



Marlin 1 Well
Geochem Data Folder.

Part reports of TOC,
Whole Oil GC & Gas data
for Marlin 1, & EOM
data for Barker 1,
Cobia 1, Fortescue 3,
Halibut 1, Kingfish B10,
Mackerel 3, Marlin (C-E654),
& Barracenta A3, A6 & A7
wells + gas data.

MARLIN A. I.

Mr. E. J. Condon

of information available

E. J. Condon

BASIC

Circular sent to Refiners by Esso.
referred to in Financial Review
29/8/67.

Attached for your information is a copy of an assay performed on a crude oil from a Marlin well. This assay may not necessarily be representative of the crude which will be produced from this field and other indicated discoveries in the area. Nevertheless, we feel that it is indicative of potential qualities and will be of interest to you in your planning considerations.

As information is available from other wells we will make this available to you. As you can understand from our press releases, there are a number of questions still to be resolved with respect to the volumes of production from the Gippsland area. Nevertheless you should be aware that these volumes might be significant although we are unable to estimate total volumes at this time due to the limited drilling to date. With the present development schedule we anticipate production to commence in 1969.

August 18, 1967

MARLIN ~~XXI~~

FIELD: Well EGS-4 Offshore	REPORT DATE: 5-1-66
State: Victoria Country: Australia	DATE DISTILLED: 4-13-66
REPRESENTATIVE OF: Crude oil produced during initial testing of Well No. 4 in Esso Gippsland Shelf Concession No. 38, located in upper part of Bass Strait 30 miles offshore from Lake Entrance and about 180 miles S.E. of Melbourne. Seven gallons of sample air freighted to Baytown April 4, 1966, on Qantas airway bill 081-1162661 and assayed for Esso Std. Eastern per their letter 62-4555 of March 17, 1966.	DATE SAMPLED: 4-6-66 *
	ASSAY NO.: 999
	FILE NO.: SL.37C-IN.66
	CARDS:
	COST CENTER: 3962-100
	REPORT BY: <i>H. M. Eberly</i> J. F. HICKERSON

DATA ON CRUDE			DATA ON PRODUCTS			
		VAPOR TEMP., °F	NAPHTHAS φ			
GRAVITY °API:	51.5		C5-175	C5-250	C5-300	C5-375
SULFUR, %, DIETERT	0.063		4.1-13.4	4.1-26.5	4.1-35.4	4.1-49.1
FLASH, °F, P.M.		RANGE OF CUT, LV%	9.3	22.4	31.3	45.0
S.U. VISCOSITY AT 100°F		YIELD, LV%	81.3	67.0	62.7	59.0
80°F		GRAVITY, °API	70.3	65.2	60.8	50.9
60°F		RESEARCH OCTANE NO.	83.6	78.6	74.5	66.4
40°F		+1.5 CC TEL	89.3	84.3	80.3	73.0
B.S. & W., %		+3.0 CC TEL				
WATER BY DISTILLATION, %		MOTOR OCTANE NO.	82.0	77.6	73.6	66.0
N.O. VAPOR PRESSURE, LB.	6.6	+1.5 CC TEL	85.5	81.9	78.5	72.0
POUR POINT, °F		+3.0 CC TEL	11.9	6.4	4.8	3.7
SALTY AS NACL, PTE		REID VAPOR PRESSURE, LB.	0.061	0.030	0.0249	0.0231
NEUTRALIZATION VALUE, D664		SULFUR, %, LAMP	0.048	—	—	0.032
HYDROCARBON ANAL., LV%:		MERCAPTAN NO., MG/100 CC.	94.0	8.0	5.0	3.5
C2 & LIGHTER	0.1	% AT 158°F. + LOSS		81.0	46.0	26.5
C3	1.0	212°			87.5	57.0
IC4	0.8	257°			99.0	73.5
NC4	2.2	284°				83.0
IC5	1.8	302°				
NC5	2.2	F.B.P., °F	180	257	290	361
MERCAPTAN NO., MG/100 CC.	0.51	LOSS, %	1.5	1.0	1.0	1.0
COLOR, Visual	Dark Brown					
COLOR, ROBINSON						

* Date arrived in Baytown, Texas
 φ Additional Naphtha Data on Pages 3 and 4

VAPOR TEMPERATURE, °F	HEAVY NAPHTHAS			KEROSENE & TURBO FUELS		
	250-375	175-300	350-375	375-530	300-500	375-460
RANGE OF CUT, LV%	26.5-49.1	13.4-35.4	44.9-49.1	49.1-79.0	35.4-72.0	49.1-69.0
YIELD, LV%	22.6	22.0	4.2	29.9	37.4	19.9
MIDPOINT OF CUT, °F	314	239	—	—	—	—
GRAVITY, °API	52.1	56.8	51.1	44.7	47.4	47.5
RESEARCH OCTANE NO., CALC.	36.7	56.8	—	—	—	—
SULFUR, % LAMP	0.019	0.0099	—	0.052	0.044	—
ANILINE POINT, °F	122	115	—	161	148	—
MERCAPTAN NO., MG/100 CC.	—	—	—	0.11	0.096	—
VISCOSITY, SAYB. THERMO	—	—	235	450	310	365
VISCOSITY, KINEMATIC, @-40°F., CS	—	—	—	7.023(0)	6.849 (-30)	—
FREEZING POINT, °F	—	—	-66	-10	-35	-23
RING NUMBER	—	—	—	77	76	—
I.P.T. SMOKE POINT, MM.	—	—	24	22	22	23
COLOR, SAYBOLT	—	—	—	+20	+22	—
AROMATICS, LV%, M.S.	20.3	13.0	—	—	—	—
NAPHTHENES, LV%, M.S.	26.7	43.2	—	—	—	—
PARAFFINS, LV%, M.S.	53.0	43.8	—	—	—	—
AROMATICS, LV%, F.I.A.	—	—	—	14.0	15.5	—
LUMINOMETER NO.	—	—	—	57	—	—
REFRACTIVE INDEX, ND 20°C	1.43072	1.41823	—	—	—	—
VISCOSITY, KINEMATIC @ 100°F., CS.	—	—	—	—	—	—

:lhn:nk

VAPOR TEMPERATURE, °F	MIDDLE DISTILLATES			GAS OILS		
	430-530	530-650	650-850	850-1050	1050-	
RANGE OF CUT, LV%	59.5-79.0	79.0-93.7	93.7-99.0	99.0-99.5		
YIELD, LV%	19.5	14.7	5.3	0.5		
GRAVITY, °API	43.4	42.7	37.8	11.2		
REFRACTIVE INDEX, ND67°C.	1.4315	1.4340	1.4445	1.5410		
SULFUR, %, DIETERT	0.060	0.118	0.230	1.39		
ANILINE POINT, °F	166	193	203	142		
DIESEL INDEX	72	82	77	16		
POUR POINT, °F	5	45	80	115		
CONRADSON CARBON, %	—	0.004	0.01	1.0		
NITROGEN, WT. %	—	0.003	0.060	0.100		
AROMATIC RINGS, CALC.	5.4	3.4	1.4	23.4		
NAPHTHENE RINGS, CALC.	18.8	12.6	12.8	61.6		
WET ASH, PPM NI	—	—	—	—	—	
V	—	—	—	—	—	
FE	—	—	—	—	—	
S.U. VISCOSITY AT 100°F.	—	—	—	—	—	
130°	—	—	41.8	—	—	
150°	—	—	—	573	—	
175°	—	—	—	—	—	
210°	—	—	33.6	109.3	—	
NEUTRALIZATION VALUE D974	—	—	0.33	—	—	

VAPOR TEMPERATURE, °F	WAXY LUBE OIL	DEWAXED LUBE	BOTTOMS		CORRELATED DATA	
	790-1000		BEYOND 1050	BEYOND	PHENOL TREATING CHARACTERISTICS ON NARROW LUBE CUT DEWAXED	
RANGE OF CUT, LV%			99.5-100.0			
YIELD, LV%		—	0.5			
GRAVITY, °API			6.6			
SULFUR, %, DIETERT		—	1.61			
ANILINE POINT, °F			—	—	% TREAT	V.I.
DIESEL INDEX			—	—	0	
S.U. VISCOSITY AT 100°F	—	—	—	—	100	
130°F	—	—	—	—	200	
150°F	—	—	—	—	300	
175°F	—	—	—	—	V.G.C.	
210°	—	—	—	—		
VISCOSITY AT 122°F	—	—				
210°	—	—				
275°	—	—	110			
300°	—	—				
FLASH, °F, C.O.C.						
POUR POINT, °F			—	—		
VISCOSITY INDEX			—	—		
NEUTRALIZATION VALUE D664		—	1.44			
WAX, S.B.A., %		—	—	—		
CONRADSON CARBON, %	—	—	19.4			
MOD. INSOL. IN 86° NAPH.	—	—	2.40; 2.75	—		
NITROGEN, WT. %	—	—	0.24			
WET ASH, PPM NI	—	—	—	—		
V	—	—	—	—		
FE	—	—	—	—		
OLIENSIS	—	—	—	—		
SOFTENING POINT, °F	—	—	—	—		
PENETRATION AT 77°F	—	—	—	—		
PENETRATION AT 39.2 °F	—	—	—	—		
DUCTILITY AT 77°F	—	—	—	—		
SOLUBLE IN CCl4	—	—	—	—		

