

EAST MEREENIE NO. 19  
WELL COMPLETION REPORT  
PETROLEUM LEASE NO. 5, NORTHERN TERRITORY

BY

MOONIE OIL N.L.

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**PR86/001B**

**NORTHERN TERRITORY  
GEOLOGICAL SURVEY**



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## SUMMARY

East Mereenie No. 19 is the twentieth appraisal well in the current Mereenie Field Appraisal programme. It was designed to be completed for oil production from the upper, middle and lower P3 reservoir horizons. It is located 695 metres on a true bearing of 207 degrees from East Mereenie No. 15 and 595 metres on a true bearing of 062 degrees from East Mereenie No. 7. East Mereenie No. 19 is an eastern nose southern flank well.

The well spudded in Parke Siltstone on 1st July, 1985 using Haffner Rig No. 1 and reached TD at 4885 feet on 31st July, 1985 in the Pacoota (P4) Sandstone. The target horizon, the P3-120/130 sand, was intersected at approximately -2330 feet MSL.

The well was drilled to 2255 feet with air and foam. Returns of meteoric water reached a maximum of 1550 bbls/hr at 1848 feet with the initial influx occurring at 410 feet. After 10-3/4" casing had been set, drilling continued with air in 9-7/8" hole to 3735 feet where a significant flow of gas was encountered. An open hole flow test measured 465 Mcfd from the Lower Stairway Sandstone. Drilling continued with air to 4043 feet where the hole was mudded up with a 10.5 ppg water based mud. 9-7/8" hole was continued with water based mud to 4595 feet (Top P3). 8-5/8" casing was run and cemented. Water based mud was displaced with oil based mud. Drilling continued in 7-5/8" hole to TD at 4885 feet.

Four drill stem tests were run to test the oil production potential of the middle and lower Pacoota P3 sands. Drill Stem Test No. 1 (4691 to 4730 feet) tested the P3-120/130 sand and recovered 10 barrels oil on reverse circulation with gas to surface at a rate TSTM. Drill Stem Test No. 2 (4779 to 4810 feet) tested the P3-190 sand and recovered only rat hole mud. Drill Stem Test No. 3 (4808 to 4838 feet) tested the P3-230 sand and recovered 2-1/2 barrels oil cut mud on reverse circulation with gas to surface at a rate TSTM. Drill Stem Test No. 4 (4606 to 4885 feet) tested the total Pacoota P3 interval and recovered 18 barrels of oil and 3 barrels gas cut mud on reverse circulation with gas measured at 4,476 cf/d.

Electric logs were run at TD with the gas/oil contact not being detected. Log analysis however, assuming a constant  $R_w$  (connate water), did indicate that an oil/water transition zone may occur in the Lower P3.

Three cores were cut during the drilling of the well taking in the P3-130, 190 and 230 sands. Core No. 3 over the P3-230 interval cored through the previously accepted P3 oil/water contact for the eastern field of -2450 feet MSL. No free water was observed to come from the core and subsequent drill stem testing and core analysis did not indicate any significant oil/water transition zone.

5-1/2" casing was run to 4884 feet and cemented in place. 2-3/8" tubing was run to 4520 feet.

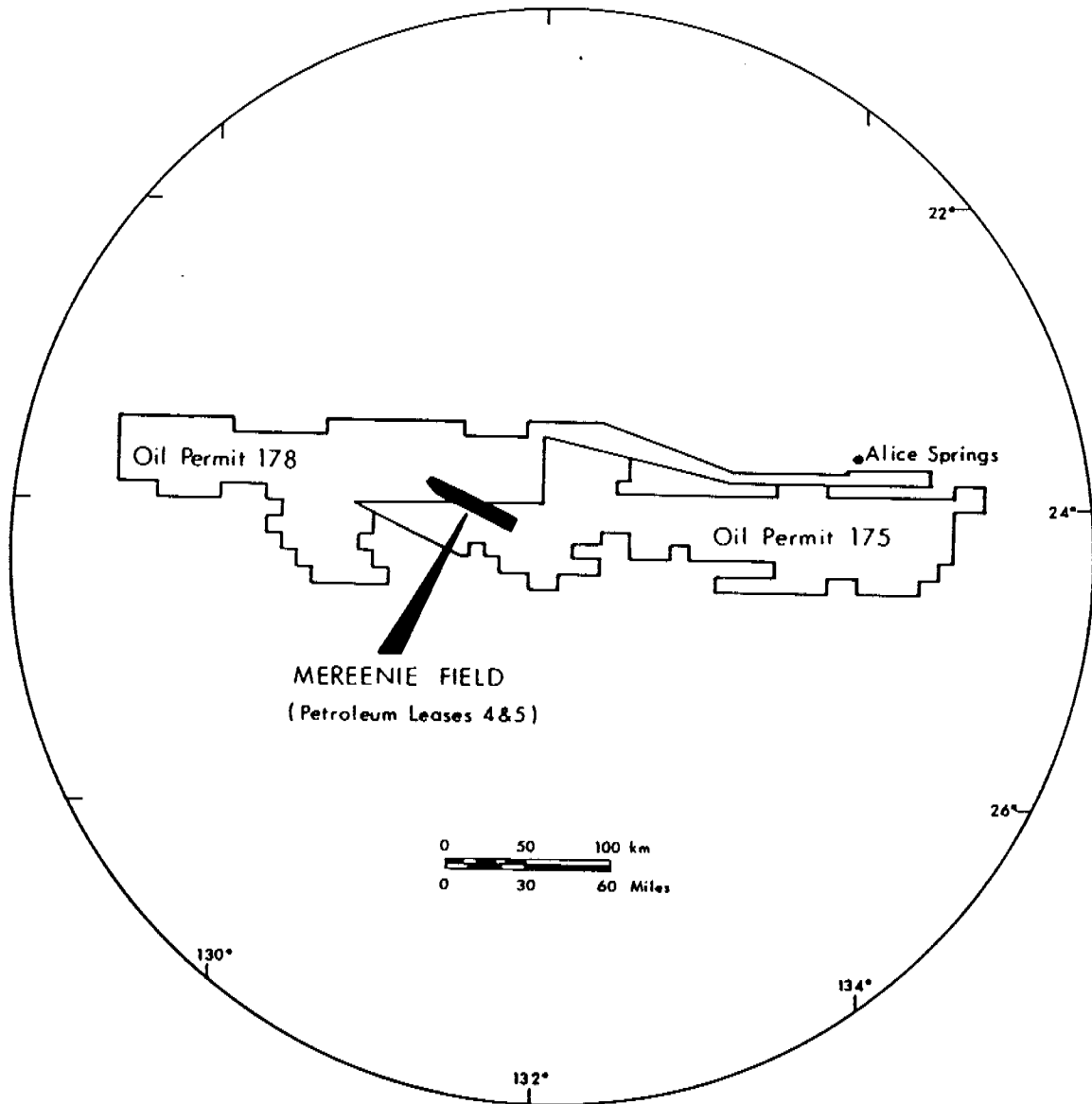
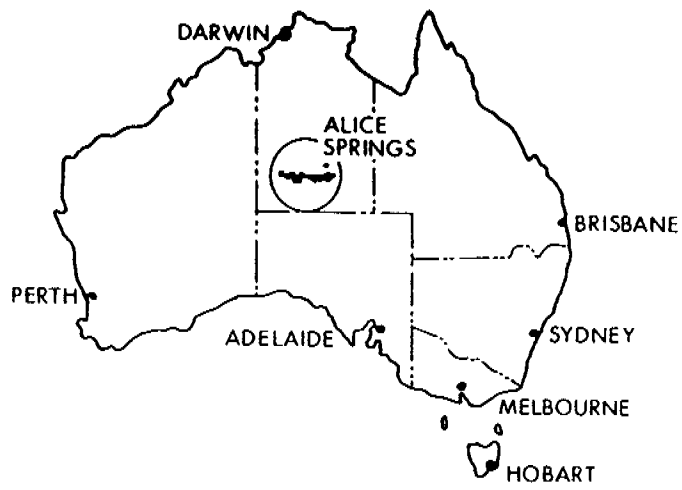
East Mereenie No. 19 was suspended pending re-completion. The rig was released at 1700 hours, 4th August, 1985 having taken 35 days from spud to completion.

