

**EAST MEREENIE NO. 28
WELL COMPLETION REPORT
PETROLEUM LEASE NO. 5, NORTHERN TERRITORY**

BY

MOONIE OIL N.L.

FEBRUARY, 1987

**NORTHERN TERRITORY
GEOLOGICAL SURVEY**

Feb/27 B

C O N T E N T S

	<u>PAGE NO.</u>	<u>Sect.</u>
SUMMARY	1	1
1. GENERAL DATA	3	1
2. ENGINEERING DATA	4	1
2.1 Rig Data	4	2
2.2 Drilling Record	7	2
2.3 Hole Sizes and Depths	14	2
2.4 Casing and Cementing Record	14	2
2.5 Drilling Fluids	16	2
2.6 Bit Record	18	2
2.7 Deviation Record	19	2
2.8 Formation Testing	21	3
2.9 Completion Data	23	4
3. GEOLOGICAL DATA	24	
3.1 Stratigraphy	24	5
3.2 Formation Sampling	24	6
3.3 Logging and Surveys	24	7&9
3.4 Formation Dips	25	10
3.5 Formation Evaluation	25	10
3.6 Relevance to Appraisal Programme	25	10-12

LIST OF ATTACHMENTS

<u>TABLES</u>	Sect.
1. Drilling Fluids	2
2. Bit Record	2
3. Deviation Record	2
4. Stratigraphic Table	8
5. Stairway Sandstone Sand Data Table	11
6. Pacoota Sandstone Sand Data Table	11
 <u>FIGURES</u>	
1. Location Map	1
2. Mereenie Field Well Location	1
3. Time/Depth Curve	2
4. Well Head Diagram	4
5. Well Completion Summary	4
 <u>APPENDICES</u>	
1. Sample Descriptions	13-15
2. Drill Stem Test Results	16-17
 <u>ENCLOSURES</u>	
1. Course of Well Diagram	20
2. Composite Well Log	18
3. Mud Log	19
4. Wireline Logs	20-21

S U M M A R Y

SUMMARY

East Mereenie No. 28 is the twenty ninth appraisal well in the current Mereenie Field Appraisal and Development programme. It was designed to be completed for oil production from the P3-120/130, P3-190 and P3-230/250 reservoir horizons which flowed oil in East Mereenie Nos. 7, 4 and 23.

East Mereenie No. 28 was designed to be drilled as a straight hole, with the possibility that it may have to deviated downdip to achieve a minimum 1/4 mile drainage radius in the P3-120/130 horizon. The well would also provide information on prospective P1 target horizons in the area.

It is located 365 meters on a true bearing of 183 degrees from East Mereenie No. 5 and 1130 meters on a true bearing of 300 degrees from East Mereenie No. 19. East Mereenie No. 28 is an eastern nose southern flank well.

The well spudded into Mereenie Sandstone on the 1st February 1986 using Haffner Rig No. 1 and reached TD at 4910 ft on the 21st March 1986 in the Pacoota (P4) Sandstone. The main producing reservoir horizon, the P3-130 sand, was intersected at -2208 ft MSL (78 ft below the gas/oil contact at -2130 ft MSL).

The well was drilled to 2181 ft with air and foam. Returns of meteoric water began at 419 ft, averaging 1000 bls/hr with a maximum of 1800 bbls/hr. After 10-3/4" casing had been set at 2178 ft drilling continued with air in a 9-7/8" hole to 2956 ft. The formation tops of the Carmichael Sandstone, Upper Stokes Siltstone and Lower Stokes Siltstone were all picked higher than prognosed, 27 ft, 32 ft and 34 ft respectively. It was decided that the well would have to be deviated down dip from 2956 ft onwards to ensure that the main reservoir sand (P3-120/130) would be a minimum of 50 ft below the gas/oil contact at -2130 ft MSL. Hofco was contracted to deviate the well on a true bearing of 153 degrees, with the P3-120/130 target having a minimum horizontal moveout of 700 ft and TVD of 4660 ft (55 ft below the gas/oil contact). Therefore at 2956 ft the hole was displaced with 8.5 ppg water based mud to enable the well to be sidetracked using a dynadrill. From 2956 ft to 3528 ft a dyna drill and 2 degree bent sub built up a deviation of 10-1/4 degrees in the desired direction. While sidetracking the mud density was increased from 8.5 ppg to 9.2 ppg at 3107 ft due to a gas influx and 26 bbl pit gain. 9-7/8" hole was drilled to 3550 ft with an angle building bottom hole assembly, the well was displaced with air and drilling continued with air dusting to 3601 ft, where gas was encountered. A maximum gas flow of 196 MCFD was measured. Air drilling continued to 3632 ft where the drill string backed off in two places due to a combination of high torque and a down-hole fire. The top fish was screwed into and retrieved. A kill mud of 10.2 ppg (water based) was mixed and circulated before pulling out. A 9-7/8" bit, bit sub, near bit stabilizer, monel drill collar and one 7" drill collar were left in the hole when it was plugged back from 3632 ft to 3494 ft after numerous fishing attempts were unsuccessful. The 9-7/8" hole was drilled and sidetracked from 3494 ft to 3573 ft building a deviation of 11-3/4" degrees in an estimated down dip direction (no monel drill collar in string).

The 9-7/8" hole was drilled from 3575 ft to 4498 ft using various bottom hole assembly configurations, with deviations varying between 10 to 20-1/4 degrees, then remaining between 16 to 17 degrees from 4498 ft to 4910 ft (TD). A re-appraisal of the target position occurred when the Lower Stairway formation top was picked at 3525 ft TVD, only 2 ft lower than originally prognosed. This gave a P3-120/130 target at approximately 350 ft horizontal moveout and 4674 ft TVD (69 ft below the gas/oil contact). Mud density was increased from 10.2 ppg to 10.8 ppg while drilling the 9-7/8" hole section from 3494 ft to 4235 ft due to high gas readings at 3494 ft and between 4152 ft to 4179 ft. 8-5/8" casing was run and cemented at 4706 ft and the hole displaced with 8.5 ppg oil based mud. 7-5/8" hole was drilled to TD at 4910 ft.

Two Drill Stem Tests were run in the 7-5/8" hole section. Drill Stem Test No. 1 (4706 to 4756 ft) tested the P3-120 and 24 ft of the P3-130 sand. Only gas flowed to surface (TSTM) and gas cut rat hole mud was recovered on the reverse circulation. Drill Stem Test No. 2 (4706 to 4910 ft) tested the full P3-120 to P3-250 section, flowing 418 BOPD and 237 MCFD of gas through a 1/2" choke, with a GOR of 567 cu ft/bbl.

Wireline logs were run at TD (4910 ft).

The 2-3/8" production tubing was run with a ball catcher, packer and sliding sleeve. A Christmas Tree was nipped up and the packer set at 4669 ft. The annulus was displaced with brine and the well swabbed in after 4-1/2 hrs. A clean up to flow test measured 229 BOPD and 101 MCFD through a 5/16" choke with a GOR of 441 cu ft/bbl.

East Mereenie No. 28 was completed open hole as an oil producing well. The rig was released at 1000 hrs on the 25th March 1986 having taken 53 days from spud to completion.

1. GENERAL DATA

1. GENERAL DATA:

Well Name & Number: East Mereenie No. 28

Operator: Moonie Oil N.L.

Beneficial Interst
Holders: The Moonie Oil Company Limited
Flinders Petroleum N.L.
Magellan Petroleum Australia Limited

Petroleum Title: Petroleum Lease No. 5

District: Alice Springs, Northern Territory

Location: Latitude: 24°01'33"S
Longitude: 131°36'58"E

Elevation: Ground Level: 2455 ft MSL Not Surveyed
Kelly Bushing: 2475 ft MSL Not Surveyed