•D974

NAPHTHA ANALYSIS

Vapor Temp. °F	C ₅ - 160	160-211	Vapor Temp. °F	
Range, Liq. Vol. %	4.1-11.9	11.9-19.2		
Yield, Liq. Vol. %	7.8	7.3		
GPC, LIQ. VOL. %			GPC, Liq. Vol. %	
Propane	0.4		Normal Octane	
Isobutane	0.5		Ethylcyclohexane	
n-Butane	3.7	0.2	C ₉ Cyclopentanes	
Isopentane	16.3	0.5	C ₉ Iso-Paraffins	
n-Pentane	25.2	0.4	C ₈ Aromatics	
2,2-Dimethylbutane	0.8		C ₉ Aromatics	
Cyclopentane	2.0	0.1	Normal Nonane	
2,3-Dimethylbutane	2.8	0.2	C ₉ Cyclohexanes	
2-Methylpentane	15.5	1.6	C ₁₀ Cyclohexanes	
3-Methylpentane	7.6	1.6	C ₁₀ Cycloparaffins	
n-Hexane	17.7	12.8	C ₁₀ Paraffins	
4-Methylcyclopentane	5.2	8.0		
1,2-Dimethylpentane		0.6		
2,4-Dimethylpentane		1.3		
Benzene	1.2	1.3		
Cyclohexane	1.1	12.3		
3,3-Dimethylpentane		0.3		
1,1-Dimethylcyclopentane		1.3		
2-Methylhexane +		7.0		
1-trans-3-Dimethylcyclopentane		2.4		
3-Methylhexane		6.3		
1-cis-3-Dimethylcyclopentane		2.8		
1-trans-2-Dimethylcyclopentane		2.6		
3-Ethylpentane		0.4		
n-Heptane		15.4		
1-cis-2-Dimethylcyclopentane		0.1		
Methylcyclohexane		13.6		
1,2,3-Trimethylcyclopentane		0.2	2,2,3-Trimethylbutane	0.2
1,2,4-Trimethylcyclopentane		0.4	2,3-Dimethylpentane	2.3
1,2,5-Trimethylcyclopentane		0.1	2,2,3-Trimethylpentane	0.1
2,4-Dimethylhexane		0.1		
1-trans-2-cis-4-Trimethylcyclopentane		0.1		
1-trans-2-cis-3-Trimethylcyclopentane		0.1		
3,3-Dimethylhexane				
Toluene		3.0		
2,3,4-Trimethylpentane				
1,1,2-Trimethylcyclopentane				
2,3-Dimethylhexane				
2-Methylheptane + 4-Methylpentane		0.1		
3-Methylheptane + 3-Ethylpentane		0.1		
1-cis-3-Dimethylcyclohexane + 1,1-Dimethylcyclohexane + 1-trans-4-Dimethylcyclohexane		0.1		
Other C ₈ Cyclopentanes				
1,trans-2-Dimethylcyclohexane				
1-cis-4-Dimethylcyclohexane + 1-trans-3-Dimethylcyclohexane				

FIELD: Well EGS-4 Offshore, Australia

ASSAY NO.: 999

FILE NO.: SL.37C-IN.66

NAPHTHA ANALYSIS

Vapor Temp., °F. 211-300
 Range, Liq. Vol. % 19.2-35.4
 Yield, Liq. Vol. % 16.2
 GPC, Liq. Vol. %:

PARAFFINS

Nc ₆	0.1
2MH	1.1
23DMP	0.3
3MH	1.1
3EP	0.1
Nc ₇	8.5
22DMH	0.1
25DMH	0.6
24DMH	0.6
33DMH	0.4
23DMH	0.5
2M Hep.	4.2
4M Hep.	1.2
34DMH	0.2
3M Hep.)	2.9
3EH)	
Nc ₈	14.3
244TMH	0.1
26DM Hep.)	1.5
44DM Hep.)	
25DM Hep.)	0.9
35DM Hep.)	
33DM Hep.	0.2
4E Hep.	0.7
4M Oct.	0.2
2M Oct.)	2.0
3E Hep.)	
3M Oct.	1.3
NC ₉	4.9

5 NAPHTHENES

MCP	0.1
11DMCP	0.1
1C3DMCP	0.3
1T3DMCP	0.3
1T2DMCP	0.3
E CP	0.8
113TMCP	0.4
1T2 C4TMCP	0.7
1T2 C3TMCP	0.5
Others	0.7

6 NAPHTHENES

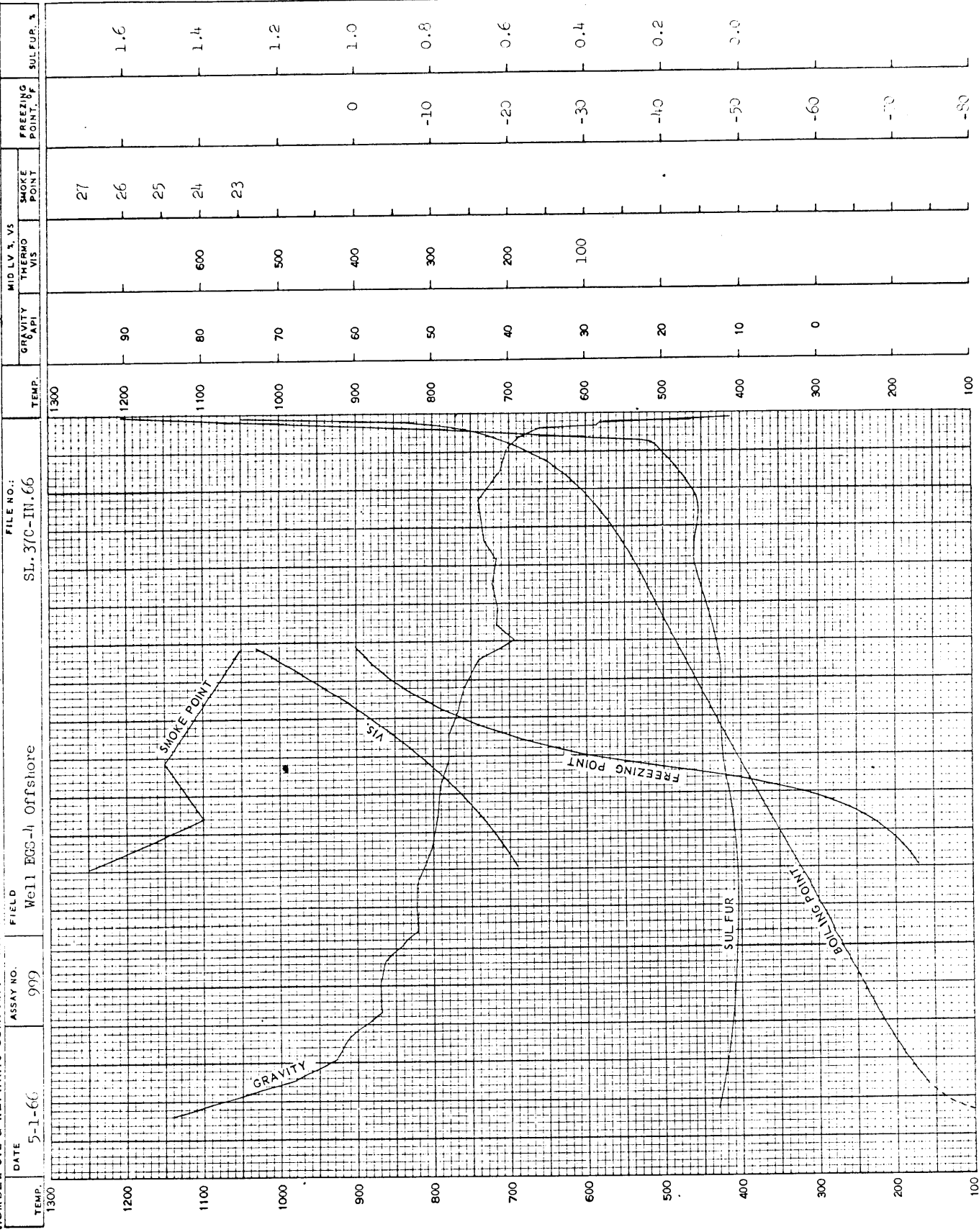
CH	0.3
MCH	16.4
1C3DMCH)	
1T4DMCH)	6.4
11DMCH)	
1T2DMCH	1.7
ECH	2.9
114 TMCH	0.2
1C3 T5 TMCH)	
1T2 T4 TMCH)	0.5
Unidentified	2.2
5 Naph & 6 Naph.	