1. GENERAL DATA

1. GENERAL DATA:

Well Name & Number: East Mereenie No. 19  
Operator: Moonie Oil N.L.  
Beneficial Interest Holders:  
 The Moonie Oil Company Limited  
 Magellan Petroleum Australia Limited  
 Flinders Petroleum N.L.  
Petroleum Title: Petroleum Lease No. 5  
District: Alice Springs, Northern Territory  
Location: Latitude: 24°01'52"S  
 Longitude: 131°37'32"E  
Elevation: Ground Level: 2342 ft MSL  
 Kelly Bushing: 2362 ft MSL  
Total Depth: 4885 feet (DRILLER)  
Spudded: 0730 hours, 1st July, 1985  
Rig Released: 1700 hours, 4th August, 1985  
Total Days Drilling: 35 days  
Well Status: Suspended  
Geological Formation Tops:

Parke Siltstone	Surface
Mereenie Sandstone	43 feet
Carmichael Sandstone	1710 feet
Stokes Siltstone	1928 feet
Stairway Sandstone	2993 feet
Horn Valley Siltstone	3757 feet
Pacoota Sandstone	4006 feet



## LOCATION MAP



# MEREENIE OIL & GAS FIELD WELL LOCATIONS

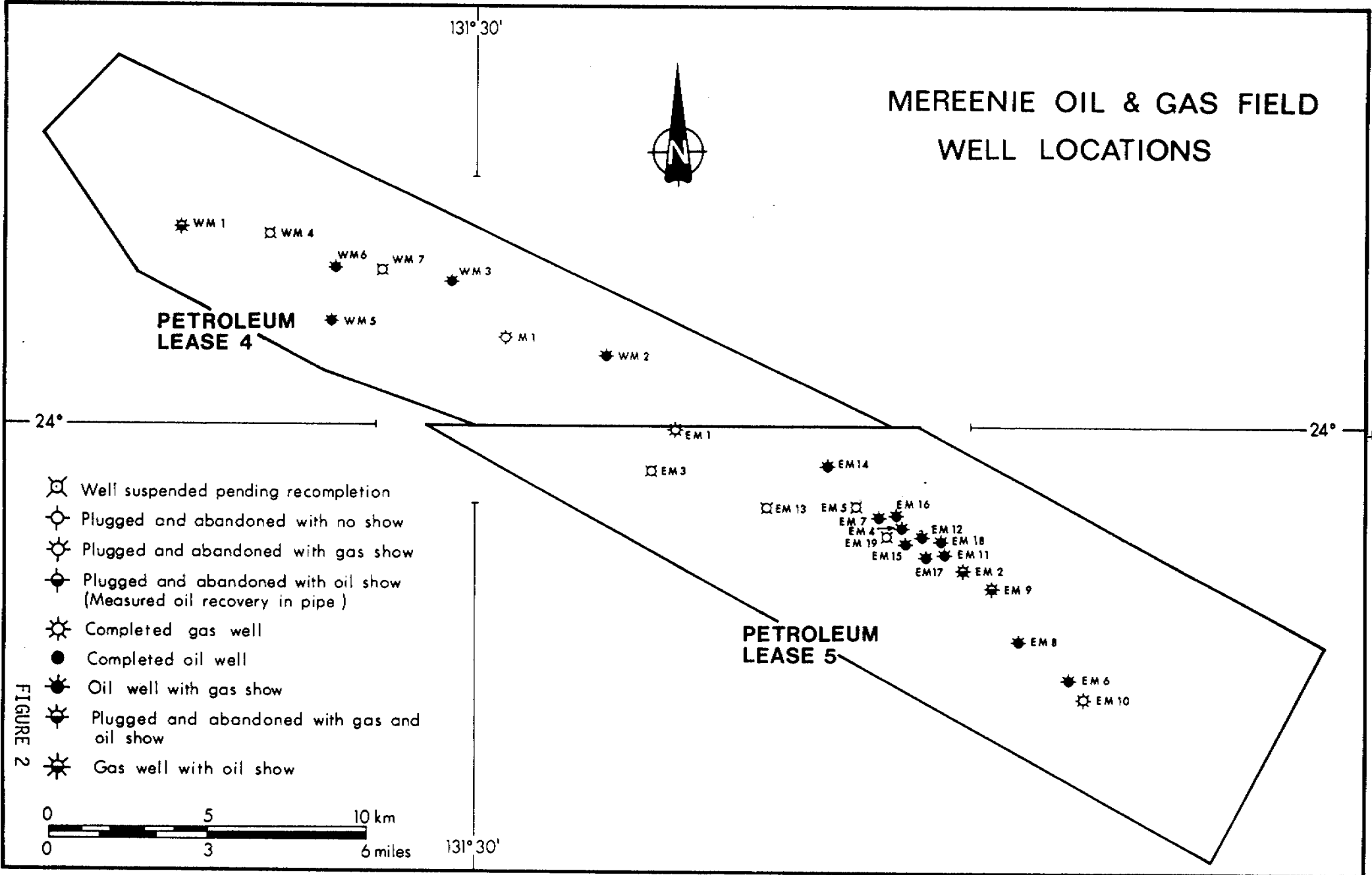


FIGURE 2

0436

2. ENGINEERING DATA

2. ENGINEERING DATA:2.1 Rig Data:

Drilling Contractor:	Haffner Pty. Ltd.	
Drilling Plant:	Make:	OIME
	Type:	Model SL-5 (SL-750)
	Rated Capacity:	12,500 ft with 4-1/2" OD drill pipe.
	Motors:	3-Caterpillar D-3408
Mast:	Make:	Parco Model P-131
	Type:	Cantilever
	Rated Capacity:	550,000 lbs (10 lines)
Pumps:	Make:	2-Continental EMSCO
	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 "D" Annular Gate
	Size:	13-5/8" 13-5/8"
	Rating (psi)	5000 5000
Choke Manifold:	Make:	MeEvoy
	Size & Type:	3" - 5000 psi W.P. choke and kill with one positive and one adjustable choke and Cameron 3" - 5000 HCR flanged valve.

## Drill collars:

6 X 8" OD 2-13/16" ID X 31 FT. 6-5/8"  
Reg. Connections.

12 X 7" OD 2-13/16" ID X 31 FT. 4-1/2"  
IF Connections.

27 X 6-1/2" OD 2-1/4" ID X 31 FT. 4" IF  
connections.

3 X 4-1/8" OD 2" ID X 31 FT. 3-1/2"  
Reg. Connections.

2 X 12-3/4" square X 2-3/4" ID - 6-5/8"  
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. KOA  
Model 2

Capacity: 245 psi inlet and 1400  
psi discharge at 1500  
CFM.

## Diverter:

Make: Shaffer

Model: Type 79 rotating BOP.

Rating: 3000 psi

## Injection pumps:

Make: 2 only Ingersoll-Rand

Model: 1 X 2-1/2 HS

## Capacity:

8 GPM at 1600 psi each powered by SCR  
variable speed electric motors.

Mud Tanks: Size & Capacity: 3 tank system - returns, settling and suction. Total capacity: 752 barrels.

Shale Shaker: Make: Brandt  
Type: Single dual screen

Mud Mixers: Make: 4-Brandt heavy duty  
Type: 32" blade - electrically driven

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.

Centrifuge: 'NL Baroid' standard mud centrifuge - 18 x 28 decanting centrifuge, conical bowl with 30 GPM 12 lb/gal. mud fluid capacity and 120 lb/min. conveying capacity.

Drill pipe: 4-1/2" OD 16.6 lbs/ft. API Grade "E". Seamless range 2 - 18 deg. taper, internally coated, with 6-1/4" OD by 3-1/2" tool joints, hardbanded 4" IF connections.

## 2.2 Drilling Record:

The following is a summary of relevant drilling activities on a day by day basis. Figure 3 is the annotated time/depth graph.

Date	E.T.D.	Details of Operations, Descriptions and Results.
1/7/85	77	Moved in and rigged up Haffner OIME SL 750 Rig No. 1. Spudded East Mereenie No. 19 at 0730 hrs. Drilled 17-1/2" hole to 49' with air and stiff foam. POH Bit No. RR1. RIH Bit No. RR2. Drilled 17-1/2" hole to 51'. POH to change bit and service hammer. RIH Bit No. RR1. Drilled 17-1/2" hole to 77' with air and stiff foam.
2/7/85	150	Drilled 17-1/2" hole to 150' with air and stiff foam. POH to run conductor. Ran 3 joints of 15" conductor, 1/4" wall ERW and cemented in place with 120 sacks Class "A" cement. Average slurry weight 15.2 ppg. Cut conductor. Nipple up blooie line.
3/7/85	390	Make up 13-1/2" bit and hammer. Install rotating head. RIH Bit No. 3 and drill 5' cement. Drilled 13-1/2" hole to 390' with air dusting.
4/7/85	736	Drilled 13-1/2" hole to 725' with air and foam. Moisture encountered around 410'. POH to change bit. Lay out hammer and pick-up junk sub. RIH Bit No. RR3. Drilled 13-1/2" hole to 736' with air and foam, working junk sub. Foam injection rate 10 bbls/hr.
5/7/85	996	Work junk sub. POH to change bit. Layout junk sub. RIH Bit No. 5. Reamed from 715 to 736'. Drilled 13-1/2" hole to 996' with air and foam. Foam injection rate 6 bbls/hr.
6/7/85	1285	Drilled 13-1/2" hole to 1043'. POH to change bit. Pick up shock sub and cross-overs. RIH Bit No. 6. Drilled 13-1/2" hole to 1285' with air and foam. Foam injection rate 6 bbls/hr.
7/7/85	1427	Drilled 13-1/2" hole to 1384'. POH to change bit. Lay out 8" stabilizer. Make up Bit No. 7 and junk sub and RIH. Pick up 2 x 7" D.C's. Slip and cut drilling line. RIH Bit No. 7. Reamed from 1352 to 1384'. Work junk sub. Drilled 13-1/2" hole to 1427' with air and foam. Foam injection rate 6 bbls/hr.
8/7/85	1620	Drilled 13-1/2" hole to 1620' with air and foam. Foam injection rate 6 bbls/hr. Water returns 1400 bbls/hr.