Total Depth: 4910 ft (DRILLER) KB, 4854 ft TVD
4912 ft (LOGGER) KB, 4854 ft TVD

Spudded: 1st February 1986, 2030 hrs

Rig Released: 25th March 1986, 1000 hrs

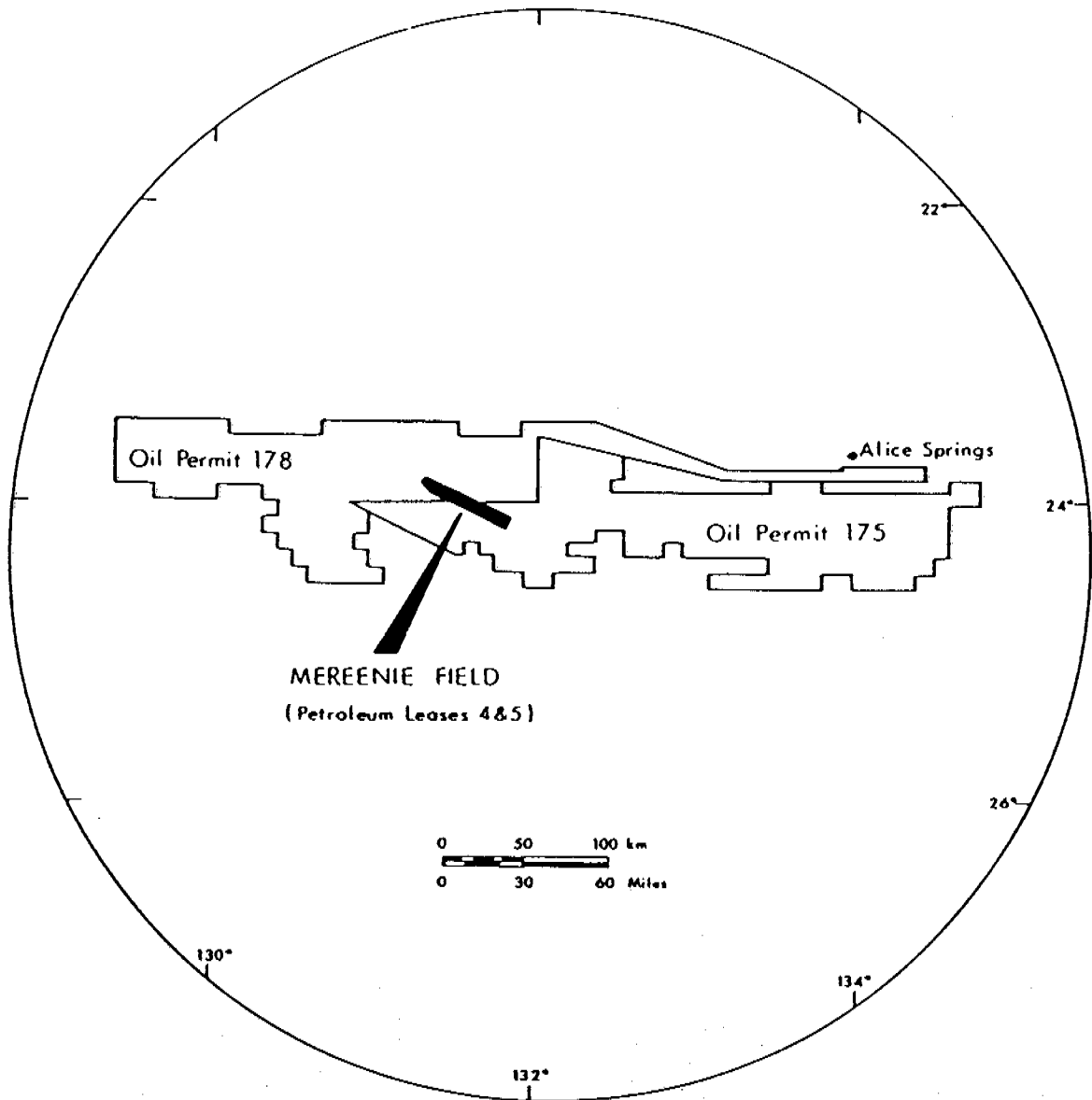
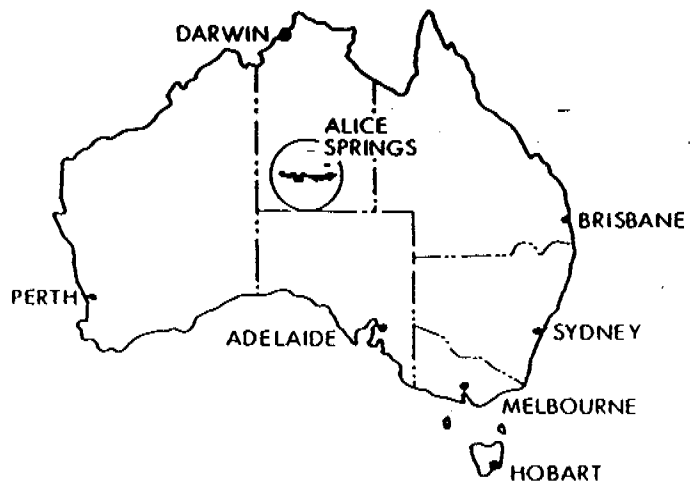
Total Days Drilling: 49 days

Well Status: Completed Oil Well

Geological Formation
Tops:

Mereenie Sandstone	Surface
Carmichael Sandstone	1676 ft
Stokes Siltstone	1895 ft
Stairway Sandstone	2927 ft
Horn Valley Siltstone	3773 ft
Pacoota Sandstone	4010 ft

East Mereenie No. 28 was deviated well, the above formation tops are measured from the Kelly Bushing (KB).

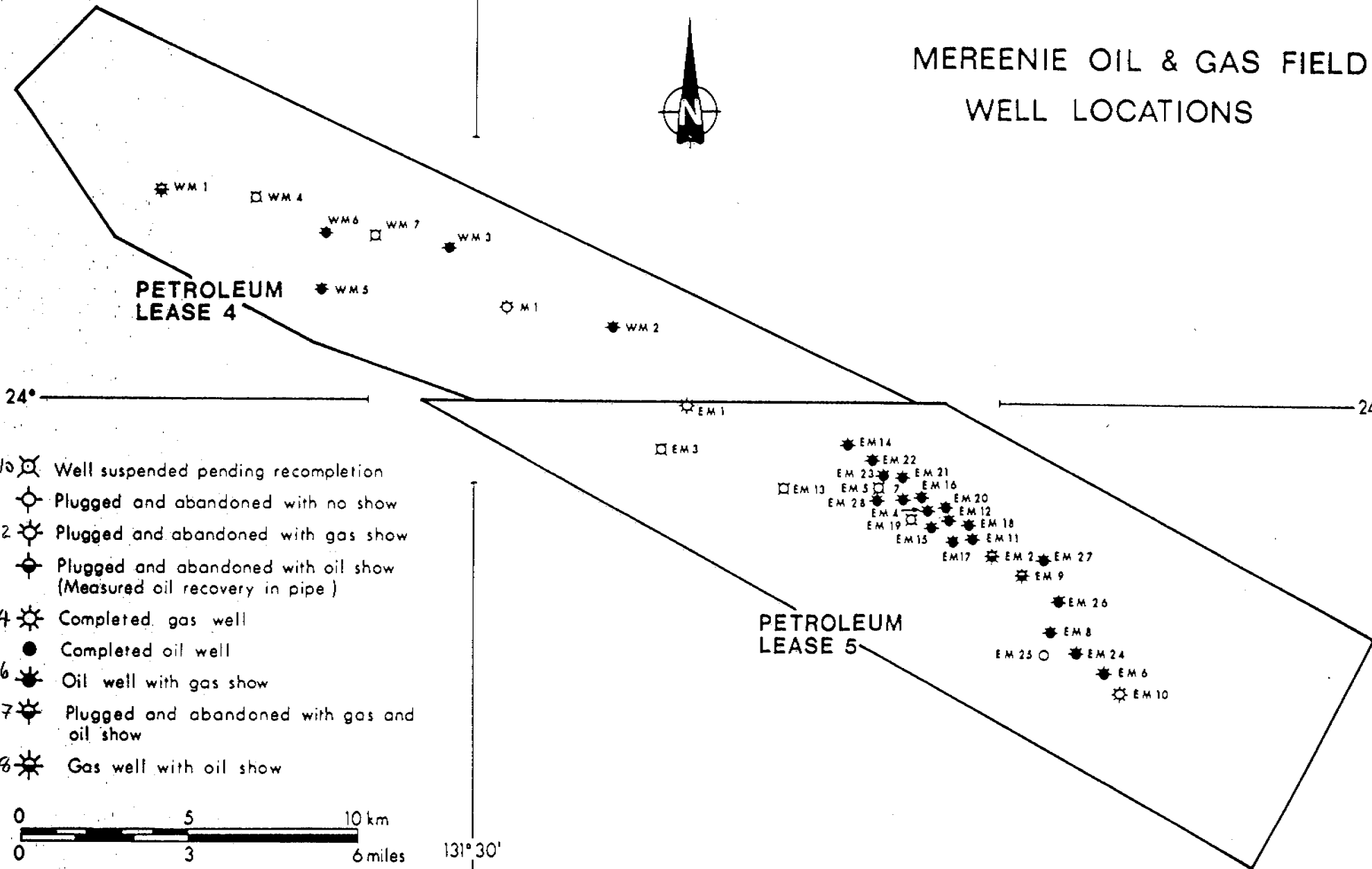


LOCATION MAP

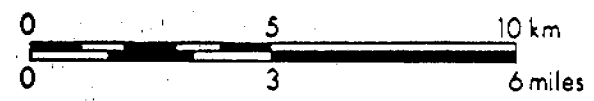
MEREENIE OIL & GAS FIELD WELL LOCATIONS



131° 30'



- 10 ☒ Well suspended pending recompletion
- ☉ Plugged and abandoned with no show
- 2 ☀ Plugged and abandoned with gas show
- Plugged and abandoned with oil show (Measured oil recovery in pipe)
- 4 ☀ Completed gas well
- Completed oil well
- 6 ☀ Oil well with gas show
- 7 ☀ Plugged and abandoned with gas and oil show
- 8 ☀ Gas well with oil show



131° 30'

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 Gate "D" Annular Gate
	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 HCR flanged valve.

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.

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.
2 X 12-3/4" square X 2-3/4" ID - 6-5/8" reg. connections.

2.2 Drilling Data

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

DATE	E.T.D. (FT)	DETAILS OF OPERATIONS, DESCRIPTIONS AND RESULTS
1/2/86	28	Rig up and drill rat hole. East Mereenie No. 28 was spudded at 2030 hours. Drill 17-1/2" hole to 28 ft with air and stiff foam.
2/2/86	132	Drill 17-1/2" hole to 41 ft, POH. RIH with new bit No. 2 and drill 17-1/2" hole to 47 ft, picked up square drill collar and handling tools. Drilled 17-1/2" hole to 132 ft, picking up N/B stabilizer and two 8" drill collars. Foam injection rate 6 to 9 bbls/hr.
3/2/86	189	Drill 17-1/2" hole to 148 ft, picked up N/B stabilizer, drill 17-1/2" hole to 155 ft with air and foam, blow hole dry, POH. Run 15" conductor pipe and set at 155 ft with 69 sacks of class A cement and 2% CaCl. Nipple up rotating head body and blooey line. Lay out 17-1/2" BHA and make up 13-1/2" BHA. RIH with new bit No. 3, pick up and set rotating head. Drill 13-1/2" hole to 189 ft, blowing hole dry. Rig up and attempt to drill mousehole.
4/2/86	467	Attempt to drill mouse hole, breakdown mousehole BHA. POH and lay out 7" drill collar, 8" drill collar, stabilizer and cross over. Break out bit and hammer and pick up 7" drill collar and make up mousehole, BHA. Drill mousehole with hammer and breakout mousehole, BHA. RIH with re-run bit No. 3, make up 7" drill collar, cross over and pup joint, pick up 8" drill collar and stabilizer. Drill 13-1/2" hole to 419 ft air dusting. Start misting at 419 ft and drill to 467 ft with air and foam. Foam injection rate 8 to 10 bbls/hr.
5/2/86	751	Drill 13-1/2" hole to 708 ft with a survey at 687 ft of 0 degrees. POH, lay down hammer, pick up shock sub and new bit No. 4. RIH to 630 ft, ream to 708 ft, drill 13-1/2" hole to 751 ft with air and foam. Foam injection rate 10-15 bbls/hr.