AROMATICS

Toluene	6.9
Ethylbenzene	0.9
Paraxylene)	
Metaxylene)	7.9
Orthoxylene	1.4
C ₉ Aromatics	0.1

GME:mk

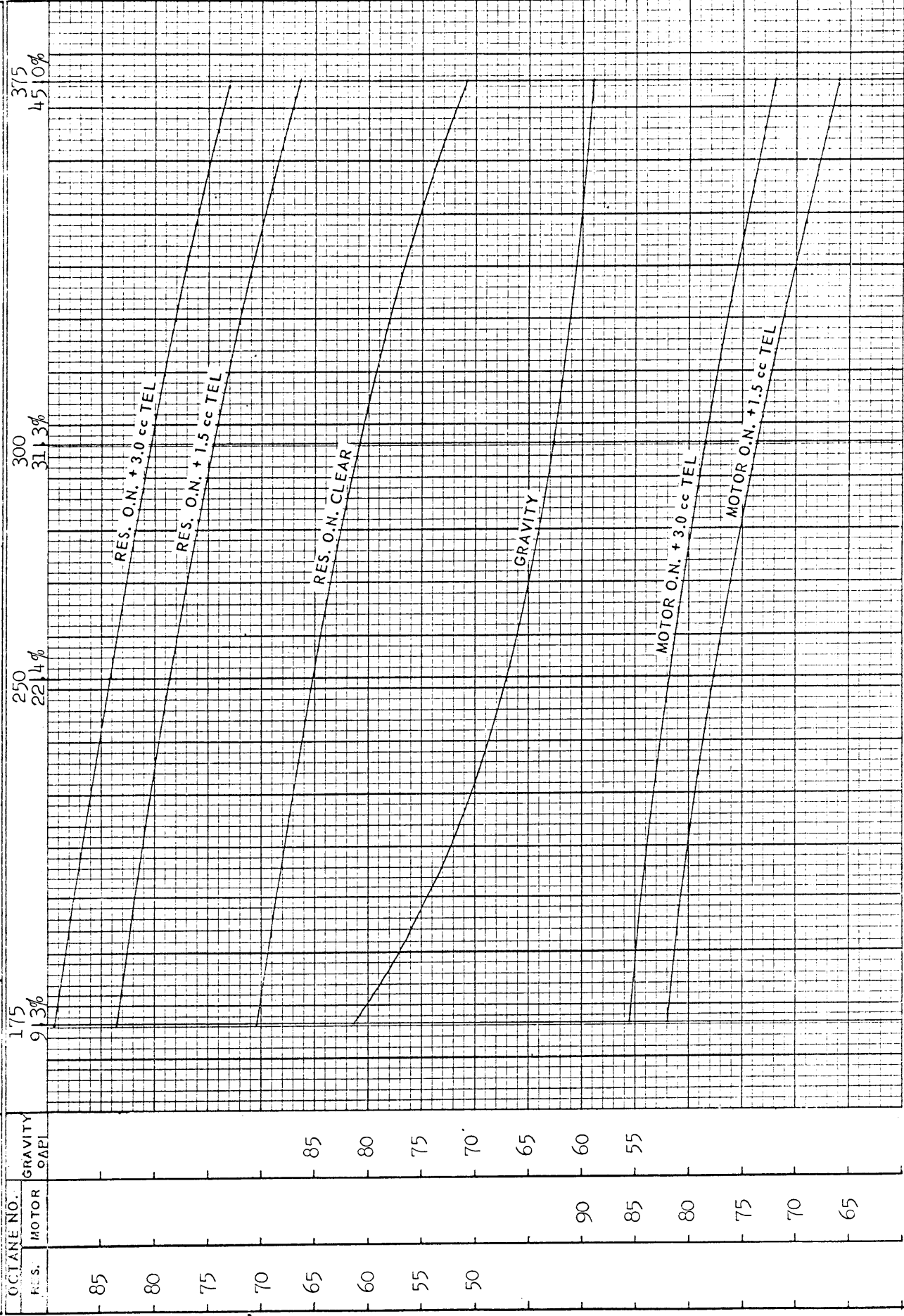
5-1-66



LV % DISTILLED OR MID LV

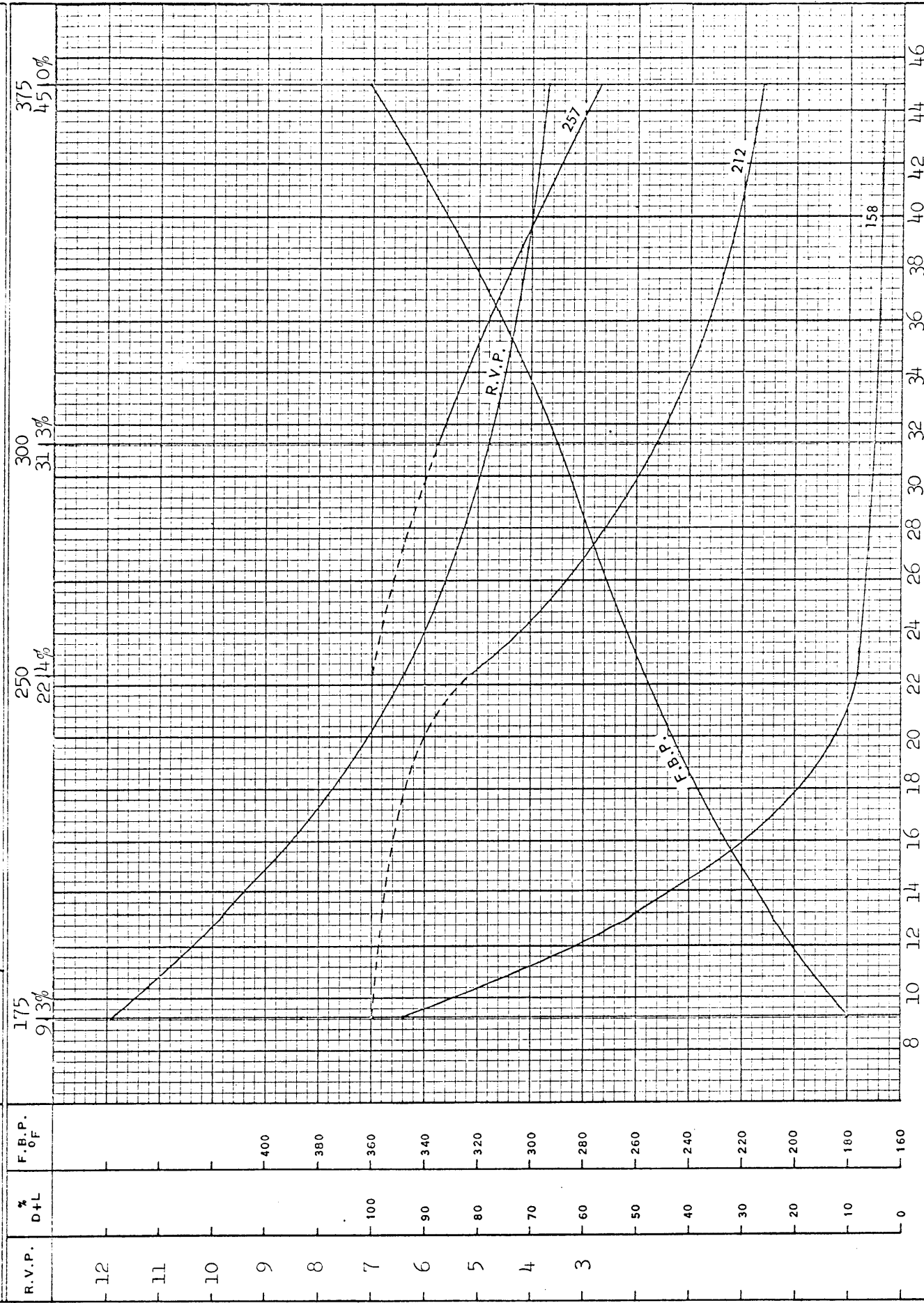
NUMBLE OIL & REFINING COMPANY REFIN. Y. L. ORATORY BAYTOWN, TEXAS IN RME. ATE ASSAY C5 + NAPHTHA CHART 2

DATE	5-1-66	ASSAY NO.	999	FIELD	Well EGS-4 Offshore	FILE NO.:	SL. 37C-IN.66
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HUMBLE OIL & REFINING COMPANY REFINERY LABORATORY BAYTOWN, TEXAS INTERMEDIATE ASSAY C₅+ NAPHTHA CHART 3