9/7/85 1848 Drilled 13-1/2" hole to 1671' with air and foam. POH to change Bit No 7. Lay out junk sub. RIH with Bit No. 8. Reamed from 1620'-1671'. Drilled 13-1/2" hole to 1848' with air and foam. Foam injection rate 10 bbls/hr. Water returns 1550 bbls/hr.

10/7/85 2163 Drilled 13-1/2" hole to 2163' with air and foam. Foam injection rate 10 bbls/hr. Water returns 1550 bbls/hr.

11/7/85 2255 Drilled 13-1/2" hole to 2255' with air and foam. Foam injection rate 10 bbls/hr. POH to run 10-3/4" casing. Rig to run casing. Ran 57 joints of 10-3/4", 40.5 lbs/ft, H-40 casing with the shoe set at 2252'. Cemented casing using 220 sacks Class "A" cement with 0.2% HR-4, maintaining an average slurry weight of 14.9 ppg. Cemented top job from 191 feet to surface. Cut and weld conductor onto 10-3/4" casing. WOC.

12/7/85 2270 Nipple up BOPs. Pressure test blind rams, choke manifold, HCR all to 1000 psi. Lay out 8" DCs. Make up BHA - 9 x 6-1/2" DCs, 2 x 9-7/8" stabilisers and RIH with Bit No. 9. Tag cement at 2203'. Drill cement and float with water. Pressure test pipe rams and Hydril to 1000 psi. Drill out cement and shoe. Drilled 9-7/8" hole to 2270' with air, drying out hole.

13/7/85 3001 Drilled 9-7/8" hole to 3001 ft with air dusting.

14/7/85 3411 Drilled 9-7/8" hole to 3411' with air dusting. POH Bit No. 9. Make up Bit No. 10 and two stabiliser rubbers. RIH.

15/7/85 3860 RIH with Bit No. 10. Circulated gas out of hole. Reamed from 3348' - 3411'. Drilled 9-7/8" hole to 3735' with air dusting. Open hole gas flow test at 3735' measured 465 Mcfd from the Lower Stairway Sandstone. Drilled 9-7/8" hole to 3860' with air dusting.

16/7/85 4111 Drilled 9-7/8" hole with air dusting to 4043'. Mud up with 10.5 ppg water based mud. Circulate and condition mud. Flow check. No flow. Drilled 9-7/8" to 4111' with water based mud.

17/7/85 4217 Drilled 9-7/8" hole to 4142' with water based mud. Pump pill and POH. Make up Bit No. 11 and change stabiliser rubbers. RIH. Slip 50' drilling line. RIH. Reamed from 4092'-4142'. Drilled 9-7/8" hole to 4217' with water based mud.

18/7/85 4370 Drilled 9-7/8" hole to 4370' with water based mud.

19/7/85 4452 Drilled 9-7/8" hole to 4423'. POH to change bit. RIH with Bit No. 12. Reamed from 4343' to 4423'. Drilled 9-7/8" hole to 4452' with water based mud.

20/7/85 4582 Drilled 9-7/8" hole to 4582' with water based mud.

21/7/85 4595 Drilled 9-7/8" hole to 4595'. POH (strap out) to run 8-5/8" casing. Rig to run casing. Ran 108 joints of combination Atlas Bradford and 8 round ST&C, 32 lb/ft, K-55 8-5/8" casing with shoe at 4594. Cemented using 270 sacks Class "G" with 0.75% CFR-2 and 0.2% Hallad 22-A.

22/7/85 4600 Rig down BOPs. Cut casing. Nipple up and pressure test B-section at 1000 psi. Nipple up crossover spool and BOPs. Lay out 7" DCs. Make up BHA and RIH with Bit No. 13. Slip and cut drilling line. RIH. Tag plug at 4544'. Drill plug and float. Pressure test pipe rams and hydril to 1000 and 500 psi respectively. Drilled cement and shoe with water based mud. Drilled 7-5/8" hole to 4600 ft.

23/7/85 4700 Drilled 7-5/8" hole to 4607 ft with water based mud. Displace hole to oil based mud. Drilled 7-5/8" hole to coring point at 4700' with oil based mud. POH. Make up Bit No. 14 and RIH to ream undergauge hole.

24/7/85 4709 RIH Bit No. 14. Reamed from 4698 to 4700'. Work junk sub. POH to cut core. RIH 7-5/8" Core Bit No. 1. Reamed from 4615 to 4700'. Cut Core No. 1 from 4700 to 4709' with oil based mud.

25/7/95 4729 Cut core No. 1 from 4709 to 4729'. POH. Recover core 100%. Lay out core barrel and make up test tools. RIH with test tools. Slip 50' drilling line. RIH. Run DST No. 1 over the interval 4691 to 4729'. Open tool initially for 15 mins and close in for 30 mins.

26/7/85 4783 Open tool for second flow 118 mins and shut in for 266 mins. GTS after 15 mins at a rate TSTM. No oil to surface. Recovered 10 bbls of 47.8 API oil on reverse circulation. Field chart readings:-

IHP	IFP	ISIP	FFP	FSIP	FHP	BHT
2077	16	1659	458	1664	2032	-

POH. Break out test tools. Make up BHA and Bit No. RR14. RIH. Drilled 7-5/8" to 4783' with oil based mud.

27/7/85 4805 POH to cut core No. 2. RIH core barrel, jars and Core Bit No. RR1. Reamed from 4737 to 4783'. Cut Core No. 2 from 4783 to 4805'.



28/7/85 4810 Cut Core No. 2 from 4805 to 4810'. POH. Recover core 100%. Lay out core barrel and make up test tools. RIH for DST No. 2. Run DST No. 2 over the interval 4779 to 4810'. Open tool initially for 15 mins and close in for 30 mins. Open tool for second flow 90 mins and close in for 210 mins. No gas or oil to surface. Recovered 3 bbls rat hole mud reverse circulation. Field Chart readings:-

IHP	IFP	ISIP	FFP	FSIP	FHP	BHT
2116	13	1269	97	1439	2124	-

POH with test tools.

29/7/85 4834 POH. Lay out test tools. Make up core barrel. RIH with Core Bit No. RR1. Cut Core No. 3 4810 to 4834' with oil based mud.

30/7/85 4839 Cut core No. 3 4834 to 4839'. POH. Recover core 100%. Lay out core barrel and make up test tools. RIH for DST No. 3. Run DST No. 3 over the interval 4808 to 4839'. Open tool initially for 15 mins and shut in for 30 mins. Open tool for second flow 120 mins and shut in for 270 mins. GTS after 33 mins at a rate TSTM. No oil to surface. Recovered 2-1/2 bbls oil cut mud on reverse circulation. Field Chart readings:-

IHP	IFP	ISIP	FFP	FSIP	FHP	BHT
2145	63	1118	168	1520	2150	-

POH with test tools.

31/7/85 4885 POH. Lay out test tools. RIH with Bit No. RR14 and near bit reamer. Drilled 7-5/8" hole to 4885' (TD) with oil based mud. POH. Rig to run electric logs. Run logs.

1/8/85 4885 Run electric logs. Rig down Gearhart. RIH with Bit No. RR14 and clean out hole. POH for DST. Make up test tools.

2/8/85 4885 Make up test tools. RIH for DST No. 4. Run DST No. 4 over the interval 4606 to 4885'. Open tool initially for 16 mins, close in for 30 mins. Open tool for second flow 180 mins, close in for 180 mins. GTS after 33 mins at 4,476 cfd. No oil to surface. Recovered 18 bbls of oil and oil/gas cut mud on reverse circulation. Field Chart readings:-

IHP	IFP	ISIP	FFP	FSIP	FHP	BHT
2179	160	1763	312	1732	2162	-

POH. Lay out test tools. Make up Bit No. RR14. RIH. Circulate and condition mud.

3/8/85 4885 Circulate and condition mud. POH sideways. Rig to run 5-1/2" casing. Ran 124 joints of 14 lbs/ft, J55, 8 round ST & C 5-1/2" casing with shoe set at 4884'. Install modified tubing hanger and landing joint. Tested to check if casing landed. Layout out landing joint. Circulate casing and pump 25 bbls EZ spot spacer prior to cementing.

4/8/85 4885 Rig up and cement casing with 207 sacks Class "G" cement with 0.2% Hallad 22-A and 0.75% CFR-2. Average slurry weight 15.1 ppg. Displace cement with 118 bbls 8.6 ppg brine. Pumped plug with 1000 psi. Pressure tested lines to 1000 psi. Rig to run 2-3/8" tubing. Ran 143 joints of 2-3/8" and set at 4520'. Nipple down BOP's. Nipple up X-mas tree. Rig released at 1700 hrs.