6/2/86	1077	Drill 13-1/2" hole to 1077 ft with a survey at 923 ft of 1/4 degrees. Foam injection rate 10 bbls/hr. Water returns 900 bbls/hr.
7/2/86	1253	Drill 13-1/2" hole to 1153 ft. POH, change bit and RIH with new bit No. 5, ream from 1121 ft to 1153 ft. Drill 13-1/2" hole to 1253 ft with air and foam. Foam injection rate 10 bbls/hr. Water returns 1600 bbl/hr.
8/2/86	1386	Drill 13-1/2" hole to 1314 ft. POH, change bit and RIH with new bit No. 6 to 1259 ft, ream to 1314 ft. Drill 13-1/2" hole to 1386 ft using air and foam. Foam injection rate 8 bbls/hr.
9/2/86	1563	Drill 13-1/2" hole to 1563 ft with a survey at 1425 ft of 1/2 degrees. Water returns 900 bbls/hr, POH.
10/2/86	1725	POH, change bit, RIH with new bit No. 7 to 1405 ft. Ream to 1563 ft, drill 13-1/2" hole to 1725 ft with a survey at 1713 ft of 3/4 degrees. Water returns 1100 bbls/hr.
11/2/86	1959	Drill 13-1/2" hole to 1879 ft with survey at 1871 ft of 1/2 degrees. POH, change bit and RIH with new bit No. 8 to 1848 ft, ream to 1879 ft. Drill 13-1/2" hole to 1959 ft with air and foam, injection rate 12 bbls/hr.
12/2/86	2181	Drill 13-1/2" hole to 2181 ft, circulate hole clean, POH, lay down shock sub, drill collar, N/R stabilizer and bit. Rig up to run 10-3/4" casing, nipple down blooey line.
13/2/86	2181	Cut conductor, run 55 joints of K55, 10-3/4" casing. Make up cement head lines, pressure test to 1000 psi. Cement with 161 sacks Class A cement with 0.2% HR4, followed by a top cement job consisting of 69 sacks class A cement with 0.1% CaCl2. WOC, back out and lay down landing joint and mud up casing bowl and valves. Nipple up BOPs, pressure test, RIH with 8" drill collar, lay down same plus stabilizer. Make up new bit No. 9, near bit reamer, two N/R stabilizers and RIH.
14/2/86	2483	Pick up 9 X 6-1/4" drill collar and RIH. Tag cement at 2123 ft, drill out cement plug and float collar and cement to 2151 ft. Pressure test pipe rams and hydril to 1000 psi. Drill out cement, shoe and rathole to 2181 ft. Drill 9-7/8" hole to 2277 ft with air dusting. Change out rotating head and drill 9-7/8" hole to 2482 ft air dusting with a survey at 2277 ft of 3/4 degrees.

15/2/86 2823 Drill 9-7/8" hole to 2823 ft air dusting with a survey at 2806 ft of 3/4 degrees.

16/2/86 2956 Drill 9-7/8" hole to 2956 ft, blow hole clean and displace hole with 8.5 ppg water based mud, circulate. Rig up air supply to power tongs, POH. Pick up 17 single of drill pipe and RIH. POH.

17/2/86 3043 POH, lay out stabilizers, cross over, near bit reamer and bit. Make up monel drill collar and wait on tools for deviating hole, prepare for Dyna-drill run. Pick up navi drill, 2 degrees bent sub, and RIH with new bit No. 10 to 2956 ft. Drill 9-7/8" hole to 3043 ft with surveys at approximately 31 ft intervals.

18/2/86 3103 Drill deviated 9-7/8" hole with surveys to 3051 ft, break out drill and bit. Pick up near bit reamer and re-run bit No. 9. RIH to 3010 ft, ream to 3051 ft. POH, pick up navi drill and new bit No. 11 and RIH. Drill deviated 9-7/8" hole with 8.4 ppg water based mud to 3103 ft with surveys every 32 ft.

19/2/86 3187 Drill 9-7/8" hole to 3115 ft, POH. Change bit, RIH with new bit No. 12 to 3085 ft, ream to 3107 ft, gas bubble to surface, with 26 bbl pit gain. Increase mud density in active system to 9.2 ppg and displace well through choke with heavy mud. Ream to 3115 ft, drill 9-7/8" deviated hole to 3187 ft with surveys.

20/2/86 3310 Drill deviated 9-7/8" hole to 3245 ft with surveys. POH, change bits, check navi-drill, R.I.H. with new bit No. 13 and. Drill 9-7/8" deviated hole to 3310 ft with surveys.

21/2/86 3434 Drill deviated 9-7/8" hole with surveys to 3364 ft. POH change bit, check navi-drill, RIH with new bit No. 14. Drill deviated 9-7/8" hole to 3434 ft with 9.3 ppg water based mud.

22/2/86 3528 Drill deviated 9-7/8" hole to 3528 ft. Survey 10-1/4 degrees AT 3478 ft. POH lay out navi-drill, 2 degrees bent sub and x/o. Pick up building assembly and RIH with new bit No. 15.

23/2/86 3601 RIH to 2963 ft, ream to 3528 ft. Drill 9-7/8" hole to 3550 ft, displace mud with water, lay out 36 singles drill pipes, unload water with air. RIH to 3550 ft, unload water, blow hole dry, drill 9-7/8" hole to 3601 ft air dusting. Flow check well for gas (196 MCFD on 1/4" choke).

24/2/86 3632 Drill 9-7/8" hole to 3632 ft with air, mechanical back-off caused by high torque and down-hole fire. Make up fish assembly R.I.H., screw into fish. Mix kill mud, displace hole with water based mud at 10.2 ppg to kill well, pump pill. POH. 7" drill collar, monel drill collar, near bit stabilizer, bit sub and 9-7/8" bit left down hole. Make up fishing assembly. RIH, dress and make up each collar joint, tag fish at 3572 ft. Attempt to recover fish, POH.

25/2/86 3632 POH, no fish. RIH, pick up N/R stabilizer, attempt to recover fish. POH, no fish, RIH with re-run bit No. 14, ream to 3572 ft, POH. Make up overshot, RIH, attempt to retrieve fish, POH, no fish. Make up impression block, RIH, slip and cut drilling line.

26/2/86 3632 RIH, tag fish, POH, drill hole in impression block for circulation. RIH with impression block, circulate and tag fish, pump pill, POH. Make up new BHA, spear, one joint drill pipe, crossovers. RIH, circulate gas cut mud.

27/2/86 3632 Attempt to retrieve fish with spear, pump pill, POH no fish. Lay out tools, RIH with open ended drill pipe to 3584 ft, mix and pump cement, plug No. 1, made up of 96 sacks class A cement, displace plug with water. POH nipple up flow line.

28/2/86 3494 Circulate, pick up single and tag cement at 3566 ft. Circulate gas cut mud, pump pill, POH. RIH, slick with open ended drill pipe, circulate gas cut mud prior to pumping cement plug No. 2. POH. RIH with re-run bit to 2153 ft, WOC, RIH, tag cement at 3494 ft

1/3/86 3512 Circulate gas cut mud, weight up to 10.5 ppg and circulate. POH. Make up new BHA, pick up navi drill, 2 degrees bent sub. RIH with new bit No. 17. WOC. RIH with navi drill to 3488 ft, orientate tool, sidetrack with navi drill from 3494 ft to 3500 ft, make up mud saver sub. Drill sidetracked 9-7/8" hole to 3512 ft with 10.5 ppg water based mud.

2/3/86 3562 Drill sidetrack 9-7/8" hole with navi-drill to 3523 ft, ream with navi drill from 3518 ft to 3523 ft. POH. Lay out 15 singles, check navi drill and change bit, RIH with new bit No. 18, ream from 3516 to 3523 ft. Drill sidetrack 9-7/8" hole to 3562 ft with survey at 3519 ft of 11-3/4 degrees.

3/3/86	3670	Drill sidetrack 9-7/8" hole to 3573 ft, POH. Lay out navi drill and 2 degrees bent sub, pick up stabilizers and mud up new angle building BHA. RIH with re-run bit No. 16, ream from 3508 ft to 3573 ft. Drill sidetrack 9-7/8" hole to 3670 ft with a survey at 3596 ft of 14-3/4 degrees.
4/3/86	3775	Drill deviated/sidetracked 9-7/8" hole to 3709 ft, POH, pick up shock sub and new bit No. 19, RIH. Drill deviated/sidetracked 9-7/8" hole to 3775 ft with survey, using 10.5 ppg water based mud.
5/3/86	3827	Drill deviated/sidetracked 9-7/8" hole to 3803 ft with a survey of 18-3/4 degrees at 3787 ft. POH to change BHA to holding assembly. Make up BHA and new bit No. 20, RIH to 3699 ft. Break circulation, ream from 3699 to 3803 ft. Drill deviated/sidetracked 9-7/8" hole to 3827 ft with 10.7 pps water based mud.
6/3/86	3920	Drill deviated/sidetracked 9-7/8" hole to 3902 ft, pump pill and POH.
7/3/86	4002	RIH with new bit No. 21. Drill deviated sidetracked 9-7/8" hole from 3920 ft to 4002 ft with 10.6 ppg water based mud. Survey greater than 20 degrees.
8/3/86	4115	Drill deviated 9-7/8" hole to 4115 ft with 10.5 ppg water based mud, circulate at 4115 ft.
9/3/86	4208	Pump pill, POH. Make up new bit No. 22, lay out near bit stabilizer and string stabilizer to decrease deviation. RIH and drill deviated and sidetrack 9-7/8" to 4208 ft, check for flow at 4179 ft due to high gas peak, increase mud weight to 10.7 ppg.
10/3/86	4255	Drill deviated and sidetracked 9-7/8" hole to 4255 ft pump pill, POH. Take surveys coming out of hole at; 4224 ft 11 degrees, 4192 ft 10-1/2 degrees, 4066 ft 16 degrees, 3877 ft 20-1/4 degrees. Make up angle building BHA and RIH with new bit No. 23. Work and free stuck pipe at 4101 ft, ream from 4101 ft to 4204 ft.
11/3/86	4323	Ream to 4255 ft. Drill deviated and sidetracked 9-7/8" to 4323 ft with 10.8 ppg water based mud, pump pill, POH.
12/3/86	4425	RIH with new bit No. 24, slip and cut drilling line. Drill deviated and sidetracked 9-7/8" hole to 4425 ft.

