounding wells however the unit is 90 feet thicker in West Mereenie No. 1 and 35 feet thicker in West Mereenie No. 2. This may be due to local variations in the depth of erosion at the base Mereenie Sandstone unconformity.

Stokes Siltstone (Larapinta Group)

Depth: 1814 to 2913 feet
Thickness: 1099 feet
Age: Middle Ordovician

The Stokes Siltstone has three broad lithostratigraphic sub units, two in the Upper Stokes and one which is the Lower Stokes. These sub units are present in the surrounding wells and have the same stratigraphy.

Lithology:

1814 to 2636 feet (Upper Stokes Siltstone)

This sub unit is dominantly red-brown, brown and green siltstone which is sometimes micaceous, calcareous and dolomitic.

Fine grained, white and red-brown, quartzose sandstones form up to 20% of the section at the top of this sub unit but decrease in frequency with depth until at the base they occur as occasional, fine laminae.

Although the section remains silty below 2400 feet, the dominant colour changes from red-brown to green. Thin, grey limestone horizons are present below 2600 feet.

2636 to 2913 feet (Lower Stokes Siltstone)

This section consists of green, calcareous siltstone with frequent horizons of grey limestone and dolomitic limestone. Occasional grey-brown, calcareous shales are present.

Stairway Sandstone (Larapinta Group)

Depth: 2913 to 3733 feet
Thickness: 820 feet
Age: Middle Ordovician

The Stairway Sandstone is subdivided into three distinct sub units: the Upper, Middle and Lower Stairway Sandstone. These sub units are recognizable in the surrounding wells with no significant differences in stratigraphy.

Lithology:

2913 to 3076 feet (Upper Stairway Sandstone)

The dominant lithology in this section is white, fine to coarse grained, quartzose sandstone. Thin horizons of grey-green, slightly dolomitic shale occur throughout the sub unit. The sandstones have abundant calcareous, dolomitic and siliceous cement.

Stairway Sandstone (Larapinta Group) (Contd.)

3076 to 3502 feet (Middle Stairway Sandstone)

This sub unit consists of finely interbedded grey, calcareous shales and siltstones with frequent thin, white, quartzose and slightly calcareous sandstone beds.

3502 to 3733 feet (Lower Stairway Sandstone)

White, fine and coarse grained sandstone is the dominant lithology. Thin grey, micaceous siltstone horizons are present throughout but are most abundant in the more argillaceous middle section of this sub unit. The sandstones in the upper and basal section of the sub unit have abundant siliceous and occasionally calcareous cement.

Horn Valley Siltstone (Larapinta Group)

Depth: 3733 to 4000 feet

Thickness: 267 feet

Age: Lower Ordovician

Lithology:

This unit consists of grey to dark grey shales grading to siltstones interbedded with calcareous shales and rare homogeneous, grey limestone horizons.

Pacoota Sandstone (Larapinta Group)

Depth: 4000 to 5062 feet

Thickness: 1062 feet

Age: Upper Cambrian to Lower Ordovician

As in all the other wells drilled at Mereenie so far the Pacoota Sandstone can be divided into four main sub units, the P1, P2, P3 and P4. In West Mereenie No. 3 there are no significant changes in the stratigraphy of these sub units.

Lithology:

4000 to 4340 feet (Pacoota P1 Sub Unit)

The top of the sub unit is marked by a five feet thick dolomitic, arenaceous limestone. The rest of the P1 is dominantly arenaceous with fine to medium grained, quartzose sandstone, interbedded with thick sections of bioturbated and churned sandstone and siltstone. Minor coarse sandstone horizons and rare shale horizons make up the remainder of the section. The top 60 feet of the P1 is glauconitic.

Pacoota Sandstone (Larapinta Group) (Contd.)

4340 to 4559 feet (Pacoota P2 Sub Unit)

Although more argillaceous than the P1, the P2 is still dominantly arenaceous. The section consists of thinly interbedded, fine to medium grained, quartzose sandstone and grey siltstone with rare grey shale laminae. The lower 80 feet of the P2 is glauconitic.

4559 to 4832 feet (Pacoota P3 Sub Unit)

The Pacoota P3 sub unit, like the P1, is dominantly arenaceous with rare shale horizons and siltstones. The clean sandstones are dominantly fine to medium grained, with occasional coarse grained horizons. These clean sandstones are interbedded with sections of thinly laminated, fine to very fine, silty, micaceous sandstones. Red iron staining is common in the basal P3 and occasional horizons have pink, sideritic blotching. Cross-stratification is common throughout. The sandstones are commonly cemented with diagenetic silica.