2.3 Hole Sizes and Depths:

17-1/2" to 150 feet

13-1/2" to 2255 feet

9-7/8" to 4595 feet

7-5/8" to 4885 feet

2.4 Casing and Cementing Record:

15" conductor:	Weight:	1/4" wall ERW
	Grade/ Connections	1/4" wall ERW/welded
	Shoe Depth:	150 feet
	Cement Used:	120 sacks Class "A"
	Additives:	Nil
	Slurry Weight:	15.2 lb/gal
10-3/4" casing:	Weight:	40.5 lb/ft
	Grade/ Connections:	H-40, 8 RD & ST & C
	No. of Joints:	57
	Total Length:	2258 feet
	Shoe Depth:	2252 feet
	Cement Used:	329 sacks Class "A"
	Additives:	0.2% HR4
	Slurry Weight:	14.9 lb/gal

8-5/8" casing:	Weight:	32 lb/ft
	Grade/ Connections:	(1) K55/AB, FL-4S (2) K55/8RD, ST & C
	No. of Joints:	(1) 56 (2) 52
	Total Length:	4611 FEET
	Shoe Depth:	4594 feet
	Cement Used:	270 sacks Class "G"
	Additives:	0.2% Hallad 22-A 0.75% CFR-2
	Slurry weight:	15.2 lb/gal
5-1/2" casing:	Weight:	14 lb/ft
	Grade/ Connections:	J55/8RD, ST & C
	No. of Joints:	124
	Total Length:	4867 FEET
	Shoe Depth:	4884 FEET
	Cement Used:	207 sacks Class "G"
	Additives:	0.2% Hallad 22-A 0.75% CFR-2
	Slurry weight:	15.1 ppg

2.5 Drilling Fluids:

A summary of the drilling fluid properties is shown below in Table 1.

TABLE 1

DEPTH IN KB (FT)	DAYS FROM SPUD	FLUID TYPE	INJECTION ADDITIVE	INJECTION RATE (LBS/HR)	MUD WEIGHT (PPG)	FUNNEL VISCOSITY (SEC/ORT)	PLASTIC VISCOSITY (CP)	YIELD POINT (LBS/100FT <sup>2</sup> )	CAKE THICKNESS (32nd of in)	GEL STRENGTH		WATER LOSS (CC)	OIL/WATER RATIO % - %	SOLIDS CONTENT %	SAND CONTENT %	P H	SALINITY X 1000 PPM	ELECT. STABILITY (VOLTS)	FLUID LOSS (-) or GAIN (+) to FORMATION ± (bls - hr)	FORMATION
										SEC	MIN									
100	1	AIR	FOAM																	MEREENIE SS
155	2	AIR																		MEREENIE SS
475	3	AIR																		MEREENIE SS
739	4	AIR	FOAM																	MEREENIE SS
1043	5	AIR	FOAM	8																MEREENIE QUARTZITE
1336	6	AIR	FOAM																	MEREENIE QUARTZITE
1472	7	AIR	FOAM																	MEREENIE QUARTZITE
1664	8	AIR	FOAM																	MEREENIE QUARTZITE
1943	9	AIR	FOAM																	MEREENIE SS, CARM
2255	10	AIR	FOAM																	CARMICHAEL
2255	11																			CARMICHAEL
2401	12	AIR																		CARMICHAEL U. STOKES
3098	13	AIR																		U. TO L. STOKES
3502	14	AIR																		L. STOKES TO U. STWY
4030	15	AIR																		M. TO L. STAIRWAY
P1																				L. STWY - HORN VALLEY
4140	16	W MUD			10.5	42	12	14	2			8.8				11	.9			PACCOOTA P1
4142	17	W MUD			10.5	44	14	14	2	5/14		9.6	9	.25	11		.9			PACCOOTA P1
4273	18	W MUD			10.5	44	15	15	2	5/14		8.4	10	.75	11		.85			PACCOOTA P1 TO P2
4402	19	W MUD			10.5	43	16	14	2	5/15		7.8	10	.5	10.5		1.5			PACCOOTA P2
4490	20	W MUD			10.4	43	17	13	2	6/17		9.2	10	.25	10.5		1.6			PACCOOTA P2
4595	21	W MUD			10.4	43	15	15	2	7/16		8.9	10	.5	10.5		1.6			PACCOOTA P3
4595	22	W MUD			8.5	48														PACCOOTA P3
4650	23	O MUD			8.5	47	18	18		8/12		82-14	14					620		PACCOOTA P3
4709	24	O MUD			8.5	49	20	15		8/14		97-3	15							PACCOOTA P3
4729	25	O MUD			8.5	50	20	16		8/14		97-3	15							PACCOOTA P3
4783	26	O MUD			8.5	48	19	14		8/13		97-3	15							PACCOOTA P3
4805	27	O MUD			8.5	48	19	13		5/10		97-3	15							PACCOOTA P3
4810	28	O MUD			8.5	48	19	13		5/9		97-3	15							PACCOOTA P3
4810	29	O MUD			8.5	48	19	13		5/9		97-3	15							PACCOOTA P3
4834	30	O MUD			8.6	48	21	14		5/2		96-4	14							PACCOOTA P3
4839	31	O MUD			8.6	52	23	14		5/9		96-4	14							PACCOOTA P3

EAST MEREENIE NO. 19 - DRILLING FLUID SUMMARY

2.6 Bit Record:

See Table 2 below -

DEPTH IN KB (FT)	DAYS FROM SPUD	BIT NO.	SIZE (INCHES)	MAKE	TYPE	JET SIZE 3/2nds Inch			SERIAL NO.	DEPTH OUT KB (FT)	DRILLED FOOTAGE	HOURS	AVERAGE FEET PER HOUR	ACCUMULATED DRILLING HOURS	HOB x 1000 LBS	RPM	VERTICAL DEVIATION (DEGS)	PUMP PRESSURE (PSI)	DRILLING FLUID TYPE	S/M		MUD DATA			BIT CONDITION			FORMATION
						1	2	3												PUMP NO. 1	PUMP NO. 2	MUD WEIGHT (LBS/GAL)	VISCOSITY (SEC)	WATER LOSS (CC)	TEETH	BEARINGS	GAUGE (IMS)	
0	1	RR1	17.5	HTC	X3A	0	0	0	VE805	49	49	9	5.4	9	5	65		200	AIR				1	1	IN	PARK MEREEMIE		
46	1	RR2	17.5	HTC		0	0	0	DM897	51	2	1	2	10.0	7	65		200	AIR				1	3	IN	MEREEMIE		
51	1	RR1	17.5	HTC	X3A	0	0	0	VE805	150	99	9.5	10.4	19.5	7	65		200	AIR				3	3	IN	MEREEMIE		
150	2	NB3	13.5	HTC	X33	0	0	0	BD400	725	575	30.5	18.8	50.0	7	60		230	FOAM				8	8	IN	MEREEMIE		
725	4	NR4	13.5	HTC	X33	0	0	0	ZT52	736	11	1.5	7.3	51.5				230	FOAM				8	5	0.18	MEREEMIE		
736	4	NB5	13.5	HTC	X33	0	0	0	BD384	1043	307	23.5	13.3	74.5	10	70		180	FOAM				6	5	IN	MEREEMIE		
1043	6	NB6	13.5	HTC	X33	0	0	0	BD369	1384	341	28.5	12.2	86	30	70		300	FOAM				6	6	0.18	MEREEMIE QUARTZITE		
1384	8	NB7	13.5	HTC	X33	0	0	0	BD438	1671	287	34.5	8.3	121.1	30	80		300	FOAM				7	5	0.18	MEREEMIE QUARTZITE		
1671	8	NB8	13.5	HTC	X33	0	0	0	BD410	2255	584	38.0	15.4	136.5	30	90		425	FOAM				6	5	0.06	L. MEREEMIE CARMICHAEL		
2255	10	NB9	9.87	HTC	J22	0	0	0	FC493	3410	1155	42.3	27.3	178.8	15	95		150	AIR				6	5	0.13	CARMICHAEL U. STOKES		
3110	14	NB10	9.87	HTC	J44	0	0	0	DL468	4142	731	47.3	15.5	226.1	40	75		750	AIR				6	3	IN	L. STOKES HORN VALLEY		
4142	16	NB11	9.87	HTC	J44	16	16	16	AT599	4423	281	42.5	6.6	268.6	40	65		900	MHWD	110		10.5	4	3	0.18	PACOOTTA P1-P2		
4423	20	NB12	9.87	HTC	J55R	16	16	16	XA722	4595	172	30.5	5.6	299.1	40	65		900	MHWD	110		10.5	4	3	IN	PACOOTTA P2-P3		
4595	21	NB13	7.65	SMITH	FR	14	14	18	EP9588	4700	105	16	6.5	315.1	35	60		1025	OHWD	110		10.4	4	1	0.06	PACOOTTA P3		
4698	23	NB14	7.65	SMITH	FR	14	14	18	EP9666	4700	2	.25	8.0	315.4	2	100		1025	OHWD	110	100	8.5	4	8	IN	PACOOTTA P3		
4700	24	C1	7.65	CHRIS	C23				4050705	4729	29	16	1.8	331.4	15	60		900	OHWD	110		8.5	5	0	0.06	P3-120/130		
4729	25	NR14	7.65	SMITH	FR	14	14	18	EP9666	4783	54	7.75	6.9	339.1	35	65		1000	OHWD	110		8.5	4			PACOOTTA P3		
4783	26	NR1	7.65	CHRIS	C23				4050705	4810	27	17.75	1.5	356.9	15	60		900	OHWD	100		8.5	4			P3-190		
4810	27	RR17	7.65	CHRIS	C23				4050705	4839	29	21.25	1.4	378.2	18	60		925	OHWD	100		8.5	4			P3-230		
4939	31	RR14	7.65	SMITH	FR	14	14	18	EP9666	4885	46	8.75	5.3	387.0	35	65		1000	OHWD	100		8.5	5			PACOOTTA P3-P4		