13/3/86 4498 Drill deviated and sidetracked 9-7/8" hole to 4498 ft, pump pill, POH. Survey at 4481 ft 16 degrees. RIH with new bit No. 25.

14/3/86 4569 Ream from 4467 ft to 4498 ft. Drill deviated and sidetracked 9-7/8" hole to 4569 ft, pump pill, POH. Survey at 4551 ft 17 degrees. RIH with new bit No. 26.

15/3/86 4648 Ream from 4530 ft to 4569 ft. Drill deviated and sidetracked 9-7/8" hole with 10.8 ppg water based mud to 4648 ft, pump pill, POH. Survey at 4615 ft was 16-1/2 degrees. RIH with re-run bit No. 20 and ream from 4520 ft to 4525 ft and 4618 ft to 4633 ft.

16/3/86 4707 Ream from 4633 ft to 4648 ft. Drill 9-7/8" deviated and sidetracked hole to 4707 ft, POH, survey at 4677 ft was 16-1/2 degrees. Run 8-5/8" casing.

17/3/86 4707 Run 8-5/8" casing and set shoe at 4706 ft cement with 276 sacks class G cement plus 0.75% CFR-2 and 0.3% Hallad 22A. Pressure test BOP's and choke manifold. Lay out 9-7/8" BHA. Make up 7-5/8" BHA and RIH with new bit No. 27.

18/3/86 4756 RIH with new bit No. 27. Drill out cement (4655 ft) and float, pressure test BOP's. Drill shoe and displace hole with 8.2 ppg oil based mud. Drill 7-5/8" deviated and sidetracked hole to 4746 ft, circulate sample, drill to 4756 ft, circulate sample and POH.

19/3/86 4756 POH, slip drilling line, make up Howco test tools and RIH for DST No. 1 over interval 4706 to 4756 ft in P3-120/130 sand. Open tool initially for 20 minutes, close for 40 minutes. Open tool for final flow for 302 minutes and close for 358 minutes. Gas to surface with small flare after 15 minutes. No oil to surface. Recovered 7.7 bbls of gas cut rat hole oil mud from reverse circulation. POH and lay out test tools. Field chart readings :

IHP	IFP	ISIP	FFP	FSIP	FHP	BHT
2095	64.6	1395.8	185.4	1639.4	2081	146°F

20/3/86 4845 Lay out test tools. Make up BHA with new bit No. 28, ream from 4725 ft to 4756 ft. Drill deviated and sidetracked 7-5/8" hole from 4756 ft to 4845 ft with 8.5 ppg oil based mud.

21/3/86 4910 POH at 4845 ft. RIH with new bit No. 29 and drill deviated and sidetracked 7-5/8" hole to 4910 ft (TD). Circulate hole clean, strap out of the hole. (4910.5 ft). Rig up and run wireline logs with Gearhart.

22/3/86 4910 Run wireline logs, rig down. RIH with re-run bit No. 29, circulate hole and POH. Make up Howco test tools and RIH for DST No. 2 over interval 4706 ft to 4910 ft (Pacoota P3-120 to P3-250 sands). Open tool initially for 20 minutes, close for 40 minutes. Open tool for second flow 178 minutes and close for 404 minutes. Gas to surface after 8 minutes, rat hole mud after 89 minutes, oil after 96 minutes of total flow. Diverted to separator for 73 minutes with flow rates of 418 BOPD, 237 MCFD through a 1/2" choke, GOR 567 cu ft/bbl. Field chart readings :

IHP	IFP	ISIP	FFP	FSIP	FHP	BHT
2207	382	1772	475	1766	2184	150°F

23/3/86 4910 Drop bar, reverse circulate, POH. Lay down Howco test tools. RIH with casing scraper and re-run bit No. 29. Circulate gas cut mud and condition hole. POH sideways. Rig up to run 2-3/8" tubing.

24/3/86 4910 Change pipe rams to 2-3/8", strap and clean tubing. Make up packer assembly and run 2-3/8" tubing. Nipple down BOP's and nipple up Christmas Tree.

25/3/86 4910 Pressure test Christmas Tree. Set packer at 4669 ft. Rig up Gearhart and open sliding sleeve. Displace annulus with 9 ppg brine and tubing with 20 bbls crude oil. Close sliding sleeve with Gearhart. Rig up Gearhart to swab the well, OTS at 1400 hrs after 13 swabs. Rig released at 1000 hrs on the 25/3/86.

NOTE: Clean up to flow test. Sands: P3-120 to 250. Flow 229 BOPD on a 5/16" choke with Gas at the rate of 101 MCFD. GOR was 441 cu ft/bbl.

Spudded 1st. February, 1986 at 2030 hrs.

EAST MEREENIE No. 28

TIME / DEPTH GRAPH

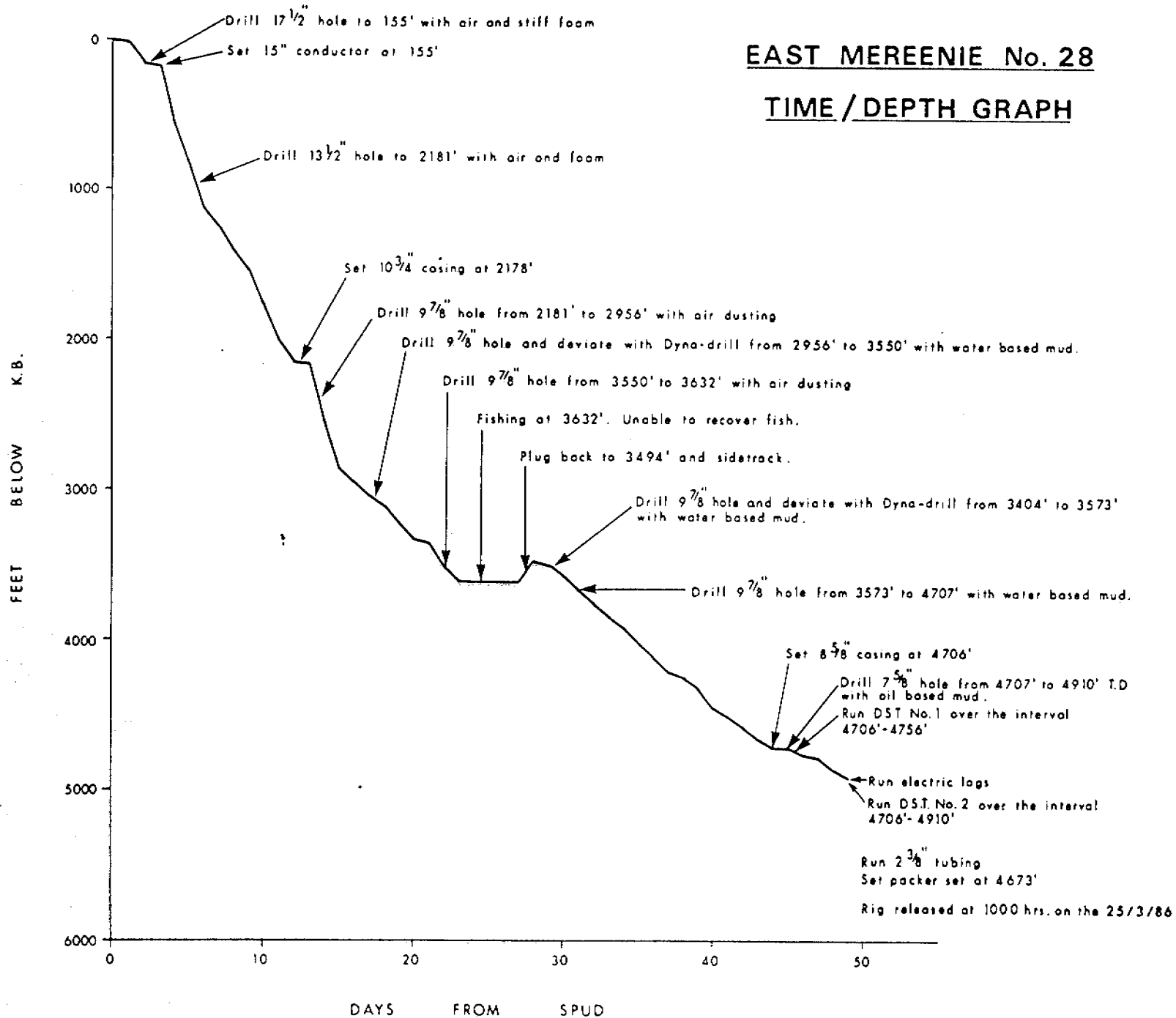
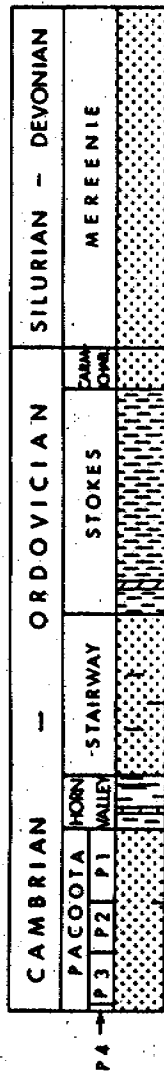


FIGURE 3

2.3 Hole Sizes and Depths:

17-1/2" to 155 ft

13-1/2" to 2181 ft

9-7/8" to 4707 ft

7-5/8" to 4910 ft

2.4 Casing and Cementing Record:

15" conductor:	Weight:	1/4" Wall ERW
	Grade/ Connections:	1/4" Wall ERW/welded
	Shoe Depth:	155 ft
	Cement Used:	69 sacks Class A
	Additives:	2% CaCl ₂
	Slurry Weight:	15.6 ppg
10-3/4" casing:	Weight:	40.5 lb/ft
	Grade/ Connections:	J55
	No. of Joints:	54
	Shoe Depth:	2178 ft
	Cement Used:	161 sacks Class A 69 sacks Class A for top cement job
	Additives:	0.2% HR4 0.1% CaCl ₂ (top job only)
	Slurry Weight:	15.1 ppg