DATE: 5-1-66 ASSAY NO.: 999 FIELD: Well #3-4 Offshore FILE NO.: SL. 37C-IN.66

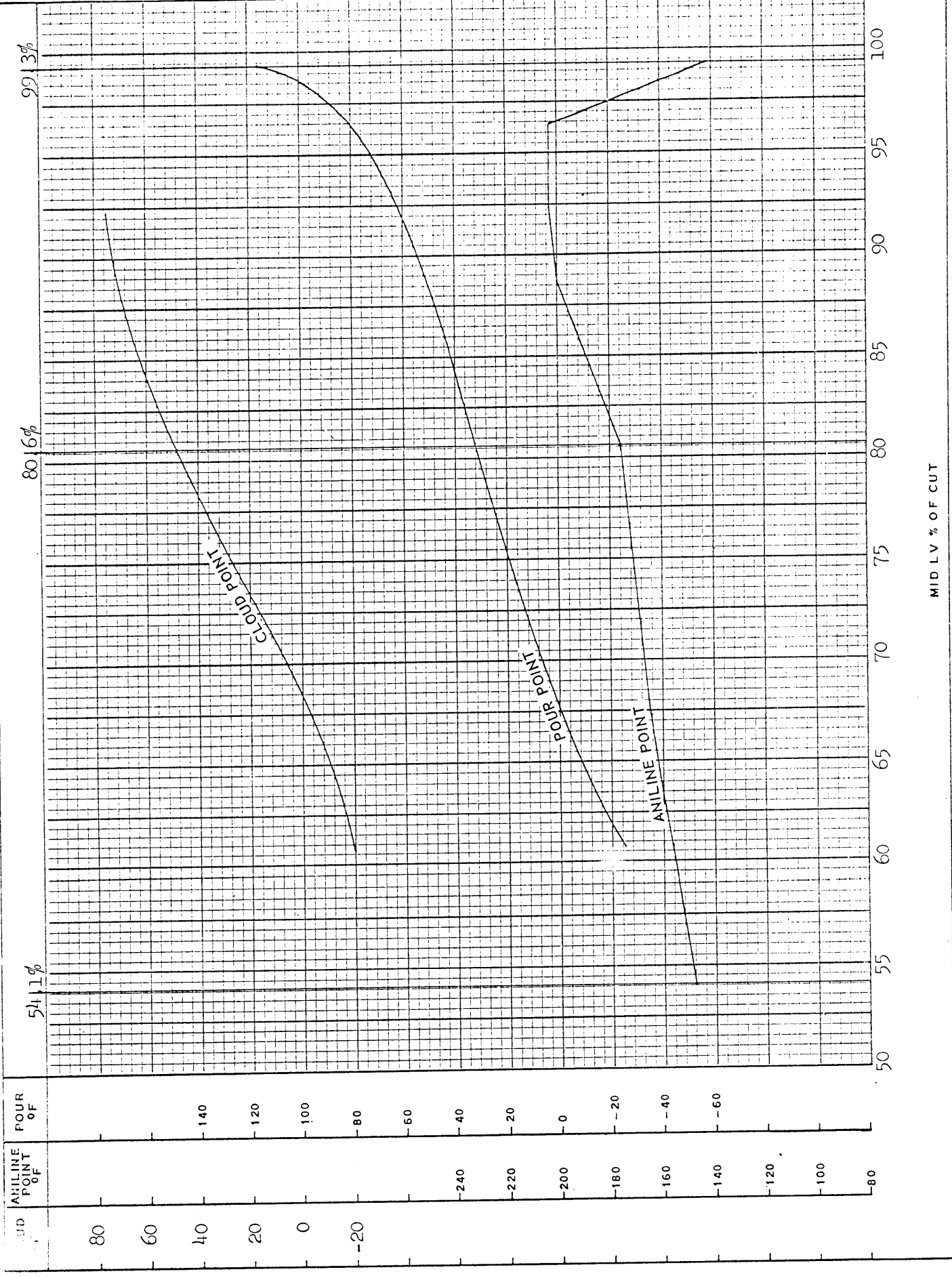


R.V.P. F.B.P. % D+L

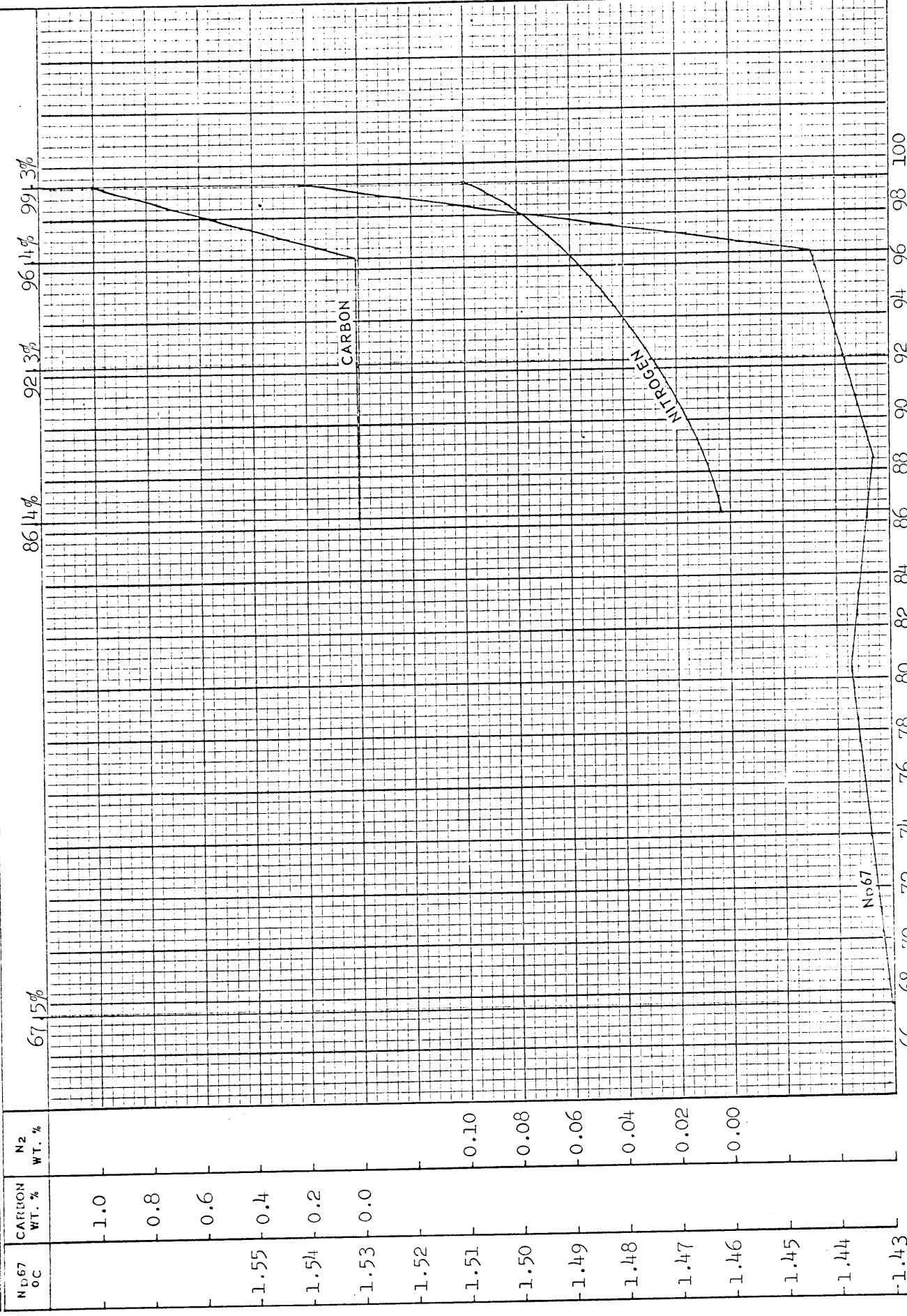
257 212 158

C₅+ YIELD ON CRUDE, LV %

DATE: 5-1-66
 ASSAY NO.: 999
 FIELD: Well EGS-4 Offshore
 FILE NO.: SL. 37C-IN.66



DATE 5-1-66 ASSAY NO. 999 FIELD Well EGS-4 Offshore FILE NO.: SL. 37C-IN.66



MID LV % OF C.I.T.

ANALYSES OF SAMPLES

FROM GIPPSLAND BASIN WELLS

W496

MORWONG #1, GROPER #2, BARRACOUTA #1

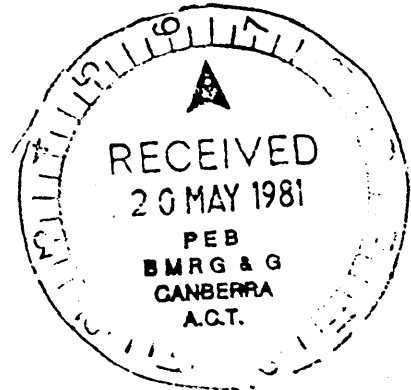
MARLIN A-24, COBIA #1, MARLIN #1,

MARLIN #4 FOR SOLUBLE HYDROCARBONS

AND TOTAL ORGANIC CARBON



*In Gippsland Basin
Reports under
Houston Oil & Minerals
Charts in reports*



BUREAU OF MINERAL RESOURCES

**CORE AND CUTTINGS
LABORATORY**

Available for public inspection

and/or copying after 11 August 1981



HOUSTON OIL & MINERALS AUSTRALIA, INC.
EXPLORATION DIVISION

W.O.M.

GIPPSLAND AUSTRALIA WELLS

WELL: MARLIN #1
LOCATION: AUSTRALIA
DEPTH: 3490' TO: 8457'

DEPTH	SOLUBLE HYDROCARBONS	TOTAL ORGANIC CARBON
3490 - 3670	0 ppm	0.77 %
4100 - 4200	0 "	0.68 "
(core) 4570 - 4571	0 "	0.51 "
" 4649 - 4650	2940 "	13.52 "
" 4894 - 4896	330 "	2.08 "
" 5114 -	80 "	0.50 "
5500 - 5600	800 "	6.76 "
6000 - 6100	1,880 "	6.76 "
6540 - 6600	420 "	6.76 "
6850 - 6880	275 "	4.88 "
(core) 7249 - 7254	1800 "	5.64 "
" 7501	3410 "	13.52 "
" 7506 - 7508	4000+ "	6.76 "
8030 - 8110	3060 "	6.76 "
(core) 8457	2420 "	5.60 "

OIL ANALYSIS

B. Powell. (85/110)



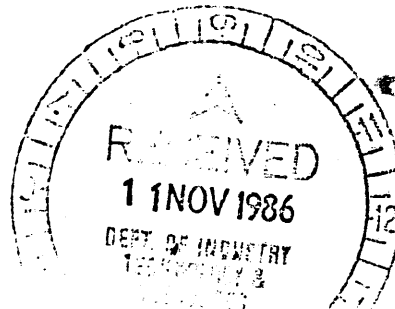
Department of Resources and Energy

**Bureau of Mineral Resources, Geology & Geophysics
Division of Continental Geology**

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In reply please quote: **85/110.**

5 November 1986



Mr B. Thompson
Manager Petroleum Resources
Department of Industry, Technology
and Resources
Petroleum Division
151 Flinders Street
MELBOURNE VIC 3001

PETROLEUM DIVISION

MARLIN-1

11 NOV 1986

Dear Mr Thompson

... Further to your letter of the 26th August, please find enclosed the relevant information on the composition of the Gippsland oils that BMR has analysed. Most data is summarised in the Table, however, compositional percentages of individual components can be found in the separate data sheets.

If it is possible, I would appreciate a copy of the compiled data on the Gippsland oils when the work has finished.