TABLE 2

EAST MEREEMIE NO. 19 BIT DATA SUMMARY

2.7 Deviation Record:  
 Deviation surveys are listed below -

TABLE 3

DEPTH KB (FT)	SURVEY NO.	DEVIATION ANGLE (DEGS) B	DEPTH INTERVAL (2A-1A = C)	MEAN DEVIATION (DEGS) (1B+2B = D)	DEPTH CORRECTION (FT) C-(CxCOSD)	CUMULATIVE CORRECTION (FT)	TRUE VERTICAL DEPTH (FT) (C x COSD)	LATERAL DRIFT (FT) (C x SIND)	CUMULATIVE LATERAL (FT)
75	1	0.50	75	0.25			75	0.3	0.3
141	2	0.50	56	0.50			141	0.6	0.9
291	3	0.25	150	0.38			291	1.0	1.9
500	4	0.25	209	0.25			500	0.9	2.8
620	5	0.50	120	0.38			620	0.8	3.6
911	6	0.25	291	0.38			911	1.9	5.5
1209	7	0.25	298	0.25			1209	1.3	6.8
1462	8	0.50	253	0.38			1462	1.7	8.5
1562	9	0.75	100	0.62			1562	1.1	9.6
1839	10	1.00	277	0.87			1839	4.2	13.8
1996	11	1.25	157	1.12			1996	3.1	16.9
2249	12	2.25	253	1.75	0.1	0.1	2249	7.7	24.6
2454	13	1.75	205	2.00	0.1	0.2	2454	7.2	31.8
2737	14	2.50	283	2.13	0.2	0.4	2737	10.5	42.3
2895	15	2.50	158	2.50	0.1	0.5	2895	6.9	49.2
3054	16	3.00	159	2.75	0.3	0.8	3053	7.6	56.8
3212	17	3.00	158	3.00	0.2	1.0	3211	8.3	65.1
3370	18	5.25	158	4.125	0.4	1.4	3369	11.36	76.46
3496	19	5.25	126	5.25	0.5	1.9	3494	11.52	87.98
3623	20	5.25	127	5.25	0.5	2.4	3621	11.62	99.6
3843	21	5.50	220	5.375	1.0	3.4	3840	20.6	120.2
4033	22	8.50	190	7.00	1.4	4.8	4028	23.15	143.35
4064	23	8.00	31	8.25	0.32	5.12	4059	4.44	147.79
4286	24	6.25	222	7.125	1.7	6.82	4279	27.53	175.32
4412	25	5.00	126	5.625	0.6	7.42	4405	12.35	187.67
4570	26	4.50	158	4.75	0.54	7.96	4562	13.08	200.75
4765	27	4.50	195	4.50	0.6	8.56	4756	15.30	216.05

EAST MEREENIE NO. 19

DEVIATION RECORD

## 2.8 Formation Testing:

Four drill stem tests were run during the drilling of the well. Summary results are presented below with full details included as Appendix 6.

### Drill Stem Test No. 1:

Interval: 4691 to 4730 feet (39ft)  
 Date: 25th July, 1985  
 Tester: Halliburton  
 Formation: Pacoota P3-120/130 sands  
 Type of Test: Open hole conventional  
 Water Cushion: Nil  
 Times: First Flow: 15 mins  
 First Shut-in: 30 mins  
 Second Flow: 118 mins  
 Second Shut-in: 266 mins

### Top Bourdon Recorder Pressures (Field Results)

Initial Hydrostatic: 2076 psig  
 First Flow: 16 psig  
 Initial Shut-in: 1659 psig  
 Second Flow: 458 psig  
 Second Shut-in: 1664 psig  
 Final Hydrostatic: 2032 psig

Results: Instant moderate blow, maximum flowing pressure of 1 psi. GTS at a rate TSTM on ISI. Very small weak flare. Recovered 10 bbls of 47.8 API oil on reverse circulation.

Conclusions: Formation contains oil however permeability is poor.



Drill Stem Test No. 2:

Interval: 4779 to 4810 feet (31 ft)  
 Date: 28th July, 1985  
 Tester: Halliburton  
 Formation: Pacoota P3-190 sand  
 Type of Test: Open hole conventional  
 Water Cushion: Nil  
 Times: First Flow: 15 mins  
 First Shut-in: 30 mins  
 Second Flow: 90 mins  
 Second Shut-in: 210 mins

## Top Bourdon Recorder Pressures (Field Results)

Initial Hydrostatic:	2116 psig
First Flow:	13 psig
Initial Shut-in:	1269 psig
Second Flow:	97 psig
Second Shut-in:	1439 psig
Final Hydrostatic:	2124 psig

Results: Tool opened with very weak blow (manifold shut to flare line). Blow increased to moderate. Manifold was opened and blow decreased to very weak. Blow stopped completely after 61 minutes into second flow period. NGTS. Recovered 3 bbls rat hole mud.

Conclusions: Tight formation.

Drill Stem Test No. 3:

Interval: 4808 to 4838 feet (30 ft)  
 Date: 30th July, 1985  
 Tester: Halliburton  
 Formation: Pacoota P3-230 sand  
 Type of Test: Open hole conventional  
 Water Cushion: Nil  
 Times: First Flow: 15 mins  
 First Shut-in: 30 mins  
 Second Flow: 120 mins  
 Second Shut-in: 270 mins

## Top Bourdon Recorder Pressures (Field Results)

Initial Hydrostatic: 2145 psig  
 First Flow: 63 psig  
 Initial Shut-in: 1117 psig  
 Second Flow: 168 psig  
 Second Shut-in: 1520 psig  
 Final Hydrostatic: 2150 psig

Results: Tool opened with immediate weak blow (manifold closed) building weak-moderate (with manifold open) at ISI. GTS after 33 mins at a rate TSTM. Recovered 2-1/2 bbls oil cut mud.

Conclusions: Formation contains oil however permeability is poor

Drill Stem Test No. 4:

Interval: 4606 to 4885 feet (279 ft)  
 Date: 2nd August, 1985  
 Tester: Halliburton  
 Formation: Pacoota P3 total  
 Type of Test: Open hole conventional  
 Water Cushion: Nil  
 Times: First Flow: 16 mins  
 First Shut-in: 30 mins  
 Second Flow: 180 mins  
 Second Shut-in: 180 mins

## Top Bourdon Recorder Pressures (Field Results)

Initial Hydrostatic:	2178 psig
First Flow:	160 psig
Initial Shut-in:	1763 psig
Second Flow:	312 psig
Second Shut-in:	1732 psig
Final Hydrostatic:	2162 psig

Results: Tool opened with immediate weak blow building to moderate after 6 mins (manifold closed). Manifold open in second flow period, weak blow building slowly. GTS after 33 mins at 4,476 cfd. Blow remained weak to moderate till FSI. Recovered 18 bbls of oil and 3 bbls gas cut mud. Pure sample of 46 API oil recovered from test tool sampler.

Conclusions: Formation contains oil however permeability is poor.

2.9 Completion Data:

5-1/2" production casing was run to 4884 ft and cemented in place. 2-3/8" tubing was run to 4520 ft.

East Mereenie No. 19 was suspended pending future stimulation and testing. The rig was released at 1700 hours on 4th August, 1985.