As the P3 sub unit was continuously cored from 4680 to 4830 feet a detailed account of the grain size distribution, sedimentary structures and lithology is available in Appendix 2.

4832 to 5062 feet (Pacoota P4 Sub Unit)

This sub unit is a massive body of red and white, fine to coarse grained, quartzose sandstone with rare thin, silty sandstone laminae. Silica cementation is common throughout.

Goyder Formation (Pertaoorrta Group)

Depth: 5062 to 5095 feet

Thickness: 33+ feet

Age: Upper Cambrian

Lithology:

The top of the Goyder is gradational with the base of the P4, the top being placed at the first distinctive argillaceous horizon. This coincides with a distinct colour change from white to red-brown and white. The Goyder Formation consists of interbedded red-brown and white, argillaceous, quartzose sandstone and red-brown, argillaceous and arenaceous siltstone.

3.3 Petroleum Geology

Upper Stairway Sandstone (2913 to 3093 feet)

This sub unit shows poor to fair porosity in cuttings samples and is poorly permeable as no fluid flows occurred whilst drilling with air. There were no indications of hydrocarbons.

Middle Stairway Sandstone (3093 to 3469 feet)

This sub unit is predominantly silty and effectively separates the more porous Upper and Lower Stairway Sandstone sub unit.

Lower Stairway Sandstone (3469 to 3733 feet)

A brief small gas flow from a drilling break between 3560 and 3568 feet was the only indication of the presence of hydrocarbons in this sub unit. The drilling break corresponded to a zone of coarse quartzose sandstone but the flow of gas indicated the zone had poor permeability. The Lower Stairway Sandstone is most probably gas filled but has poor permeability throughout and only minor thin zones of fair porosity.

Pacoota Sandstone (P1 sub unit, 4000 to 4340 feet)

Sample cuttings, core analysis and electric logs indicate that the majority of the P1 sandstones have poor porosity and permeability mainly due to silica cementation. The zones of porosity indicated by the density log are -

4072 to 4074 feet (P1- 60) - Av. porosity = 6%

4083 to 4089 feet (P1- 80) - Av. porosity = 7.5%

4266 to 4278 feet (P1-280) - Av. porosity = 8.5%
Max. porosity = 9%

4336 to 4340 feet (P1-350) - Av. porosity = 8%

Maximum porosity (9%) in the P1 in this well occurs in the P1-280 gross sandstone interval which has similar properties in the nearest wells West Mereenie Nos. 1 and 2. In both these wells the P1-280 sandstone produced approximately 10 Mmcfd on drill stem tests.

The P1-310 and P1-350 intervals showed evidence of porosity in the cuttings samples and were tested together in D.S.T. No. 1. The drill stem test results showed that as in other wells these horizons have poor permeability.

Pacoota Sandstone (P2 sub unit, 4340 to 4559 feet)

No cores or tests were run in the P2 as there were no significant zones of porosity nor evidence of hydrocarbons from the cuttings samples or electric logs.

3.3 Petroleum Geology (Contd.)

Pacoota Sandstone (P3 sub unit, 4559 to 4832 feet)

Good control of the porosity distribution of the P3 has been obtained by the extensive coring programme and regular (1 ft) core analysis spacing. Electric logs confirmed that all prospective reservoir sections in the P3 have been cored. Density log porosities agree closely with core analysis results.

The zones with density log porosity greater than 6% are :

4578 to 4581 feet (P3-10)	- Av. Porosity	= 7%
	Max. Porosity	= 8%
4673 to 4712 feet (P3-130)	- Av. Porosity	= 11%
	Max. Porosity	= 14%
4720 to 4726 feet (P3-150)	- Av. Porosity	= 9%
	Max. Porosity	= 10.5%
4760 to 4770 feet (P3-190)	- Av. Porosity	= 8%
	Max. Porosity	= 10.5%
4774 to 4780 feet (P3-190)	- Av. Porosity	= 8%
	Max. Porosity	= 11%
4790 to 4816 feet (P3-230)	- Av. Porosity	= 9%
	Max. Porosity	= 11%
4819 to 4823 feet (P3-250)	- Av. Porosity	= 8%
	Max. Porostiy	= 8.5%

The above porosity distribution is typical for the P3 section in the East Mereenie wells but shows an increase in porosity from West Mereenie Nos. 1 and 2. Core analysis and drill stem test data show the permeability to be poor throughout except in the P3-120 and P3-130 intervals. A similar situation exists in the East Mereenie P3 sections and again, the permeability of the P3-120 and P3-130 appears to be improved from West Mereenie Nos. 1 and 2.