8-5/8" casing:	Weight:	1. 32 lb/ft 2. 32 lb/ft	
	Grade/ Connections:	1. K55/AB 2. J55/8 RND	
	No. of Joints:	112	
	Shoe Depth:	4706 ft	
	Cement Used:	276 sacks Class G	
	Additives:	0.75% CFR2 + 0.3% HALLAD 22A	
	Slurry weight:	15.6 ppg	

DEPTH IN KB (FT)	DAYS FROM SPUD	FLUID TYPE	INJECTION ADDITIVE	INJECTION RATE (LBS/HR)	MUD WEIGHT (PPG)	FUNNEL VISCOSITY (SEC/QRT)	PLASTIC VISCOSITY (CP)	YIELD POINT (LBS/100 FT ²)	CAKE THICKNESS (32ND OF IN)	GEL STRENGTH SEC MIN	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
40	1	AIR	FOAM	7															MEREENIE SANDSTONE
155	2	AIR	FOAM	8															MEREENIE SANDSTONE
189	3	AIR	FOAM	8															MEREENIE SANDSTONE
550	4	AIR	FOAM	12															MEREENIE SANDSTONE
843	5	AIR	FOAM	13														+ 900	MEREENIE SANDSTONE
1146	6	AIR	FOAM	10														+1800	MEREENIE SANDSTONE
1288	7	AIR	FOAM	8														+1600	MEREENIE SANDSTONE
1422	8	AIR	FOAM	8														+1440	MEREENIE SANDSTONE
1568	9	AIR	FOAM	12														+ 900	MEREENIE SANDSTONE
1790	10	AIR	FOAM	12														+ 900	MEREENIE SANDSTONE
2036	11	AIR	FOAM	12															MEREENIE SS/CARM SS
2181	12	AIR																	CARM SS/U. STOKES ST
2181	13	AIR																	U. STOKES ST
2560	14	AIR																	U. STOKES ST
2889	15	AIR																	U. & L. STOKES ST
2956	16	WMUD			8.6	40									11.5				L. STOKES/U. STWY SS
3051	17	WMUD			8.4	36									12.5				U. STWY SANDSTONE
3115	18	WMUD			8.7	39									11.5				U. STWY/M. STWY SS
3235	19	WMUD			9.2	38									11				M. STWY SANDSTONE
3348	20	WMUD			9.3	40									11				M. STWY SANDSTONE
3480	21	WMUD			9.3	41								TR	12				M. STWY SANDSTONE
3528	22	WMUD			9.4	39								TR	11.5				M. STWY SANDSTONE
3550	23	WMUD			9.4	37								TR	11.5				M. STWY SANDSTONE
3632	23	AIR																	M/LWR STWY SS
3632	24	WMUD			10.2	45								TR	11.5				FISHING
3632	25	WMUD			10.2	45								TR	11.5				FISHING
3632	26	WMUD			10.5	46								TR	11.5				FISHING
3632	27	WMUD			10.3	40								2	11				PLUGGING BACK
SIDETRACK HOLE FROM 3494 FT ORIGINAL HOLE TD 3632 FT																			
3494	28	WMUD			10.4	41								.75	11				M. STWY SANDSTONE
3523	29	WMUD			10.6	45								.75	11				M. STWY SANDSTONE
3573	30	WMUD			10.4	48								1	12				M. LWR SANDSTONE
3695	31	WMUD			10.5	45			4					1	12				LWR STWY SANDSTONE

EAST_MEREENIE_NO. 28

TABLE_NO. 1

DRILLING_FLUIDS

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/100 FT ²)	CAKE THICKNESS (32ND OF IN)	GEL STRENGTH SEC MIN	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
3793	32	WMUD			10.6	44			4		14			.75	12				L.STWY/HORN VALLEY ST
3852	33	WMUD			10.7	44			2		11			.5	12				HORN VALLEY ST
3936	34	WMUD			10.6	44			4		13			.5	12				HORN VALLEY/PAC SS
4031	35	WMUD			10.5	44			3		12			.5	11.5				PACOOKA SS (P1)
4123	36	WMUD			10.6	41			3		12			.25	11				PACOOKA SS (P1)
4235	37	WMUD			10.8	45			2		12			.25	11				PACOOKA SS (P1)
4258	38	WMUD			10.8	49			2		12			.5	11				PACOOKA SS (P1)
4331	39	WMUD			10.8	46			2		12			.5	11.5				PACOOKA (P1)(P2) SS
4455	40	WMUD			10.8	44			2		13			.25	11				PACOOKA (P2) SS
4514	41	WMUD			10.8	41			3		11		TR		11				PACOOKA (P2) SS
4591	42	WMUD			10.8	40			3		13			.4	10				PACOOKA (P2) (P3) SS
4675	43	WMUD			10.9	43			3		13			1.0	10				PACOOKA (P3) SS
4707	44	WMUD			10.8	45			3		13			1.0	10				PACOOKA (P3) SS
4707	45	OMUD			8.6	45	12	11	1	2/4		82-18	10	TR			780		PACOOKA (P3) SS
4756	46	OMUD			8.3	45	13	16	1	3/4		79-21	10	TR			600		PACOOKA (P3) SS
4768	47	OMUD			8.3	45	13	16	1	3/4		79-21	10	TR			600		PACOOKA (P3) SS
4855	48	OMUD			8.5	51	28	20	1	5/7		78-22	9		.25		600		PACOOKA (P3) SS
4910	49	OMUD			8.5	52	31	21	2	5/7		79-21	11	TR			680		PACOOKA (P3) (P4) SS

EAST_MERENIE_NO._28

TABLE_NO._1

DRILLING_FLUIDS_(CONTD)

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	SPW		MUD DATA			BIT CONDITION			FORMATION
						PUMP NO. 1	PUMP NO. 2	MUD WEIGHT (LBS/GAL)												VISCOSITY (SEC)	WATER LOSS (CC)	TEETH	BEARINGS	GAUGE (INS)				
																									1	2	3	
0	1	RB1	17.5	BTC	33A				FO10001	41	41	11.5	3.56	11.5	6	50	.5	150	AIR				5	6	1R	KIRKENIE SANDSTONE		
4	2	RB2	17.5	BTC	33				RP190	155	114	18	6.33	29.5	10	45	.5	150	AIR				3	4	1R	KIRKENIE SANDSTONE		
153	3	RB3	15.5	BTC	333				RD804	189	34	5	11.3	32.5	10	70	.25	140	AIR				2	2	1R	KIRKENIE SANDSTONE		
189	4	RB3	15.5	BTC	333				RD804	708	519	31	18.7	63.5	10	65	.25	250	AIR				7	8	.25	KIRKENIE SANDSTONE		
708	5	RB4	15.5	BTC	333				RD642	1155	445	34	13.1	97.5	12	80	.25	160	AIR				4	4	.06	KIRKENIE SANDSTONE		
1153	7	RB5	15.5	BTC	333				RD524	1334	181	24	8.7	121.5	25	80	.25	180	AIR				5	8	.13	KIRKENIE SANDSTONE		
1314	8	RB6	15.5	BTC	335				RD636	1543	249	30	8.3	129.8	20	80	.275	280	AIR				5	3	.19	KIRKENIE SANDSTONE		
1543	9	RB7	15.5	BTC	335				RD608	1875	316	31.5	10	161.3	22	90	.625	350	AIR				5	4	.06	KIRKENIE SS/CARN SS		
1875	11	RB8	15.5	BTC	335				RD609	2181	302	22	13.7	183.3	20	85	.75	375	AIR				2	2	1R	CARN SS/STOKES ST		
2181	13	RB9	9.875	BTC	J22				FW709	2956	775	51.5	15	324.8	5	85	.75	150	AIR				2	2	1R	STOKES ST/STW SS		
2956	16	RB10	9.875	BTC	J44	16	16	16	A7244	3051	95	12.5	8.26	146.3	20	300	.75	700	VHWD	85		8.6	7	8	.38	W. STAIRWAY SANDSTONE		
3031	18	RB11	9.875	BTC	J44	16	16	16	A7193	3115	64	10	6.4	256.3	13	300	3.0	750	VHWD		85	8.5	6	7	.06	W. STW/R. STW SS		
3115	19	RB12	9.875	BTC	J44	16	16	16	A7142	3245	130	25	8.87	271.3	16	300	6.0	800	VHWD		85	9.2	4	5	.06	N. STAIRWAY SANDSTONE		
3245	20	RB13	9.875	BTC	J44	16	16	16	A7158	3364	119	16	7.44	287.3	18	300	7.0	800	VHWD		85	9.3	7	8	1R	N. STAIRWAY SANDSTONE		
3364	21	RB14	9.875	BTC	J44	16	16	16	A7181	3528	164	21.5	7.63	308.8	21	300	7.0	800	VHWD		85	9.4	6	4	.06	N. STAIRWAY SANDSTONE		
3528	22	RB15	9.875	BTC	J44				A7181	3632	104	6	17.3	314.8	21	300	9.5	800	VHWD		85	9.4	-	-	-	-	-	L. STAIRWAY SANDSTONE
3632																							10.3	40	1	1	1R	N. STAIRWAY SANDSTONE
3668	27	RB16	9.875	BTC	J44	16	16	16	A7160	3566												10.6	45	6	3	1R	N. STAIRWAY SANDSTONE	
3494	29	RB17	9.875	BTC	33A	16	16	16	P2768	3525	29	12	2.42	328.8	1	70	11	575	VHWD	100		10.4	48	6	3	1R	M/L STAIRWAY SANDSTONE	
3525	30	RB18	9.875	YAREL	Y537	16	16	16	12104	3573	50	12	4.17	338.8	26	70	13.25	725	VHWD	85		10.5	45	6	2	1R	L. STAIRWAY SANDSTONE	
3573	31	RB16	9.875	BTC	J44	16	16	16	A7140	3709	156	21	6.48	359.8	22	90	15.0	950	VHWD	110		10.6	45	5	2	1R	L. STAIRWAY/HORN VALLEY	
3709	32	RB19	9.875	BTC	J44	16	16	16	A7179	3803	94	28.5	5.08	378.3	30	90	17.0	950	VHWD	110		10.6	41	2	2	1R	HORN VALLEY BILTSTONE	
3803	33	RB20	9.875	BTC	J44	16	16	16	A7178	3920	117	30	3.90	408.3	32	80	19.5	825	VHWD	110		10.5	45	4	3	1R	HORN VALLEY/PACOOTTA P1	
3920	35	RB21	9.875	BTC	J558	16	16	16	J0016	4115	195	43.5	4.48	451.8	30	80	18.0	850	VHWD	100		10.8	45	3	5	.13	PACOOTTA P1 SANDSTONE	
4115	36	RB22	9.875	YAREL	Y537	16	16	16	11977	4255	140	20.5	4.59	482.3	40	60	13.0	825	VHWD	100		10.8	49	3	6	.13	PACOOTTA P1 SANDSTONE	
4255	38	RB23	9.875	YAREL	Y538	16	16	16	11973	4323	68	12	5.87	494.3	30	70	10.5	850	VHWD	100		10.8	44	4	7	.25	PACOOTTA P1/P2 SANDSTONE	
4323	39	RB24	9.875	BTC	J44	16	16	16	A7198	4498	175	28.5	4.79	536.8	30	80	10.5	875	VHWD	100		10.8	41	4	5	.13	PACOOTTA P2 SANDSTONE	
4498	41	RB25	9.875	YAREL	Y537	16	16	16	11972	4569	71	18	3.94	548.8	25	80	14.5	900	VHWD	100		10.8	40	6	3	.19	PACOOTTA P2/P3 SANDSTONE	
4569	42	RB26	9.875	YAREL	Y537	16	16	16	12293	4648	79	24	5.64	582.8	35	80	17.0	900	VHWD	100		10.8	45	6	4	1R	PACOOTTA P3 SANDSTONE	
4648	43	RB20	9.875	BTC	J44	16	16	16	A7178	4707	59	11.5	5.13	574.3	35	70	16.75	900	VHWD	100		8.2	44	6	2	.13	PACOOTTA P3 SANDSTONE	
4707	45	RB27	7.625	SHITE	P1	16	16	16	EP4882	4756	49	10	5.77	594.3	25	70	16.5	975	OHWD	110		8.3	45	6	2	.06	PACOOTTA P3 SANDSTONE	
4756	46	RB28	7.625	SHITE	P4	16	16	16	EP9570	4848	49	20	4.45	614.3	30	65	16.5	975	OHWD	100	110		8.4	50	6	3	1R	PACOOTTA P3/P4 SANDSTONE
4848	47	RB29	7.625	SHITE	P4	16	16	16	EP9743	4910	62	12	5.37	626.3	30	65	16.5	950	OHWD	100	100							