# EAST MEREENIE No. 19

## TIME / DEPTH GRAPH

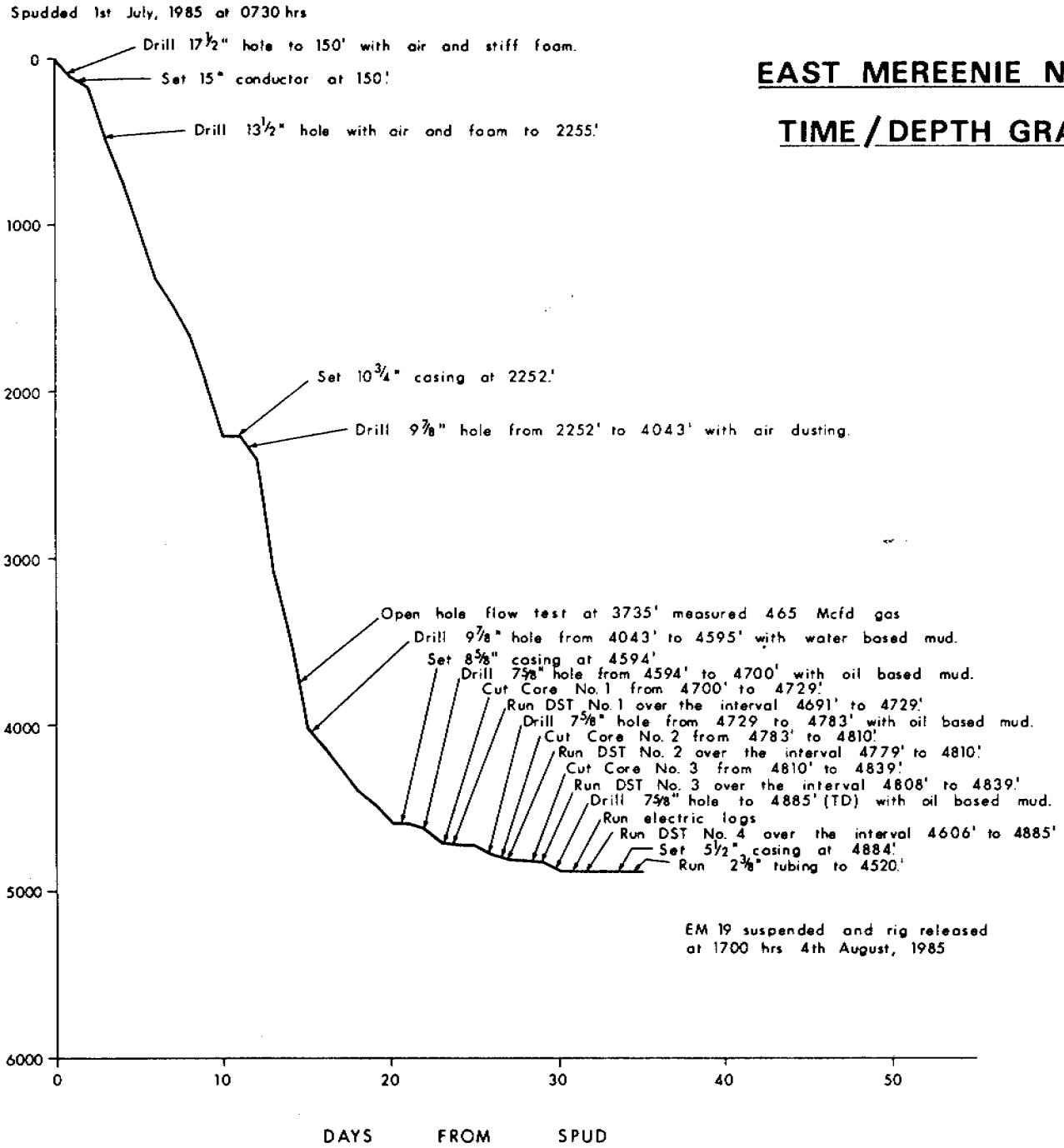
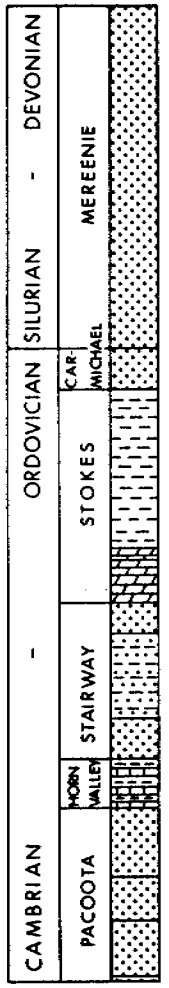
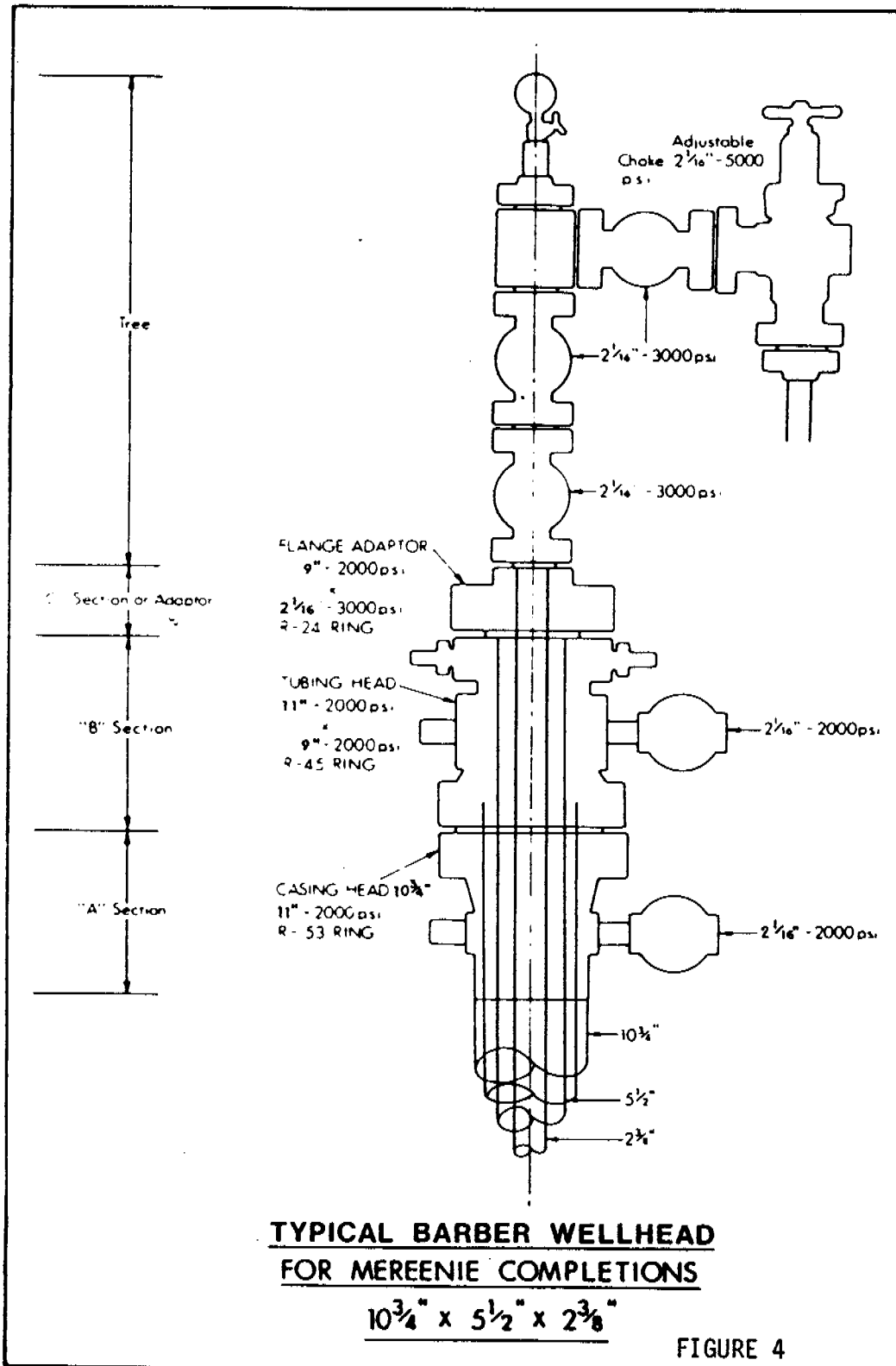


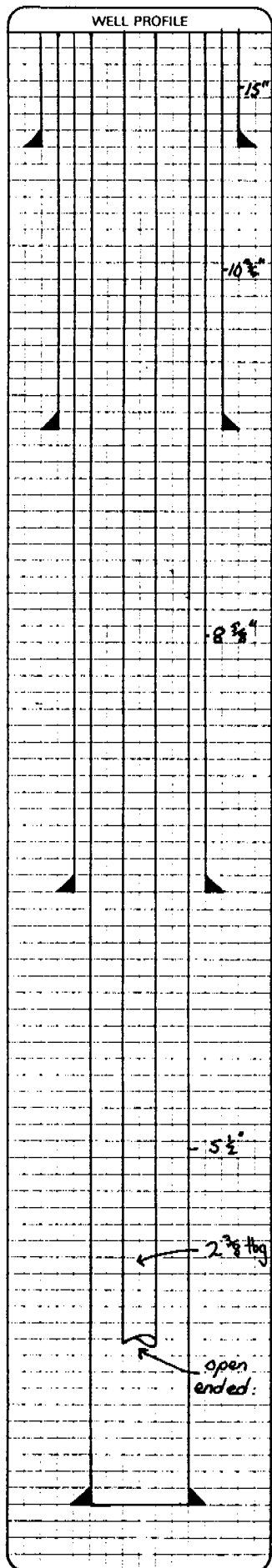
FIGURE 3



**MOONIE OIL N.L.**

**WELL COMPLETION SUMMARY**

DATE: 8-85  
DAY MONTH YEAR



WELL NAME EAST MEREENIE NO. 19  
 WELL LOCATION LAT 24°01'52" LONG 131°37'32"  
 K.B. ELEVATION 2362 K.B. TO CASING FLGE 17.60 K.B. TO TUBING FLGE \_\_\_\_\_  
 CASING SIZE I.O.D. WEIGHT SET AT TOP INTERVAL DEPTH  
 CASING 15" 50 150'  
 CASING 10-3/4" 40.5 2251  
 PERES. CSG 8-5/8" 32.0 4593  
5-1/2" 14.0 4884 7-5/8" HOLE  
 DIAMETER OPEN HOLE \_\_\_\_\_  
 TUBING: SIZE 2-3/8" O.D. WEIGHT 4.7 kg/m GRADE J55  
 TYPE/CLASS EUE MAKE JAP NKK  
 No. OF JOINTS ON LOCATION - TALLIED LENGTH -  
 No. of JOINTS 143 joints TALLIED LENGTH 4504.37  
~~PERMANENTLY IN WELL~~ TEMP