Yours sincerely

Original 30-1

T.G. Powell
Senior Principal Research Scientist

MARLIN-1
MAR EGS #4

ID= 132

RECORD= 36

FILE=ALK1.OIL1

STD WT= 10.3 SAMP WT= 21.8 VOL ADDED= 218 STD AREA= 43

N-ALKANE % CONCENTRATION DEF AREA

10	5.51		230
11	3.98		166
12	3.47	1.00	145
13	3.35	1.02	140
14	3.11	1.01	130
15	2.90	1.01	121
16	2.56	1.00	107
17	2.20	1.00	92
18	1.82	.98	76
19	1.37	.97	57
20	1.03	.98	43
21	.69	.99	29
22	.43	1.03	18
23	.26	1.08	11
24	.12	1.21	5
25	.10	1.38	4
26	.04	1.33	2
27	.02	1.10	1
28	.02	.94	1
29	.02	1.00	1
30	.02	1.00	1
31	.02		1
32	.02		1
PRISTANE	1.29		54
PHYTANE	.12		5

TOTAL N-ALKANES=33.09

TOTAL WAX CONTENT= 1.09

% PRISTANE ANDPHYTANE= 1.41

PR/PH=10.80

PR/NC17= 0.59

PH/NC18= 0.07

MARLIN-1
MAR EQS 4

SAMPLE I.D. CODE NO. 132

COMPOUND	AREA	% AREA
ISO-PENTANE	18637	4.85
N-PENTANE	38374	7.38
2,2-DIMETHYLBUTANE	1468	0.38
CYCLOPENTANE	2938	0.76
2,3-DIMETHYLBUTANE	4783	1.24
2-METHYLPENTANE	28714	7.47
3-METHYLPENTANE	15992	4.16
N-HEXANE	49968	13.00
METHYLCYCLOPENTANE	27510	7.16
BENZENE	2529	0.66
CYCLOHEXANE	31313	8.28
2-METHYLHEXANE	11219	2.92
1,1-DIMETHYLCYCLOPENTANE	7014	1.83
3-METHYLHEXANE	19767	2.00
1,3-DIMETHYLCYCLOPENTANE	6452	1.68
1,3-DIMETHYLCYCLOPENTANE	5410	1.41
1,2-DIMETHYLCYCLOPENTANE	10299	2.68
4-HEPTANE	35452	9.22
1,2-DIMETHYLCYCLOPENTANE	1845	0.27
METHYLCYCLOHEXANE	74118	19.29
2,5-DIMETHYLHEXANE	3414	0.89
2,4-DIMETHYLHEXANE	1794	0.36
2,2,3-TRIMETHYLPENTANE	1490	0.39
TOLUENE	3541	0.92

TOTAL AREA = 384322

PARAFFIN INDEX I = 0.99

PARAFFIN INDEX II = 18.31

% HEPTANE IN Σ C7 COMPOUNDS = 21.92

% BRANCHED C7 IN Σ C7 COMPOUNDS = 13.59

% CYCLIC C7 IN Σ C7 COMPOUNDS = 64.49

LIGHT TO HEAVY RATIO = 0.65

TABLE 1 COMPOSITION OF GIPPSLAND OIL ANALYSED BY EMR

Well	Test	Depth m	WHOLE OIL		COMPOSITION OF > 210°C Fraction												COMPOSITION OF C5-C7 HYDROCARBONS						EMR No.
			API	WAX	> 210°C		Branched/ cyclic	n-alkane	Arom	ONS	Asph	pr/ph	pr/n-C17	ph/n-C18	Parafin Index II	Light/ heavy ^b		C7 composition-%					
					%	%										I	noraml		branched	cyclic			
Basker 1	FIT	3090	40.8	20.5	24.0	48.5	20.6	1.8	0.0	7.4	0.43	0.06	0.76	14.4	1.3	19.4	9.7	70.9	145				
Cobia 1	FIT 2	2406.5	43.1	7.4	36.0	26.7	19.7	4.4	0.0	6.8	0.63	0.10	0.91	15.0	0.9	17.7	14.3	68.0	147				
Fortescue 3	RFT 1	2440	31.0	7.6	2.0	18.1	23.6	4.5	0.0	6.3	1.18	0.21	0.80	15.1	0.3	17.2	8.6	74.2	152				
Halibut 1	PT	2346.9	42.4	8.8	35.0	29.4	14.6	6.4	0.2	7.3	0.67	0.09	0.99	14.3	1.2	17.9	15.4	66.7	67				
Kingfish B10	PT	2286	45.9	8.4	43.0	32.4	11.9	9.0	0.1	7.2	0.67	0.09	1.05	17.9	0.5	20.5	13.4	66.1	115				
Mackerel 3	FIT	2394.2	47.0	11.0	40.0	38.9	9.1	2.6	0.3	7.6	0.42	0.06	0.89	16.1	1.1	19.9	12.5	67.6	119				
Marlin EGS 4	ZONE1	1554.4	49.8	1.1	53.0	35.7	5.4	5.4	0.1	10.8	0.59	0.07	0.99	18.3	0.9	21.9	13.6	64.5	132				
Barracouta A3, A6, A7	1:1:1	7/1/1972	-	-	-	-	-	-	-	2.9	0.25	0.09	0.94	13.6	0.6	16.1	13.3	70.6	106				

a Wax% ≡ weight% of n-alkane > C₂₂

b light/heavy ≡ Sum of C5+C6 hydrocarbons/sum of C7 hydrocarbons.

Geochem

26 JUN 1987

MARLIN 1
MLN-1

Gippsland Basin

33 14 s. lat.

148 13 e. long.

#	M	FT	ZI-C	ZO-C	ZN	ZII	S1	S2	TMAX	PI	HI	GP
1	250	820	75.8	0.20	bd1	0.20	bd1	bd1	ndm	---	---	---
2	305	1000	79.4	0.57	bd1	0.17	bd1	bd1	ndm	---	---	---
3	351	1150	80.3	0.66	bd1	0.13	bd1	bd1	ndm	---	---	---
4	378	1240	81.4	0.63	bd1	0.14	bd1	bd1	ndm	---	---	---
5	415	1360	86.4	0.33	bd1	0.09	bd1	bd1	ndm	---	---	---
6	442	1450	86.4	0.13	bd1	0.00	bd1	bd1	ndm	---	---	---
7	470	1540	82.5	0.40	bd1	0.15	bd1	0.3	471	---	94	0.4
8	524	1720	86.1	0.57	bd1	0.08	bd1	bd1	ndm	---	---	---
9	561	1840	79.0	0.44	bd1	0.16	bd1	bd1	ndm	---	---	---
10	598	1960	78.0	0.27	bd1	0.17	0.08	bd1	ndm	---	---	0.2
11	634	2080	77.4	0.49	bd1	0.19	0.03	0.3	472	0.22	60	0.4
12	671	2200	77.1	0.46	bd1	0.20	0.06	0.3	467	0.18	58	0.3
13	716	2350	67.2	0.66	bd1	0.33	0.10	0.2	465	0.30	36	0.3
14	744	2440	71.8	0.93	bd1	0.24	0.09	0.3	476	0.21	36	0.4
15	771	2530	68.5	0.63	bd1	0.29	0.11	0.3	431	0.24	51	0.5
16	790	2590	65.8	0.67	bd1	0.29	0.07	0.3	466	0.17	50	0.4
17	826	2710	70.9	0.40	bd1	0.25	0.08	0.2	465	0.25	57	0.3
18	881	2890	66.5	0.39	bd1	0.27	0.05	bd1	ndm	---	---	0.1
19	927	3040	60.5	0.59	bd1	0.33	bd1	bd1	ndm	---	---	---
20	954	3130	64.8	0.50	bd1	0.39	0.09	bd1	ndm	---	---	0.2
21	982	3220	65.2	0.38	bd1	0.27	bd1	bd1	ndm	---	---	---
22	1018	3340	66.1	0.29	bd1	0.28	0.07	0.3	470	0.17	118	0.4
23	1055	3460	72.4	bd1	bd1	0.20	0.05	bd1	ndm	---	---	0.1
24	1082	3550	70.5	0.18	bd1	0.23	0.06	bd1	ndm	---	---	0.2
25	1110	3640	66.5	0.32	bd1	0.29	0.08	0.5	430	0.13	159	0.6
26	1137	3730	57.3	0.34	bd1	0.34	0.10	0.2	464	0.29	69	0.3
27	1174	3850	55.6	0.22	bd1	0.39	0.09	bd1	ndm	---	---	0.2
28	1220	4000	47.7	0.65	bd1	0.45	bd1	bd1	ndm	---	---	---
29	1610	5280	3.8	39.84	0.54	3.39	3.51	149.0	466	0.02	374	152.5
30	1601	5250	12.8	12.66	0.15	1.04	0.84	34.5	466	0.02	272	35.3
31	1591	5220	1.9	53.97	0.73	3.89	3.08	153.0	466	0.02	233	156.1
32	1579	5180	22.5	11.10	0.12	0.86	0.43	21.7	465	0.02	195	22.1
33	1564	5130	15.1	11.29	0.15	1.01	0.67	24.7	465	0.03	219	25.4
34	1543	5060	19.9	19.11	0.25	1.62	0.79	35.7	466	0.02	187	36.5
35	1494	4900	23.4	22.59	0.29	1.90	1.53	52.4	464	0.03	232	53.9
36	1473	4830	26.0	10.08	0.11	0.98	1.34	24.8	465	0.05	246	26.1
37	1451	4760	10.6	29.23	0.23	2.24	4.31	92.6	464	0.04	317	96.9
38	1433	4700	24.8	0.91	bd1	0.34	bd1	0.6	403	---	67	0.7
39	1402	4600	18.7	0.34	bd1	0.26	bd1	bd1	ndm	---	---	---
40	1387	4550	3.9	0.29	bd1	bd1	bd1	bd1	ndm	---	---	---
41	1351	4430	49.5	0.42	bd1	0.36	bd1	bd1	ndm	---	---	---
42	1323	4340	42.6	0.26	bd1	0.41	bd1	bd1	ndm	---	---	---
43	1237	4220	46.8	0.54	bd1	0.42	bd1	bd1	ndm	---	---	---
44	1247	4090	48.1	0.52	bd1	0.42	bd1	bd1	ndm	---	---	---
45	1619	5310	4.4	55.07	0.31	0.41	3.37	175.0	467	0.02	313	178.4
46	1634	5360	12.6	45.29	0.67	2.92	1.02	50.6	466	0.02	112	51.6
47	1659	5440	27.9	12.05	0.19	1.13	0.29	14.6	466	0.02	121	14.9
48	1683	5520	27.9	13.85	0.23	1.27	0.49	21.5	466	0.02	155	22.0
49	1713	5620	8.2	33.61	0.43	2.36	1.71	38.2	470	0.02	262	89.9
50	1738	5700	7.9	39.96	0.51	3.24	1.74	105.0	466	0.02	263	106.7
51	1768	5800	23.9	13.33	0.20	1.39	0.60	30.9	466	0.02	223	31.5
52	1802	5910	19.4	19.47	0.26	1.46	0.63	21.5	471	0.03	110	22.1
53	1820	5970	11.4	34.93	0.52	3.03	1.76	106.0	466	0.02	303	107.8
54	1851	6070	9.2	31.29	0.66	2.05	0.74	26.6	479	0.03	85	27.3
55	1881	6170	8.9	34.54	0.43	2.32	0.91	57.1	472	0.02	165	58.0