The core analysis reveals a zone with permeabilities to 34 md in the P3-230 sandstone however D.S.T. No. 4 only recovered 2 bbls of gas and oil cut mud.

The drill stem tests and core analysis show that the middle and lower sections of the P3 sub units are within the oil column. The oil which flowed from D.S.T. No. 2 was 50° API at 60°F, yellow-brown in transmitted light, dull green in reflected light and similar to the P3 oil produced from East Mereenie Nos. 4 and 7.

3.3 Petroleum Geology (Contd.)

Pacoota Sandstone (P3 sub unit, 4559 to 4832 feet) (Contd.)

The gas/oil contact was not detected, however, it is expected to intersect the well bore at approximately 4630 feet some 71 feet below the top of the P3. Core No. 2 (4576 to 4600 feet) showed no evidence of liquid hydrocarbons and oil was tested from D.S.T. No. 2 (4658 to 4730 feet) confirming the position of the gas/oil contact in the interval 4600 to 4658 feet.

Pacoota Sandstone (P4 sub unit, 4832 to 5062 feet)

The porosity distribution in the P4 sub unit is the same as found in most of the wells drilled previously with a zone of porosity, the P4-40, approximately 20 feet thick some 40 feet below the top of the P4. Part of this zone was cored and showed an average porosity of 8% with a maximum porosity of 13.3% and permeabilities ranging between 0.09 and 4.8 md.

D.S.T. No.5 recovered 125 feet of mud and 0.5 gal. of oil and water cut mud, reflecting the low permeability of this P4 porous zone and showing the presence of connate water. The presence of water was indicated by the presence of salt crystals on the surface of Core No.6, after it had dried.

The oil/water contact was not directly detected, however, a level halfway between the bottom of D.S.T. No. 4 in the P3 unit and D.S.T. No. 5 which recovered water would place the oil/water contact at 4850 feet (-2363 feet MSL). This is approximately 80 feet higher than the previously estimated oil/water contact in this area.

3.4 Relevance to Appraisal Programme

The aim of the West Mereenie No. 3 well was to test the production potential of the P3 reservoirs in the oil column in the western portion of the Mereenie Anticline. Also the well was aimed at providing further information on the distribution and reservoir qualities of the lower P1 reservoir horizon which produced approximately 10 Mmcfd in West Mereenie Nos. 1 and 2. The well achieved these aims and the following are relevant to the future appraisal programme -

1. The reservoir distribution in the Pacoota Sandstone was as expected with the best reservoirs occurring in the lower P1 and mid to lower P3 intervals. Elsewhere minor thin zones of porosity development occur throughout the P1 and upper P3. A 20 feet thick low permeability reservoir exists approximately 40 feet below the top of the P4.

3.4 Relevance to Appraisal Programme (Contd.)

2. A flow of 679 BPD of 50° API oil and 490 Mmcfd gas from the mid P3 reservoir horizons (P3-120 and P3-130 sandstones) showed that these reservoirs have good production potential.

3. Although there were no significant flows of hydrocarbons to surface in either West Mereenie Nos. 1 and 2 from the mid P3 reservoirs the results from West Mereenie No. 3 indicate that further information is necessary to fully evaluate the production potential of this interval in the western portion of the Mereenie Anticline.

4. Based on core and drill stem test data the gas/oil contact occurs at approximately 4630 feet KB (-2143 feet MSL) which is equivalent to the gas/oil contact in the rest of the field.

5. The oil/water contact in West Mereenie No. 3 is estimated at 4850 feet KB (-2363 feet MSL), some 87 feet higher than the oil/water contact for the P3 reservoir in the eastern end of the field (-2450 feet MSL).

6. The above fluid contacts indicate that the oil column in West Mereenie No. 3 is 233 feet compared to 550 feet in the "new" P1 pool and 320 feet in the eastern end P3 pool.

7. The thickness and porosity of the P1-280 sand which produced approximately 10 Mmcfd in West Mereenie Nos. 1 and 2 is similar to that at the West Mereenie No. 3 location.