**FINAL TUBING STRING FROM BOTTOM UPWARD**

DESCRIPTION	LENGTH ft		SET AT TOP	REMARKS
143 JTS 2-3/8" TUBING	4504	37		
ADAPTOR TO KB	15	20		
*NB 2-3/8" TUBING IS HUNG OFF OF ADAPTOR FLANGE. NOT LANDED IN A TUBING HANGER.				
TOTAL STRING LENGTH	4504	37		TIME PIPE STARTED _____
K.B. TO TUBING HANGER FLANGE (PLUS)	15	20		TIME ON BOTTOM _____
SETTING DEPTH K.B.	4519.	57		CASING INTERNAL DEPTH BY TUBING _____

WEIGHT OF TUBING STRING 20,000 WEIGHT ON PACKER NIL WEIGHT ON HANGER 20,000  
 WELLHEAD MAKE W.P. 2000/3000 BARBER IND FLANGED/SCREWED \_\_\_\_\_  
 MASTER VALVE TYPE GATE MAKE BARTON SIZE 2"/3000  
 CASING VALVES TYPE GATE MAKE BARTON SIZE 2/2000  
 CHOKE 2" TYPE ADJ MAKE GRAY TOOL CO  
 REMARKS *(Note Additional Equipment)*  
\*TUBING HUNG OFF ADAPTOR  
TD 4885 FT

**COMPLETE IN DETAIL**

- TD, PBTD
- Casing & Tubing Depths
- Perforations
- Packers, Nipples, etc.

M. ERWOOD  
AGENT/OPERATOR'S SIGNATURE

1. G E O L O G I C A L   D A T A

### 3. GEOLOGICAL DATA:

#### 3.1 Stratigraphy:

See Stratigraphic Table (Table 4).

#### 3.2 Formation Sampling:

##### (1) Ditch Cuttings :

Samples were taken at 30 foot intervals from 190 to 3960 feet with closer spaced sampling undertaken adjacent to predicted formation tops. From 3960 to 4885 feet (TD) samples were taken at 10 foot intervals.

Throughout the drilling operation two unwashed bagged samples were obtained for each sample interval. For each interval a washed and dried portion was produced from which a three-way sample split was made.

The samples were distributed as follows :

Moonie: 1 set washed & dried; 1 set unwashed

Magellan: 1 set washed & dried

NT Dept of Mines: 1 set washed & dried; 1 set unwashed

Sample descriptions are presented in Appendix 1.

##### (2) Coring :

A total of 85 feet of core was cut over three coring runs with 100% recovery.

All core depths have been corrected to correlatable electric log depths. Descriptions are given in Appendix 2.

CORE NO.	INTERVAL DRILLER FT	INTERVAL CORRECTED FT	CUT FT	REC FT	REC %	BIT TYPE (7-5/8")
1	4700-4729	4701-4730	29	29	100	CHRIST C23
2	4783-4810.5	4788-4818.5	27.5	27.5	100	CHRIST C23
3	4810.5-4839	4818.5-4844	28.5	28.5	100	CHRIST C23
<b>TOTALS</b>			<b>85</b>	<b>85</b>	<b>100</b>	



TABLE 4

## EAST MEREENIE NO. 19 STRATIGRAPHIC TABLE

SYSTEM & SERIES	FORMATION	SUB UNIT	DEPTH (FT)			TRUE THICKNESS	AVERAGE FORMATION DIP	DEVIATION
			KB	TVD	MSL			
MIDDLE TO LATE DEVONIAN	PARKE SILTSTONE		20	0	+2345	43	8	0
MIDDLE DEVONIAN TO LATE SILURIAN	MEREENIE SANDSTONE		43	43	+2322	1651	8	0
LATE ORDOVICIAN	CARMICHAEL SANDSTONE		1710	1710	+655	216	8	0.9
MIDDLE ORDOVICIAN	STOKES SILTSTONE	UPPER	1928	1928	+437	788	8	1.1
		LOWER	2721	2721	-356	271	8	2.5
	STAIRWAY SANDSTONE	UPPER	2993	2992	-627	150	8	2.8
		MIDDLE	3144	3143	-778	414	8	3.0
		LOWER	3559	3557	-1192	198	8	5.3
EARLY ORDOVICIAN	HORN VALLEY SILTSTONE		3757	3754	-1389	249	8	5.4
EARLY ORDOVICIAN TO LATE CAMBRIAN	PACOOTA SANDSTONE	P1	4006	4002	-1637	351	8	8.1
		P2	4357	4350	-1985	226	8	6.0
		P3	4583	4575	-2210	271	8	4.5
		P4	4855	4846	-2481	33 +	8	4.5
LATE CAMBRIAN	GOYDER FORMATION							
	TOTAL DEPTH (LOGGER)		4888	4879	-2514		8	4.5

## (3) Sidewall Sampling :

No sidewall cores were taken.

3.3 Core Analysis:

The core analysis programme for East Mereenie No. 19 was designed to provide data on three intervals, the P3-120/130, P3-190 and the P3-230/250.

Both the P3-120/130 and P3-190 sands were cored in full while the P3-230 sand from the P3-230/250 interval was cored.

Conventional core analysis was carried out on 37 samples over the three intervals by Core Laboratories and Core Services in Brisbane. The results are included as Appendix 3. Whole core analysis was carried out on 6 samples by Core Laboratories in Adelaide. The results are included as Appendix 4. The initial programme of Special Core Analysis planned for East Mereenie No. 19 was cancelled due to poor reservoir and production properties.

Core analysis results in general showed the intervals to have moderate porosity and poor permeability, confirming visual observations of the core and DST results. In particular, the P3-130 sand (the main production interval) is affected by reduced permeability and to a lesser extent reduced porosity. Averaging of core analysis results (conventional and whole core) for net sand intervals ( $\geq 6\%$  Helium Injection porosity) is as follows :

<u>SAND</u> <u>INTERVAL</u>	<u>AV. HOR</u> <u>KA-MD</u>	<u>MAX HOR</u> <u>KA-MD</u>	<u>AV HE INJ</u> <u>Ø%</u>	<u>MAX HE INJ</u> <u>Ø%</u>	<u>AV So</u> <u>%</u>	<u>AV STW</u> <u>%</u>
P3-130	5.6	17	8.0	9.1	37.4	20.3
P3-190	9.4	53	7.4	9.2	6.3	15.4
P3-230	10.6	37	7.8	10.7	7.7	21.2

A comparison of the P3-130 results for East Mereenie No. 19 with core data from the equivalent interval in surrounding wells (East Mereenie Nos. 4, 5 and 7), indicates the extent to which porosity and permeability have been reduced in this normally consistent sand. A reduction in porosity and permeability is also noted for the P3-190 sand in East Mereenie No. 19 when compared with the equivalent interval in East Mereenie Nos. 4 and 5. The P3-230 sand in East Mereenie No. 19 is shown to have better porosity and permeability than the same interval in East Mereenie Nos. 4, 5 and 7 while East Mereenie No. 12, for the same sand, has better porosity and permeability.

Although the established oil/water contact of -2450 feet MSL was cored through in the P3-230 sand, no evidence of a transition zone could be found from core analysis results.

Reasonable correlation exists between Helium Injection porosity and density log porosity. Density log porosity however, is consistently between 1.1 and 1.4 porosity points higher than Helium Injection porosity

### 3.4 Petrology:

A petrological study was carried out on 14 samples from the Pacoota P3 Sandstone by Ken Martin Msc, PhD. All samples are from core plugs for which routine core analysis results are available. The complete report is included as Appendix 5.

All the samples are quartzose sandstones which also contain variable amounts of potash feldspar. The sandstones are extensively cemented by quartz overgrowths causing severe porosity reduction with small amounts of anhydrite and carbonate cements also contributing.

A comparison of P3-130 samples from nearby wells (East Mereenie Nos 4, 5 and 7) indicates that in East Mereenie No. 19, visible porosity and permeability is significantly lower due mainly to its slightly greater content of carbonate and anhydrite cement.

The P3-190 and 230 sands in East Mereenie No. 19 do not appear to differ significantly from other examples of the two intervals. In contrast to the P3-120/130 interval, carbonate cement is not widespread with anhydrite being more abundant than dolomite.

SEM examination of a sample from the P3-120/130 interval showed no sign of formation damage by mud filtrate invasion and/or connate water salts precipitation.

### 3.5 Logging and Surveys:

#### 1. Electric Logging :

The following logs were run using a Gearhart DDL logging unit.

<u>LOG TYPE</u>	<u>RUN</u>	<u>INTERVAL</u>	<u>DATE</u>
GR	1	22-2920	31/7/85
CNS/GR	1	2920-4556	31/7/85
CDL/CNS/GR/CAL	1	4556-4886	31/7/85
DIL/GR	1	4550-4879	31/7/85
CBL/VDL/GR/CCL	1	2130-4623	1/8/85
SPECTRAL GR	1	2800-4886	1/8/85
DCL	1	4596-4880	1/8/85

Prints of all wireline logs are included as Enclosure 4.