56	1902	6240	22.8	9.76	0.17	1.13	0.43	19.5	475	0.02	200	19.9
57	1930	6330	17.9	9.16	0.13	1.04	0.10	7.9	492	0.01	86	8.0
58	1960	6430	22.5	10.30	0.18	1.05	0.18	13.2	476	0.01	129	13.4
59	1985	6510	21.4	2.03	0.07	0.43	0.10	0.3	439	0.11	39	0.9
60	2021	6630	7.6	3.55	0.09	0.70	0.11	1.0	487	0.10	28	1.1
61	2055	6740	23.6	4.49	0.10	0.65	0.15	2.2	499	0.06	49	2.4
62	2085	6840	2.2	4.14	0.11	0.82	0.18	2.1	478	0.08	51	2.3
63	2104	6900	13.4	1.39	0.06	0.41	0.03	0.9	435	0.03	43	1.0
64	2128	6980	6.6	8.65	0.18	1.04	0.80	13.6	471	0.06	157	14.4
65	2155	7070	2.4	41.91	0.69	3.13	4.06	34.7	431	0.05	202	88.8
66	2192	7190	7.9	9.04	0.18	1.09	0.31	10.0	481	0.03	110	10.3
67	2229	7310	10.9	3.91	0.08	0.32	0.17	2.4	451	0.07	60	2.5
68	2262	7420	3.1	10.93	0.15	1.32	0.92	22.6	480	0.04	207	23.5
69	2293	7520	7.9	41.95	0.60	2.32	1.93	72.9	475	0.03	174	74.9
70	2320	7610	1.6	19.51	0.32	2.05	1.50	69.2	478	0.02	355	70.7
71	2345	7690	6.0	41.23	0.57	3.02	2.35	96.6	473	0.02	234	99.0
72	2363	7750	41.0	2.42	0.07	0.60	0.18	1.2	481	0.13	49	1.4
73	2381	7810	3.7	5.92	0.10	0.32	0.34	10.2	491	0.03	172	10.5
74	2402	7880	4.9	18.11	0.26	1.89	1.75	44.2	405	0.04	244	46.0
75	2427	7960	4.9	19.31	0.21	1.60	4.26	44.1	431	0.09	223	48.4
76	2445	8020	4.1	8.37	0.14	1.18	1.08	23.5	456	0.04	281	24.6
77	2476	8120	0.3	21.96	0.26	1.74	0.31	35.1	432	0.02	160	35.9
78	2503	8210	1.9	12.18	0.13	1.19	1.36	30.2	478	0.04	248	31.6
79	2506	8220	1.9	10.57	0.13	0.94	1.18	21.7	433	0.05	205	22.9
80	2518	8260	0.8	14.51	0.17	1.44	2.13	36.3	478	0.06	250	38.4
81	2534	8310	0.5	28.34	0.29	2.43	7.42	101.0	471	0.07	356	108.4
82	2555	8380	0.5	21.34	0.27	1.90	4.08	67.8	478	0.06	318	71.9
83	2567	8420	2.3	13.26	0.16	1.16	0.94	24.6	431	0.04	196	25.5
84	2579	8460	0.9	6.75	0.08	0.67	0.30	12.1	482	0.02	179	12.4
95	2287	7502	bd1	69.50	0.60	4.32	9.74	150.0	462	0.06	216	159.7
98	1559	5112	bd1	73.50	0.73	4.83	6.04	193.0	467	0.03	263	199.0
116	1492	4894	bd1	69.30	0.23	6.03	25.70	339.0	449	0.06	597	414.7
120	1448	4750	bd1	44.00	0.31	3.61	5.25	152.0	456	0.03	339	157.3
121	1559	5114	bd1	63.00	0.57	4.35	7.22	156.0	411	0.04	229	163.2
122	2207	7239	5.7	2.60	bd1	0.74	0.42	2.7	468	0.13	104	3.1

Pyrolysis run with CDS Pyroprobe and modified interface: TMAX inaccurate.

M is sample depth in meters.

FT is sample depth in feet.

XI-C is inorganic carbon as % calcium carbonate in rock.

XO-C is organic carbon as % carbon in rock.

ZN is % nitrogen in rock.

ZH is % hydrogen in rock.

S1 is pyrolysis free-hydrocarbon signal (mg hydrocarbons/g rock).

S2 is pyrolysis kerogen signal (mg S2 hydrocarbons/g rock).

PI is production index [S1/(S1+S2)].

TMAX is temperature at which S2 signal is maximum (deg C).

HI is hydrogen index (mg hydrocarbons/g O-C).

GP is genetic potential (kg hydrocarbons/ton rock) (S1+S2).

'bd1' means 'below detection limit'; '---' means 'not determined'.

'ndm' means 'no definitive maximum'.

APPENDIX 3

GAS ANALYSES

BY

BUREAU OF MINERAL RESOURCES

GAS ANALYSIS
(GAS CHROMATOGRAPHY)

WELL: ESSO GIPPSLAND SHELF NO. 4.

Sample Details	Zone: 2 Test: 1 BMR-G-1 1950 hrs 14.3.66 120 P.S.I.G. Interval: 5122'- 5137'	Zone: 2 Test: 2 BMR-G-2 1120 hrs 15.3.66 120 P.S.I.G. Interval: 5122'- 5137'	Zone: 3 Test: 1 0515 hrs 20.3.66 Sep. Press 760 Interval; 5069'- 5077'	Zone: 4 Rate: 3 1530 hrs 23.3.66 Sep. Press 580 Interval: 4532'- 4552'	Zone: 5 Test: 1 BMR-G-2 2245 hrs 1.4.66 Sep. Press 780 Interval: 4532'- 4552' and 4562'- 4582'
Components (%MOL)					
H and He	N.Dc.	N.Dc.	N.Dc.	N.Dc.	N.Dc.
O ₂ + Ar	0.234	1.91	0.142	0.072	0.085
N ₂	0.880	15.95	0.739	0.590	0.558
CO	N.Dc.	N.Dc.	N.Dc.	N.Dc.	N.Dc.
CO ₂	2.47	6.09	3.00	1.87	1.52
Methane	77.8	61.9	83.3	86.3	86.2
Ethane	9.85	7.51	7.15	6.55	6.48
Propane	6.06	4.60	3.74	3.38	3.63
Isobutane	0.812	0.605	0.574	0.475	0.515
Butane	1.23	0.920	0.868	0.654	0.708
Isopentane	0.264	0.215	0.219	0.131	0.149
Pentane	0.221	0.170	0.183	0.096	0.120
Dimethylbutane	0.003	0.002	Trace	Trace	Trace
2-Methylpentane	0.058	0.047	0.046	0.019	0.029
3-Methylpentane	0.022	0.016	0.015	0.009	0.014
Hexane	0.052	0.047	0.027	0.016	0.038
C ₇ and higher	0.034	0.029	0.018	0.010	0.122
H ₂ S	N11	N11	N11	N11	N11

- Note:**
1. N.Dc. - Not Detected
 2. Composition of gases, as above is quoted for the samples on hand and at the time of testing only.
 3. Analysis by: J. Puchel
 4. Date of analysis: 27th April, 1966

GAS ANALYSIS
(BY GAS CHROMATOGRAPHY)

SAMPLE	ESSO GIPPSLAND SHELF NO. 4. SAMPLE NO. 7. DATE 4.3.66. TIME: 16.15 RATE NO. 1, TEST NO.1. PRESSURE: 1070 P.S.I.G. INTERVAL: 7406' - 66' & 7514' - 74'
--------	--

COMPONENTS (% MOL)	
H	N.D.c.
He	NOT TESTED FOR
O+Ar	0.433
N	1.62%
CO	N.D.c.
CO ₂	17.4%
METHANE	72.7%
ETHANE	4.79%
PROPANE	2.18%
ISOBUTANE	0.241%
BUTANE	0.554%
ISOPENTANE	0.093%
PENTANE	0.080%
DIMETHYLBUTANE	TRACE
2-METHYLPENTANE	0.25%
3-METHYLPENTANE	0.010%
HEXANE	0.018%
HEPTANE AND HIGHER	TRACE
H ₂ S	N.D.c.