TABLE NO. 7
 7497. KIRKENIE NO. 74 BIT RECORD

DEPTH KB FT.	SURVEY NO.	DEV. ANGLE	DEPTH INERVAL	MEAN DEV.	DEPTH CORRECTION	CUM. CORRECTION	TVD FT.	LATERAL DRIFT FT.	CUM. LATERAL	DIRECTION (EXAMPLE) W320.96N
230	1	.5	230	.25			230	1	1	
441	2	.5	211	.5	.01	.01	441	1.84	2.84	
687	3	0	246	.25		.01	687	1.07	3.91	
923	4	.25	236	.125		.01	923	.52	4.43	
1176	5	.25	253	.25		.01	1176	1.1	5.53	
1425	6	.5	249	.375	.01	.02	1425	1.63	7.16	
1713	7	.75	288	.625	.02	.04	1713	3.14	10.3	
1871	8	.5	158	.625	.01	.05	1871	1.72	12.02	
2155	9	1	284	.75	.02	.07	2155	3.72	15.74	
2277	10	.75	122	.875	.01	.08	2277	1.86	17.6	
2488	11	.75	211	.75	.02	.1	2488	2.76	20.36	
2648	12	.75	160	.75	.01	.11	2648	2.09	22.45	
2806	13	.75	158	.75	.01	.12	2806	2.07	24.52	
2901	14	.75	95	.75	.01	.13	2901	1.24	25.76	
2911	15	1.25	10	1		.13	2911	.17	25.93	N 27 W
2942	16	1.25	31	1.25	.01	.14	2942	.68	26.61	N 3 E
2974	17	2.0	32	1.625	.01	.15	2974	.91	27.52	N 57 E
3005	18	3.25	31	2.625	.03	.18	3005	1.42	28.94	N 80 E
3037	19	4	32	3.625	.06	.24	3037	2.02	26.92	S 77 E
3068	20	4	31	4	.08	.32	3068	2.16	24.76	S 57 E
3100	21	3	32	3.5	.06	.38	3100	1.96	22.8	S 36 E
3131	22	3.75	31	3.375	.05	.43	3131	1.83	20.97	S 38 E
3163	23	4	32	3.875	.07	.5	3163	2.16	18.81	S 32 E
3194	24	4.75	31	4.375	.09	.59	3193	2.36	16.45	S 40 E
3226	25	5.25	32	5	.12	.71	3225	2.79	13.66	S 51 E
3258	26	6	32	5.625	.15	.86	3257	3.14	10.52	S 68 E
3289	27	7	31	6.5	.2	1.06	3288	3.51	7.01	S 72 E
3321	28	7.25	32	7.125	.25	1.31	3320	3.97	3.04	S 66 E
3352	29	6.75	31	7	.23	1.54	3350	3.78	0.74	S 52 E
3384	30	7	32	6.875	.23	1.77	3382	3.83	4.57	S 40 E
3416	31	8	32	7.5	.27	2.04	3414	4.18	8.75	S 36 E
3446	32	9	30	8.5	.33	2.37	3444	4.43	13.18	S 34 E
3478	33	10.25	32	9.625	.45	2.82	3475	5.35	18.53	S 34 E
3516	34	12.25	32	11.25	.61	3.43	3512.5	6.24	24.77	S 32 E
"SIDETRACK HOLE FROM 3491' ORIGINAL HOLE TO 3632"										
3519	35	11.75	41	11	.75	3.57	3515	7.82	26.35	
3596	36	14.75	77	13.25	2.05	5.62	3590	17.65	44	

EAST MERRENIE NO. 28

TABLE NO. 3

DEVIATION RECORD

DEPTH KB FT.	SURVEY NO.	DEV. ANGLE	DEPTH INTERVAL	MEAN DEV.	DEPTH CORRECTION	CUM. CORRECTION	TVD FT.	LATERAL DRIFT FT.	CUM. LATERAL	DIRECTION (EXAMPLE) W320.96N
3660	37	16.75	64	15.75	2.4	8.02	3652	17.37	61.37	
3755	38	18	95	17.38	4.34	12.36	3743	28.38	89.75	
3787	39	18.75	32	18.38	1.63	13.99	3773	10.1	99.85	
3877	40	20.25	90	19.5	5.16	19.15	3858	30.04	129.89	
4066	41	16	189	18.13	9.39	28.54	4037	58.81	188.7	
4192	42	10.5	126	13.25	3.36	31.9	4160	28.88	217.58	
4224	43	11	32	10.75	.56	32.46	4192	5.97	223.55	
4292	44	10	68	10.5	1.14	33.6	4258	12.39	235.94	
4350	45	11	58	10.5	.97	34.57	4315	10.57	246.51	
4418	46	13	68	12	1.49	36.06	4382	14.14	260.65	
4481	47	16	63	14.5	2.01	38.07	4443	15.77	276.42	
4520	48	17	39	16.5	1.61	39.68	4480	11.08	287.5	
4551	49	17	31	17	1.35	41.03	4510	9.06	296.56	
4615	50	16.5	64	16.75	2.72	43.75	4571	18.44	315	
4677	51	16.5	62	16.5	2.55	46.3	4631	17.61	332.61	
4910	52	16.5	233	16.5	9.34	55.74	4854	65.83	398.44	

EAST MERZENIE NO. 28

TABLE NO. 3

DEVIATION RECORD (CONTD)

2.8 Formation Testing:

Two drill stem tests were run during the drilling of the well. A summary of the results is presented below with full details included as Appendix 2.

Drill Stem Test No. 1

Interval: 4706 to 4756 ft (50 ft)
Date: 19th March, 1986
Tester: Halliburton
Formation: Pacoota P3-120 and 24 ft of the P3-130 sand.
Test Type: Open hole conventional
Water cushion: Nil.

Times: First flow: 20 mins
First shut-in: 40 mins
Second flow: 302 mins
Second shut-in: 358 mins

Bottom Bourdon Recorder Pressures (Field Results)

Initial hydrostatic: 2095 PSIG
Initial flow: 65 PSIG
Initial shut-in: 1396 PSIG
Second flow: 185 PSIG
Second shut-in: 1639 PSIG
Final hydrostatic: 2081 PSIG

Results: Immediate weak blow increasing to strong after 2 minutes, decreasing to moderate, gas to surface after 15 minutes with a maximum wellhead pressure of 1 psi. Final flow, gas at surface, strong blow decreasing to weak after 116 minutes of total flow. Maximum wellhead pressure 6 psi after 22 minutes decreasing to 0 psi after 56 minutes of total flow. At 210 minutes surging from very weak to moderate in 1 to 2 minute cycles, at 280 minutes surging from dead to strong in 10 minute cycles. Recovery of gas cut rat hole mud only during reverse circulation. Chart shows gas cut rat hole mud only during reverse circulation. Chart shows pressure surges from gas bubbling at end of final flow.

Conclusions: Valid test with the above sands having poor permeability.

Drill Stem Test No. 2

Interval: 4706 to 4910 ft (104 ft)

Date: 22nd March, 1986

Tester: Halliburton

Formation: Pacoota P3-120 to P3-250, inclusive

Test Type: Open hole conventional

Water cushion: Nil.