#### 2. Velocity Survey :

No velocity survey was run.

#### 3. Penetration Rate and Gas Logs :

The penetration rate was recorded continuously from spud to total depth. Gas was monitored continuously by a conventional hotwire detector during the air dusting and mud drilling phase.

A mud log showing penetration rate, gas, lithological and other pertinent data was prepared at the well site on a daily basis and is included as Enclosure 3.

A composite log is included as Enclosure 2.

#### 4. Deviation Survey :

Deviation surveys were taken at regular intervals during the drilling of the well. The drift and true vertical depth corrections are shown in Table 3.

#### 5. Temperature Surveys :

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

140° F at 4806 feet; Halliburton

134° F at 4886 feet; Gearhart

#### 3.6 Formation Dips:

A structural dip of approximately 8 degrees south east was prognosed for this well.

Based on core bedding plane structures and formation thicknesses as compared with surrounding wells, the figure of 8 degrees appears to be the true formation dip.

#### 3.7 Formation Evaluation:

See Stairway and Pacoota Sandstone Sand Data Sheets. (Tables 5 and 6).

#### 3.8 Relevance to Appraisal Programme:

East Mereenie No. 19 was suspended without having had an oil flow to surface.

The P3-130, 190 and 230 sand intervals were extensively cored and tested in East Mereenie No. 19. Subsequent core analysis showed the zones petrophysical characteristics to be poorer than what was originally anticipated. Drill stem testing confirmed their poor production potential with only the P3-130 interval producing significant quantities of oil. Drill stem test No. 1 tested the P3-130 sand and recovered 10 barrels oil in 133 minutes. Drill stem test No. 4 tested the full Pacoota P3 sub-unit and recovered 18 barrels oil and 3 bbls gas cut mud in 196 minutes. The main production in DST No. 4 is thought to come from the P3-130 interval with minor contribution from other sands.

EAST MEREENIE NO. 19 - STAIRWAY SANDSTONE SAND DATA SHEET

TABLE 5

STRATIGRAPHIC CORRELATION		GROSS SAND GR $\leq$ 80 API		NET SAND $\delta$ CDL $\geq$ 4%				NET SAND $\delta$ CDL $\geq$ 6%			
SAND NAME	INTERVAL KB - FT	INTERVAL KB - FT	t FT	INTERVAL KB - FT	t FT	% AV $\delta$	% MAX $\delta$	INTERVAL KB - FT	t FT	% AV $\delta$	% MAX $\delta$
<u>U. STAIR</u>											
MISC	2993-3026	2993-3026	33								
MISC	3029-3038	3029-3038	9								
MISC	3045-3049	3045-3049	4								
MISC	3056-3062	3056-3062	6								
MISC	3068-3144	3068-3144	76								
			128								
<u>M. STAIR</u>											
MISC	3144-3156	3144-3156	12								
MISC	3161-3165	3161-3165	4								
MISC	3276-3278	3276-3278	2								
MISC	3283-3287	3283-3287	4								
MISC	3303-3307	3303-3307	4								
MISC	3332-3334	3332-3334	2								
MISC	3475-3478	3475-3478	3								
MISC	3480-3488	3480-3488	8								
MISC	3519-3524	3519-3524	5								
			44								
<u>L. STAIR</u>											
MISC	3560-3563	3560-3563	3								
MISC	3568-3572	3568-3572	4								
MISC	3580-3584	3580-3584	4								
MISC	3587-3619	3587-3619	32								
MISC	3647-3652	3647-3652	5								
MISC	3698-3708	3698-3708	10								
MISC	3712-3736	3712-3736	24								
MISC	3737-3757	3737-3757	20								
			102								

TABLE 6

STRATIGRAPHIC CORRELATION		GROSS SAND GR $\leq$ 80 API		NET SAND $\phi$ CDL $\geq$ 4%				NET SAND $\phi$ CDL $\geq$ 6%			
SAND NAME	INTERVAL KB - FT	INTERVAL KB - FT	t FT	INTERVAL KB - FT	t FT	% AV $\phi$	% MAX $\phi$	INTERVAL KB - FT	t FT	% AV $\phi$	% MAX $\phi$
<u>P1</u>											
P1-60	4073-4778	4773-4778	5								
P1-80	4785-4797	4785-4797	12								
P1-110	4111-4117	4111-4117	6								
P1-120	4122-4129	4122-4129	7								
P1-140	4146-4150	4146-4150	4								
P1-200	4196-4208	4196-4208	12								
P1-210	4214-4224	4214-4216	2								
	4214-4224	4219-4221	2								
P1-240	4233-4251	4233-4238	5								
	4233-4251	4241-4251	10								
MISC	4262-4264	4262-4264	2								
MISC	4273-4275	4273-4275	2								
P1-280	4284-4293	4284-4293	9								
P1-310	4305-4337	4305-4337	32								
P1-350	4346-4357	4346-4357	11								
			<hr/>								
			121								
			<hr/>								
<u>P2</u>											
MISC	4376-4378	4376-4378	2								
MISC	4392-4394	4392-4394	2								
MISC	4425-4427	4425-4427	2								
MISC	4441-4444	4441-4444	2								
P2-110	4467-4482	4467-4482	15								
MISC	4545-4547	4545-4547	2								
P2-200	4561-4573	4561-4566	5								
	4561-4573	4570-4573	3								
MISC	4577-4581	4577-4581	4								
			<hr/>								
			37								
			<hr/>								

EAST MEREENIE NO. 19 - PACOOTA SANDSTONE SAND DATA SHEET

TABLE 6 (CONTD)

STRATIGRAPHIC CORRELATION		GROSS SAND GR ≤ 80 API		NET SAND ≥ CDL ≥ 4%				NET SAND ≥ CDL ≥ 6%			
SAND NAME	INTERVAL KB - FT	INTERVAL KB - FT	t FT	INTERVAL KB - FT	t FT	% AV ∅	% MAX ∅	INTERVAL KB - FT	t FT	% AV ∅	% MAX ∅
P3 P3-10	4583-4625	4583-4625	42	4595-4612	17	7.5	10.0	4595-4609	14	8.0	10.0
	4583-4633	4630-4633	3	4614-4616	2	4.5	5.0	4619-4621	2	6.5	7.0
	4583-4633			4618-4623	5	5.5	7.0				
	4583-4633			4627-4632	5	5.0	6.0				
P3-70	4646-4655	4647-4651	4	4646-4651	5	6.0	7.0	4649-4651	2	6.5	7.0
	4646-4655			4652-4655	3						
P3-90 P3-130	4664-4676			4664-4676	12	7.5	12.0	4667-4672	5	9.5	12.0
	4703-4725	4708-4713	5	4703-4725	22	9.0	10.5	4703-4725	22	9.0	10.5
	4703-4725	4718-4721	3								
	4703-4725	4722-4724	2								
MISC	4728-4730			4728-4730	2	5.0	5.5				
MISC	4735-4738			4735-4738	3	5.0	5.5				
P3-150	4738-4772	4741-4744	3	4738-4754	6	6.0	8.0	4767-4772	5	8.0	9.0
	4738-4772	4768-4771	3	4756-4760	4	5.5	6.5				
	4738-4772			4762-4773	11	7.0	9.0				
P3-190	4776-4804	4793-4796	3	4776-4783	7	6.0	7.5	4780-4782	2	7.0	7.5
	4776-4804	4800-4804	4	4788-4804	16	7.5	9.0	4789-4791	2	6.0	6.0
P3-230	4820-4846							4793-4804	11	8.5	9.0
	4820-4846	4821-4846	25	4820-4846	26	8.5	12.0	4820-4822	2	6.0	6.0
P3-250	4847-4852							4824-4844	20	9.5	12.0
	4847-4852	4848-4852	4	4846-4853	7	7.5	9.0	4847-4852	6	8.0	9.0
			101		153				93		

Petrological analysis indicates slightly greater amounts of carbonate and anhydrite cementing to be the cause of lower permeabilities and porosity in the P3-130 interval.

Neither the gas/oil or oil/water contacts were detected in East Mereenie No. 19. The gas/oil contact is assumed to occur at -2130 feet MSL, consistent with the field wide estimate. The previously accepted P3 oil/water contact for the eastern field (-2450 feet MSL) was cored through in the P3-230 and the zone drill stem tested. Corresponding data indicates that although an oil/water transition zone is indicated on the logs if one assumes a constant  $R_w$  (connate water), this may not be the case and certainly an effective oil/water contact occurs in the lower P3 below that previously assumed. The extent of producible oil down structure in the lower P3 is therefore unknown.

Little information can be provided on prospective Pacoota P1 target horizons in this area with no density log information available. Cuttings descriptions do however identify some zones with poor to fair porosity and found hydrocarbon shows to exist for approximately 50% of the sub-unit.

Although the Stairway Sandstone is assumed to be gas saturated, low porosities and permeabilities exist for the most part of this formation. An open hole flow test in the Lower Stairway Sandstone measured 465 Mcfd gas after a continuous gas flare was encountered whilst drilling with air.

Formation dips in the vicinity of East Mereenie No. 19 were found to be consistent with the prognosed dip of 8 degrees.

The potential of East Mereenie No. 19 as an oil producer is to be further evaluated with a workover.