Analysis by: J. Puchel Date of Analysis: 17th March 1966.

- NOTE: 1. N.D.c. - NOT DETECTED.
2. COMPOSITION OF THE GAS, AS ABOVE, IS QUOTED FOR THE SAMPLE ON HAND AND AT THE TIME OF TESTING ONLY.
3. SAMPLE DESCRIPTION, AS ABOVE, IS THAT ON THE SAMPLE CYLINDER. AN ENVELOPE IN THE PACKING OF THE SAMPLE CONTAINED A TICKET WITH ANOTHER DESCRIPTION OF THE SAMPLE: 'ESSO GIPPSLAND SHELF NO. 4, DATE: 7.3.66. TIME: 16.15. INTERVAL: 7514-76' AND 7406-66'.

2nd Copy

GAS ANALYSIS
(BY GAS CHROMATOGRAPHY)
By B.M.R.

SAMPLE	ESSO GIPPSLAND SHELF NO.4. SAMPLE NO.7. DATE: 4.3.66. TIME: 16.15, RATE NO.1, TEST NO.1. PRESSURE: 1070 P.S.I.G. INTERVAL: 7406' - 66' & 7514' - 74'.
COMPONENTS (% MOL)	

H	N.De.
He	NOT TESTED FOR
O+Ar	0.433
N	1.62%
CO	N.De.
CO2	17.4%
METHANE	72.7%
ETHANE	4.79%
PROPANE	2.18%
ISOBUTANE	0.341%
BUTANE	0.334%
ISOPENTANE	0.093%
PENTANE	0.080%
DIMETHYLBUTANE	TRACE
2-METHYLPENTANE	0.23%
3-METHYLPENTANE	0.010%
HEXANE	0.018%
HEPTANE AND HIGHER	TRACE
H ₂ S	N.De

Analysis by: J. Puchel Date of Analysis: 17th March 1966.

- NOTE: 1, N.De. - NOT DETECTED.
2, COMPOSITION OF THE GAS, AS ABOVE, IS QUOTED FOR THE SAMPLE ON HAND AND AT THE TIME OF TESTING ONLY.
3, SAMPLE DESCRIPTION, AS ABOVE, IS THAT ON THE SAMPLE CYLINDER. AN ENVELOPE IN THE PACKING OF THE SAMPLE CONTAINED A TICKET WITH ANOTHER DESCRIPTION OF THE SAMPLE: "ESSO GIPPSLAND SHELF NO.4, DATE 7.3.66. TIME: 16.15, INTERVAL: 7514' - 76' & 7406' - 66'".

27/4/66

GAS ANALYSIS

with letter dated 4/5/1966.

(GAS CHROMATOGRAPHY)

By B. M. R.

WELL: ESSO GIPPSLAND SHELF NO. 4

Sample Details	Zone: 2 Test: 1 BMR-G-1 1950 hrs. 14.3.66 120 P.S.I.G. Interval: 5122' - 5137'	Zone: 2 Test: 2 BMR-G-2 1120 hrs. 15.3.66 120 P.S.I.G. Interval: 5122' - 5137'	Zone: 3 Test: 1 0515 hrs. 20.3.66 Sep. Press: 760* Interval: 5069' - 5077'	Zone: 4 Rate: 3 1530 hrs. 23.3.66 Sep. Press: 580* Interval: 4532' - 4552'	Zone: 5 Test: 1 BMR-G-2 2245 hrs. 1.4.66 Sep. Press: 780* Interval: 4532' - 4552' and 4562' - 4582'
Components (% MOL)					
H ₂ and He	N.Dc.	N.Dc.	N.Dc.	N.Dc.	N.Dc.
O ₂ + Ar	0.234	1.91	0.142	0.072	0.085
N ₂	0.880	15.95	0.739	0.590	0.558
CO	N.Dc.	N.Dc.	N.Dc.	N.Dc.	N.Dc.
CO ₂	2.47	6.09	3.00	1.87	1.52
Methane	77.8	61.9	83.3	86.3	86.2
Ethane	9.83	7.51	7.15	6.35	6.48
Propane	6.06	4.60	3.74	3.38	3.63
Isobutane	0.812	0.605	0.574	0.473	0.515
Butane	1.23	0.920	0.868	0.654	0.708
Isopentane	0.264	0.215	0.219	0.131	0.149
Pentane	0.221	0.170	0.183	0.096	0.120
2-Methylbutanes	0.003	0.002	Trace	Trace	Trace
2-Methylpentane	0.058	0.047	0.046	0.019	0.029
3-Methylpentane	0.022	0.016	0.013	0.009	0.014
Hexane	0.052	0.047	0.027	0.016	0.038
C ₇ and higher	0.034	0.029	0.018	0.010	0.182
H ₂ S	Nil	Nil	Nil	Nil	Nil

Note: 1 N.Dc. - Not Detected.

2 Composition of gases, as above, is quoted for the samples on hand and at the time of testing only.

3 Analysis by: J. Puchel.

4 Date of analysis: 27th April, 1966

CHEMICAL BRANCH
MINES DEPARTMENT1st copy in
W.C.R.

GNG:SP

20th September,

66

AN. GG/GM/17/5

Report on Samples Nos. 377 - 385/66

sample : Condensate
 Locality : Gippeland Shelf
 Sender : Esso-Exploration (Aust.) Inc.,
 360 Lonsdale Street,
MELBOURNE

Description of Samples:

Nine samples of condensate from Gippeland Shelf (MARLIN-1)
 No.4 were received for examination.

Results:

Laboratory No.	377	378	379	380				
Test No.	-	-	-	-				
Zone	4	4	4	4				
Rate	Cl.up	1	2	3				
Mark	G3	G6	G9	G12				
Time (hrs.)	0815	0830	1315	1600				
Sec. Pressure (P.S.I.)	500	490	460	570				
Interval	4532-4552	4532-4552	4532-4552	4532-4552				
Date	23rd March 1966	23rd March 1966	23rd March 1966	23rd March 1966				
Initial S.F.	36°C.	32°C.	41°C.	56°C.				
	Vol. ml.	Temp. °C.	Vol. ml.	Temp. °C.	Vol. ml.	Temp. °C.	Vol. ml.	Temp. °C.
	10	55.5	10	51	10	58.5	10	64
	20	67.5	20	62	20	68.5	20	71
	30	78	30	73	30	78	30	78.5
	40	88.5	40	83.5	40	87	40	87
	50	98	50	94.5	50	97	50	95
	60	109	60	106	60	107.5	60	105
	70	119	70	118	70	121.5	70	116
	80	146	80	137	80	143.5	80	131.5
	90	190	90	176	90	188	90	166

Results (cont.)

	177	178	179	180
Recovery	95 ml.	96 ml.	95.5 ml.	97 ml.
End Point	245°C.	222°C.	245°C.	235.5°C.
Volume of Residue	1.3 ml.	1.6 ml.	1.3 ml.	1.2 ml.
Distillation Loss	3.7 ml.	2.4 ml.	3.2 ml.	1.8 ml.
Specific Gravity (15.5°C.)	0.703	0.705	0.705	0.707
Sulphur (S)	0.027%	0.020%	0.022%	0.019%
Colour	Colourless	Colourless	Colourless	Colourless
Odour	Petroliferous	Petroliferous	Petroliferous	Petroliferous
Laboratory No.	381	382	383	384
Test No.	1	-	-	-
Zone	3	5	5	5
Run	-	1	3	4
Mark	02	03	07	011
Time (Hrs.)	0445	2250	0720	1110
Separator Pressure (P.S.I.)	600	720	700	730
Interval	5069-5077	4562-4582 4532-4552	4562-4582 4532-4552	4562-4582 4532-4552
Date	20th March, 1966.	1st April, 1966.	2nd April, 1966.	2nd April, 1966.

Initial B.P.	48.5°C.	33.5°C.	32.°C.	26°C.
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Vol. ml.	Temp. °C.	Vol. ml.	Temp. °C.	Vol. ml.	Temp. °C.	Vol. ml.	Temp. °C.
10	66	10	50	10	48	10	44
20	72.5	20	62.5	20	60	20	56
30	79.5	30	75	30	70	30	68.5
40	86.5	40	85.5	40	81	40	81.0
50	93	50	97.0	50	92.5	50	93.5
60	100.5	60	109.0	60	107	60	100.6
70	110	70	118	70	117	70	116
80	122.5	80	148	80	140.5	80	149
90	145	90	207	90	212.5	90	220

Recovery	97.8 ml.	93. ml.	92 ml.	91.0 ml.
End Point.	210.5°C.	239.5°C.	238°C.	234°C.
Volume of Residue	1.0 ml.	1.3 ml.	1.6 ml.	1.6 ml.
Distillation Loss	1.2 ml.	5.7 ml.	6.4 ml.	7.4 ml.
Specific Gravity (15.5°C.)	0.707	0.698	0.693	0.689
Sulphur (S)	0.010%	0.025%	0.030%	0.029%
Colour	Brown turbid.	Colourless	Colourless	Colourless
Odour	Petroliferous	Petroliferous	Petroliferous	Petroliferous

Results. (cont).