Times: First flow: 20 mins
First shut-in: 40 mins
Second flow: 178 mins
Second shut-in: 404 mins

Bottom Bourdon Recorder Pressures (Field Results)

Initial hydrostatic: 2207 PSIG
Initial flow: 382 PSIG
Initial shut-in: 1772 PSIG
Final flow 475 PSIG
Final shut-in: 1766 PSIG
Final hydrostatic: 2184 PSIG

Results: Immediate weak blow increasing to strong after 5 minutes, gas to surface after 8 minutes with a maximum wellhead pressure of 4 psi. Final flow gas at surface, immediate strong blow with 2 psi, decreasing to very weak and Nil psi after 28 minutes total flow. Mud to surface after 89 minutes, oil to surface after 96 minutes. Manifold pressure maximum 120 psi after 105 minutes decreasing to constant 80 psi from 162 minutes to end of final flow. Flow rate of 418 BOPD, gas at 237 MCFD through a 1/2" choke. GOR was 567 cu ft/bbl.

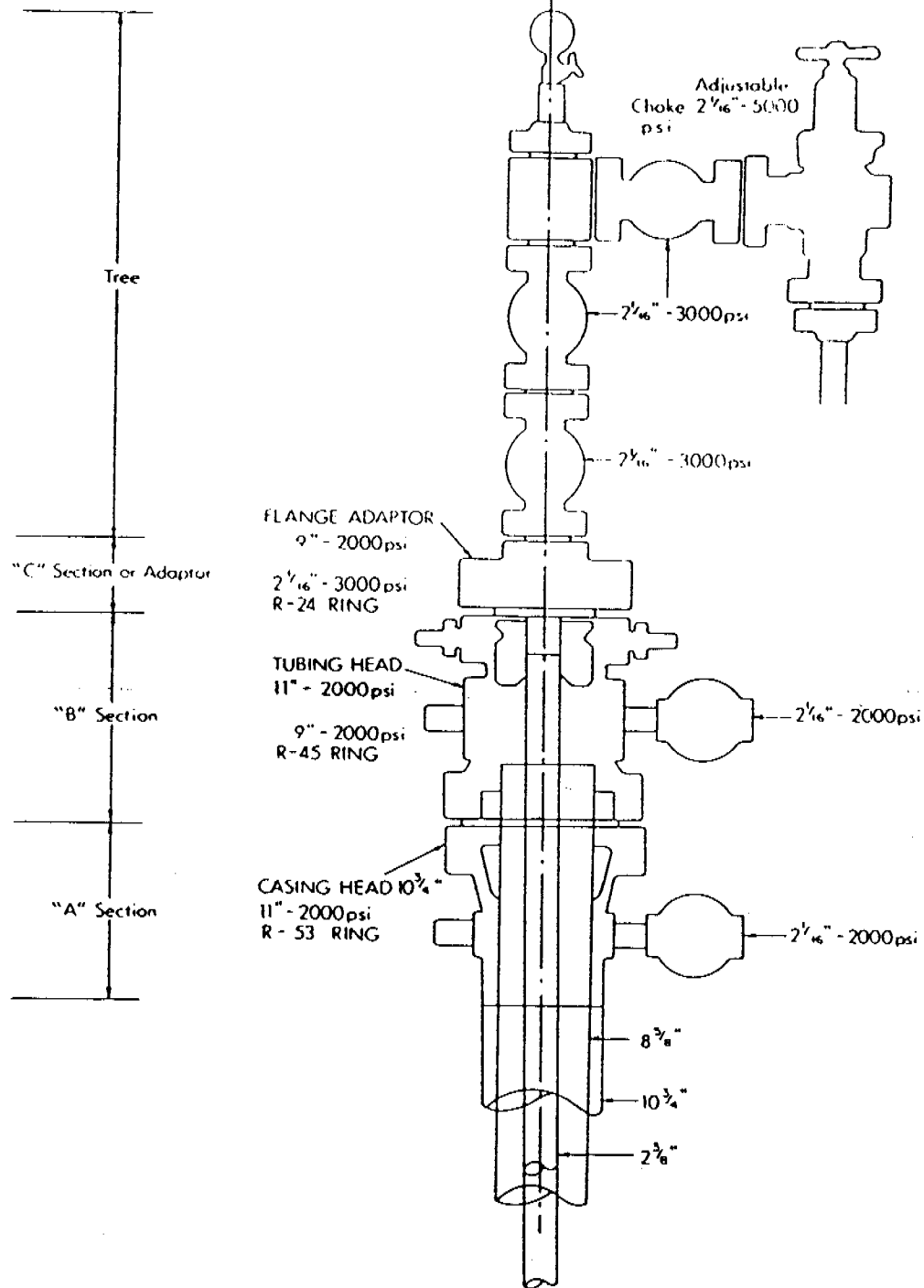
Conclusions: The interval has moderate to good permeability, mainly in the P3-130, P3-190 and P3-230 sands.

2.9 Completion Data:

Refer to Figure 4, Well Head Diagram and Figure 5, Well Completion Summary for further details.

East Mereenie No. 28 was completed barefoot as an oil producing well, over the interval 4706 to 4910 ft. 2-3/8" tubing was run with the packer set at 4660 ft. The Pacoota P3-120 to P3-250 sands being open for production. The rig was released at 1000 hours on the 25th March 1986.

EAST MEREENIE 28



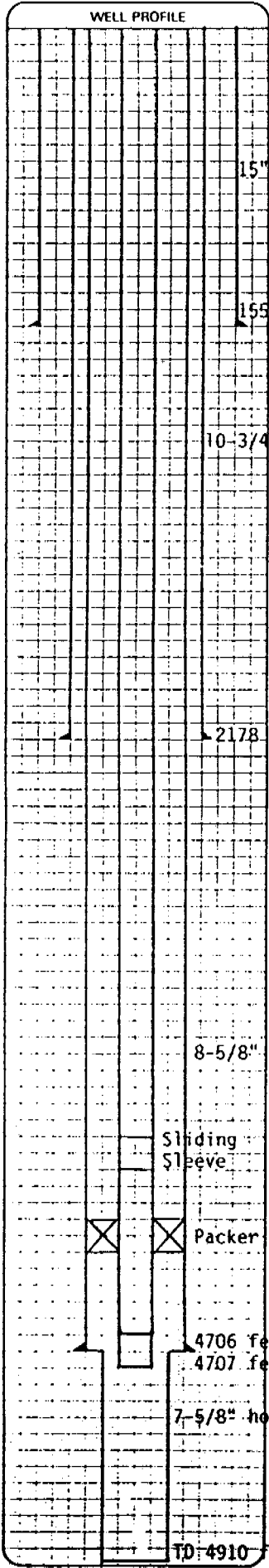
TYPICAL BARBER WELLHEAD
FOR MEREENIE COMPLETIONS

10 3/4" x 8 5/8" x 2 3/8"

Figure 4

MOONIE OIL N.L. WELL COMPLETION SUMMARY

DATE: 26 3 86
DAY MONTH YEAR



WELL NAME EAST MERENIE NO. 28
 WELL LOCATION 24°01'33"S 131°36'58"E
 K.B. ELEVATION 2475 FT. K.B. TO CASING FLGE 17.60 FT. K.B. TO TUBING FLGE 16.18 FT
 Conductor
 CASING 10-3/4" SIZE I.O.D. 40.5 WEIGHT SET AT TOP 2178 FT INTERVAL DEPTH
 CASING 8-5/8" 32 4706 FT.
 PERFS. OPEN HOLE COMPLETION 4706 TO 4910 FT.
 DIAMETER OPEN HOLE 7-5/8"
 TUBING: SIZE 2-3/8" O.D. WEIGHT 4.7 kg/m GRADE J55
 TYPE/CLASS EUE MAKE NKK
 No. OF JOINTS ON LOCATION 150 TALLIED LENGTH 4695.26
 No. OF JOINTS PERMANENTLY IN WELL 149 TALLIED LENGTH 4664.27

FINAL TUBING STRING FROM BOTTOM UPWARD

DESCRIPTION	LENGTH		SET AT TOP	REMARKS
	ft			
BALL CATCHER SUB	0	61	4706.67	GUIBERSON
1JT 2-3/8" TUBING	31	33	4675.34	
X-OVER SUB	0	82	4674.52	
8-5/8" PACKER	9	80	4664.72	GUIBERSON VII HYD
X-OVER SUB	0	78	4663.94	
1 JT 2-3/8" TUBING	31	31	4632.63	
SLIDING SLEEVE	2	40	4630.32	OTIS (XA)
147 JTS 2-3/8" TUBING	4601	63	28.60	
2-3/8" PUP JOINT	10	22	18.38	
TUBING HANGER	0	80	17.58	RTKB
TOTAL STRING LENGTH		4689	70	
K.B. TO TUBING HANGER FLANGE (PLUS)		17	58	
SETTING DEPTH K.B.		4707	28	
			TIME PIPE STARTED	05.00 HRS
			TIME ON BOTTOM	17.00 HRS
			CASING INTERNAL DEPTH BY TUBING	4706 FT

WEIGHT OF TUBING STRING 22,000 WEIGHT ON PACKER 200 WEIGHT ON HANGER 22,000
 WELLHEAD W.P. 3,000 MAKE BARBER FLANGED/SCREWED
 MASTER VALVE TYPE FLANGED MAKE BARTON SIZE 2" 3000#
 CASING VALVES TYPE SCREWED MAKE BARTON SIZE 2" 2000#
 CHOKE FLANGED TYPE ADJ MAKE BARBER

REMARKS (Note Additional Equipment)

COMPLETE IN DETAIL
 • TD, P8TD
 • Casing & Tubing Depths
 • Perforations
 • Packers, Nipples, etc.

R. YOUNG
 AGENT/OPERATOR'S SIGNATURE

FIGURE 5

3. GEOLOGICAL DATA

3. GEOLOGICAL DATA:

3.1 Stratigraphy:

See Stratigraphic Table (Table 4).

3.2 Formation Sampling:

(1) Ditch Cuttings :

Samples were taken at 30 ft intervals from 230 to 4070 ft with closer spaced sampling undertaken adjacent to predicted formation tops. From 4070 to 4910 ft (TD) samples were taken at 10 ft 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 :

No cores were cut in East Mereenie No. 28.

(3) Sidewall Coring :

No sidewall cores were taken.

3.3 Logging and Surveys:

1. Electric Logging :

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

<u>LOG</u>	<u>RUN</u>	<u>INTERVAL</u>	<u>DATE</u>
CDL/CNS/GR	1	2600-4911	21/3/86
DIL/GR	1	4706-4903.5	22/3/86
WEL	1	4715-4910	22/3/86

Prints of all wireline logs are included as Enclosure 4.