Laboratory No. 385
 Test No. -
 Zone 5
 Run 4
 Mark 012
 Time (hrs.) 1120
 Separator Pressure (P.S.I.) 740
 Interval 4562-4582
 4532-4552
 Date 2nd April, 1956.

Initial B.P.

30°C.

Vol. ml.	Temp. °C.
40	44
20	56
30	68.5
40	81.0
50	93.5
60	107
70	122.5
80	151.5
90	227

Recovery 91 mls.
 End Point 238.5°C.
 Volume of Residue 1.4 mls.
 Distillation Loss 7.6 mls.
 Specific Gravity (15.5°C). 0.689
 Sulphur (S) 0.02%
 Colour Colourless
 Odour Petroliferous

John E. ...
for RMB
 Senior Chemist,
 Mines Department.

An. GG/PP/6/5

Report on Samples Nos. 375, 376/66.

Samples : Natural Gas
 Locality : Gippsland Shelf
 Sender : Baso Exploration (Aust.) Inc.,
 360 Lonsdale Street,
MELBOURNE.

Baso Marlin A1

Two samples of natural gas were received for analysis. The gas was obtained during the drilling of the well, Baso Marlin A1.

Particulars of Samples:

Lab. No.	375	376
Sample	No.1	No.2
Date	23.3.66	1.4.66
Time	1530	2245
Sep. Pressure	580	780
Interval	4532-4552	4532-52, 4562-82
Zone	-	5
Test	-	1
Rate	3	

<u>Results:</u>	<u>As Received</u> <u>% V/V</u>	<u>As received</u> <u>% V/V</u>
Methane	85.2	84.5
Ethane	6.8	6.60
Propane	3.6	3.70
Isobutane	0.63	0.63
n-Butane	0.67	0.86
Isopentane	0.20	0.26
n-Pentane	0.16	0.20
C ₆ + higher	0.04	0.08
Oxygen	0.01	0.01
Nitrogen	0.68	0.76
Carbon Dioxide	2.28	2.20
Helium not detected.		

Air present in trace quantity only.

John C. Kennedy
 per *SMH*
 Senior Chemist,
 Mines Department

GM:13P

13th December,

65

An. GM/10/28/3

Report on Samples Nos. 255-56/66.

Sample : Crude Oil
Locality : Off-shore from Lakes Entrance
Sender : The Manager,
Esso Exploration (Australia) Inc.,
360 Lonsdale Street,
MELBOURNE.

Description of samples:

Esso Marlin A1

Two samples of crude oil, obtained during the drilling of well, Esso Marlin A1, were received for examination.

Results:

Lab. No.	255	256
Test	1	2
Zone	2	2
Marking	G5	G10
Interval	5122-37	5122-37
Dep. Press.	100	150
Time	1930	1130
Date	14th Mar. 1966.	15th Mar. 1966.

The crude oils possessed the following properties:

	255/66	256/66
Colour	Reddish brown	Reddish brown
Fluorescence	Blue surface fluorescence.	Blue surface fluorescence.
Odour	Petroliferous	Petroliferous
Condition	Light oil	Light oil
Specific Gravity at 15.5°C.	0.771	0.772
Sulphur (Total %)	0.25	0.30
Paraffine	Paraffin base	Paraffin base

Fractional Distillation Laboratory No. 255/66
Initial Boiling Point 44°C.

Fraction	Boiling-Point Range	Percentage	Remarks
Light Oil	to 170°C	38	Water-white colour purple-blue fluorescence.
Kerosene	170 - 230°C	19	Water white colour purple-blue fluorescence.
Gas Oil	230 - 300°C	29	Pale yellow oil, blue surface fluorescence.
Light Lubricating	to 240°C (Vacuum 24" Hg)	7	Yellow oil, blue surface fluorescence.
Bitumen, heavy oil, gas and loss	over 240°C (Vacuum 24" Hg)	7	Black residue, yellow fluorescence.

NOTE: Wax was deposited in the condenser under vacuum.

Fractional Distillation Laboratory No. 256/66
Initial B. 45°C.

Fraction	Boiling-Point Range	Percentage	Remarks
Light Oil	to 170°C	39	Water-white colour purple-blue fluorescence.
Kerosene	170 - 230°C.	19	Water-white colour purple-blue fluorescence.
Gas Oil	230 - 300°C.	30	Pale yellow oil, blue fluorescence.
Light Lubricating	to 242°C (Vacuum 24" Hg)	7	Yellow oil, blue surface fluorescence.
Bitumen, heavy oil, gas and loss.	over 242°C (Vacuum 24" Hg)	5	Black residue, yellow fluorescence.

NOTE: Wax was deposited in the condenser under vacuum.

John C. Kennedy
 12/19/66
Senior Chemist,
Minas Department.

GMG:SP
An. GM/GG/28/3

3rd November,

66

Report on Samples Nos. 251-54/66

Samples : Condensates
Locality : Off-shore from Lakes Entrance
Sender : The Manager,
Esso Exploration (Australia) Inc,
360 Lonsdale Street,
MELBOURNE.

Description of Samples:

Esso Marlin A1

Four samples of condensate obtained during the drilling of the well Marlin A1 by Esso Exploration Inc, were received for testing.

Lab.No.	251	252	253	254
Test	1	1	1	1
Rate	1	2	4	5
Marking	G3	G7	G16	G18
Interval	7406-66 7514-74	7406-66 7514-74	7406-66 7514-74	7406-66 7514-74
Sep.Press.	980	900	980	920
Time	1615	1325	2245	0115
Date	4th Mar. 1966	7th Mar. 1966	7th Mar. 1966	8th Mar. 1966

Results:

Lab.No.	251	252	253	254				
Initial BP	32°C	50°C	45°C	45°C				
	Vol. ml.	Temp. °C.	Vol. ml.	Temp. °C.	Vol. ml.	Temp. °C.	Vol. ml.	Temp. °C.
	10	59	10	76	10	78	10	65
	20	77	20	96	20	90	20	80
	30	92	30	109	30	102	30	93
	40	103	40	121.5	40	116	40	108
	50	121	50	140	50	137	50	124
	60	142.5	60	170	60	165	60	158
	70	175	70	201	70	206	70	198
	80	220	80	249	80	260	80	246

JRA
12/12/66

Results: (cont.)

Lab.No.	251	252	253	254
Recovery	83 ml.	81 ml.	91 ml.	83 ml.
and point	248°C.	249°C.	279°C.	252°C.
Volume of Residue	11.3 ml.	12.5 ml.	8.2 ml.	15.2 ml.
Distillation Loss	5.7 ml.	6.5 ml.	0.8 ml.	1.8 ml.
Specific Gravity 15.5°C.	0.721	0.745	0.736	0.731
Sulphur(S) (Total)	0.020	0.014	0.012	0.007
Colour	Colourless, noticeable bloom	Colourless, noticeable bloom	Colourless, noticeable bloom	Colourless, noticeable bloom
Odour	Petroliferous	Petroliferous	Petroliferous	Petroliferous

John A. Kennedy
 Senior Chemist
 Glass Department.

AN. GG/FF/9/5

Report on Samples Nos. 249, 250/66

Sample : Natural Gas
 Locality : Off-Shore from Lakes Entrance
 Sender : The Manager,
 Esso Exploration (Australia) Inc.,
 360 Lonedale Street,
MALBORNE.

Esso Marlin A1

Two samples of natural gas were received for analysis. The gas was obtained during the drilling of the well Esso Marlin A1.

Particulars of Samples:

Lab.No.	249	250
Test	1	G1
Zone	3	2
Marking	RGS H4	RGS H4
Interval	5069-77	5122-37
Sep. Press.	760	100
Time	0515	2010
Date	20th March, 1966	14th March, 1966

Condition of Sample

The samples were received in two small high pressure cylinders.

Lab.No.	249	250
	<u>As Received</u> <u>± V/V</u>	<u>*Air-Free Basis</u> <u>- ± V/V</u>
Methane	82.1	78.5
Ethane	6.4	9.6
Propane	3.6	6.2
Isobutane	0.70	0.99
n-butane	0.90	1.46
Isopentane	0.39	0.44
n-Pentane	0.30	0.44
C ₆ and higher	0.18	0.43
Oxygen	0.01	-
Nitrogen	0.42	0.31
Carbon Dioxide	4.7	1.44
Sulphur content % w/w	0.000847	n.d.
Helium	Not detected	Not detected.

* The oxygen present in the sample was assumed to be due to the presence of air, and after removing this oxygen and its air-proportional nitrogen, the components were re-calculated on an air-free basis.

John A. Kennell
 Senior Chemist,
 Mines Department.

GRG:SP

30th November,

66

An. GRG/6/5

Report on Sample No. 248/66

Sample : Liquid
 Locality : Off-shore from Lakes Entrance
 Sender : The Manager,
 Esso Exploration (Australia) Inc.,
 360 Lonsdale Street,
MELBOURNE.

Description of Sample

Esso Merlin A1

A small high pressure cylinder was received for testing. It was stated to contain liquid.

Analysis:

Lab. No.	248
Run	1
Zone	2
Marking	ES5 H4
Interval	5122 - 37
Dep. Press.	100
Fine	2010
Date	14th Mar. 1966

The only liquid the cylinder contained was a small amount of frothy aqueous emulsion.

The analysis of this emulsion was not attempted.

John C. Kennedy
 14/3/66

Senior Chemist,
Mines Department.