TABLE 4
EAST MEREENIE NO. 28 STRATIGRAPHIC TABLE

SYSTEM & SERIES	FORMATION	SUB UNIT	DEPTH (FT)			TRUE THICKNESS	AVERAGE FORMATION DIP	AVERAGE WELL DEVIATION
			KB	TVD	MSL			
MIDDLE TO LATE DEVONIAN	PARKE SILTSTONE							
MIDDLE DEVONIAN TO LATE SILURIAN	MEREENIE SANDSTONE		20	20	+2455	1656	3	0
LATE ORDOVICIAN	CARMICHAEL SANDSTONE		1676	1676	+799	219	3	.25
MIDDLE ORDOVICIAN	STOKES SILTSTONE	UPPER	1895	1895	+580	814	3	.5
		LOWER	2709	2709	-234	218	3	.75
	STAIRWAY SANDSTONE	UPPER	2927	2927	-452	181	3	.75
		MIDDLE	3108	3108	-633	420	3	3
LOWER		3532	3528	-1053	232	3	6	
EARLY ORDOVICIAN	HORN VALLEY SILTSTONE		3773	3760	-1285	224	3	14
EARLY ORDOVICIAN TO LATE CAMBRIAN	PACOOTA SANDSTONE	P1	4010	3984	-1509	352	3	19
		P2	4371	4336	-1861	230	3	11
		P3	4610	4566	-2091	280	3	16
		P4	4902	4846	-2371			16
LATE CAMBRIAN	GOYDER FORMATION		-	-	-	-	-	-
	TOTAL DEPTH		4910	4854				

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.

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

150^o F at 4910 ft; Halliburton

144^o F at 4904 ft; Gearhart

3.4 Formation Dips:

A structural dip of 2 to 3 degrees to the south was prognosed for this well.

Based on formation tops as compared with surrounding wells, the figure of 3 degrees appears to be the true formation dip, in an SSE direction.

3.5 Formation Evaluation:

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

3.6 Relevance to Appraisal Programme:

East Mereenie No. 28 was completed open hole as an oil producing well.

The main reservoir horizon in this area of the field is the P3-130 sand, which flowed 664 BOPD in East Mereenie No. 23 and 770 BOPD in East Mereenie No. 7 on a 1/2" choke. East Mereenie No. 28 flowed 418 BOPD on a 1/2" choke from the P3-120 to P3-250 sand inclusive.

EAST MEREENIE NO. 28 STAIRWAY SANDSTONE SAND DATA SHEET

TABLE 5 (CONTD)

STRATIGRAPHIC CORRELATION		GROSS SAND GR \leq 80 API		NET SAND ϕ CDL \geq 4%				NET SAND ϕ CDL \geq 6%			
SAND NAME	INTERVAL KB - FT	INTERVAL KB - FT	t FT	INTERVAL KB - FT	t FT	% AV ϕ	% MAX ϕ	INTERVAL KB - FT	t FT	% AV ϕ	% MAX ϕ
<u>L. STAIR</u>											
MISC	3532-3538	3532-3558	26								
MISC	3540-3546	3540-3546	6								
MISC	3550-3563	3550-3563	13								
LS-50	3565-3587	3565-3587	22								
MISC	3591-3606	3591-3606	15								
MISC	3618-3620	3618-3620	2								
MISC	3627-3636	3627-3636	9								
LS-150	3681-3690	3681-3690	9								
LS-160	3695-3756	3695-3756	61								
			163								
STAIRWAY SANDSTONE TOTAL			370								

NOTE: NO POROSITY LOG AVAILABLE

EAST MEREENIE NO. 28 PACOOTA SANDSTONE SAND DATA SHEET

TABLE 6

STRATIGRAPHIC CORRELATION		GROSS SAND GR ≤ 80 API		NET SAND δ CDL ≥ 4%				NET SAND δ CDL ≥ 6%			
SAND NAME	INTERVAL KB - FT	INTERVAL KB - FT	t FT	INTERVAL KB - FT	t FT	% AV δ	% MAX δ	INTERVAL KB - FT	t FT	% AV o	% MAX o
P1											
P1-60	4078-4082	4078-4082	4								
P1-80	4090-4102	4090-4102	12								
P1-110	4117-4120	4117-4120	3								
P1-120	4123-4132	4123-4132	9								
P1-140	4155-4160	4155-4160	5								
P1-200	4204-4219	4204-4219	15								
P1-210	4224-4235	4224-4235	11								
P1-240	4243-4263	4243-4263	20								
P1-280	4297-4307	4297-4307	10								
P1-310	4318-4355	4318-4355	37								
P1-350	4360-4371	4360-4371	11								
			137								
P2											
MISC	4409-4411	4409-4411	2								
MISC	4427-4431	4427-4431	4								
MISC	4450-4452	4450-4452	2								
MISC	4460-4466	4460-4466	6								
MISC	4470-4474	4470-4474	4								
MISC	4481-4483	4481-4483	2								
P2-110	4488-4504	4488-4504	16								
MISC	4570-4573	4570-4573	3								
P2-200	4587-4594	4587-4594	7								
MISC	4604-4608	4604-4608	4								
			50								

NOTE: NO POROSITY LOG AVAILABLE

EAST MEREENIE NO. 28 PACOOTA SANDSTONE SAND DATA SHEET

TABLE 6 (CONTD)

STRATIGRAPHIC CORRELATION		GROSS SAND GR ≤ 80 API		NET SAND δ CDL ≥ 4%				NET SAND δ CDL ≥ 6%			
SAND NAME	INTERVAL KB - FT	INTERVAL KB - FT	t FT	INTERVAL KB - FT	t FT	% AV δ	% MAX δ	INTERVAL KB - FT	t FT	% AV °	% MAX °
P3											
P3-10	4610-4670	4610-4670	60								
P3-70	4677-4690	4677-4690	13								
P3-90	4698-4709	4698-4701	3								
P3-90	4698-4709	4704-4706	2								
P3-120	4717-4732	4723-4725	2	4717-4720	3	5	6				
P3-120	4717-4732			4723-4732	9	4	5				
P3-130	4732-4764	4749-4764	15	4732-4764	32	8	13.5	4734-4740	6	8	10
P3-130	4732-4764							4751-4764	13	10.5	13.5
P3-150	4776-4821	4777-4779	2	4777-4780	3	4.5	5				
P3-150	4776-4821	4785-4791	6	4783-4787	4	4.75	5.5				
P3-150	4776-4821	4796-4798	2	4794-4796	2	4.5	4.5				
P3-150	4776-4821	4807-4809	2	4798-4802	4	4.25	4.5				
P3-150	4776-4821			4804-4806	2	4.25	4.5				
P3-150	4776-4821			4814-4817	3	4	4.5				
P3-150	4776-4821			4819-4821	2	4.5	4.5				
P3-190	4829-4851	4829-4835	6	4831-4836	5	7	7.5	4831-4836	5	7	7.5
P3-190	4829-4851	4838-4850	12	4838-4851	13	10.5	12	4838-4851	13	10.5	12
P3-230	4859-4887	4859-4864	5	4859-4887	28	8	12	4859-4865	6	7.5	10
P3-230	4859-4887	4876-4879	3					4868-4870	2	6.75	7
P3-230	4859-4887							4875-4887	12	10.5	12
P3-250	4890-4902			4890-4894	4	5	6.5	4897-4900	3	7.5	9
P3-250	4890-4902			4896-4901	5	7	9				
			133		119				60		
PACOOTA SANDSTONE TOTAL			320		119				60		

The majority of the flow was most likely from the P3-130 sand with a possible small contribution from the P3-190 interval.

The P3-130 sand is still the main reservoir in this section of the field with the P3-190 sand being variable but occasionally producing a small oil flow. Variations in permeability within the P3-190 and P3-230/250 sands is confirmed by the variable drill stem test results in the nearby wells.

Three areas of gas saturation and possible gas production potential were noted in the Stairway Sandstones, these were the US-100, LS-50/60 and the LS-160 sand intervals. None of these sands had a gas show in either East Mereenie No. 5 or 7.

A significant increase in gas occurred while drilling from 3087 ft to 3115 ft with water based mud of 8.4 ppg, corresponding to the lower section of the Upper Stairway US-100 sand interval. A gas bubble was circulated out after a trip at 3115 ft and it can be concluded that the US-100 sand is gas saturated with higher permeability than the surrounding wells.

A gas influx at 3601 ft while air drilling was flowed for 2 hrs through a critical flow prover, with a maximum of 196 MCFD being recorded through a 1/4" orifice plate. This depth corresponds to the Lower Stairway LS-60 sand. The LS-50 sand may have also contributed to the total flow to a lesser extent. This is shown by an increase in background gas in both sands of 200 and 300 units respectively, when they were re-drilled after plugging back to 3494 ft.

At 3710 ft the background gas increased to 350 units corresponding to the upper section of the LS-160 sand. This sand flowed gas at 304 MCFD in East Mereenie No. 17 and approximately 7 MMCFD in East Mereenie No.8.

Prospective horizons in the Pacoota Pl include a section from 4155 ft to 4179 ft (24 ft) which produced high gas readings while drilling, this corresponded to the Pl-140 gross sand (5 ft) and then 19 ft of interbedded sandstones and siltstones to 4179 ft.

The Pl-350 gross sand from 4360 ft to 4371 ft exhibited gas saturation while drilling, and had a maximum porosity of 11% in East Mereenie No. 23.

Formation dips for East Mereenie No. 28 were estimated at approximately 3 degrees SSE.

As the well was flowed to clean for 2-1/2 hours before diverting to the separator and surging was still prevalent fully open and with a 1/2" choke. The clean-up flow rates are not fully representative of the reservoirs flow capacity.

The P3-130 sand continues to be the main production horizon in this area of the field, whilst the reservoirs lower in the P3 sub unit are confirmed as having sporadic permeability.

Small flows of gas from several Upper and Lower Stairway Sandstone intervals indicate a small improvement in the permeability of the Stairway Sandstone in this area. Permeability remains poor and sporadic in this interval.