roxy PETROLEUM LTD.

October 17, 1983

Manitoba Department of Energy & Mines
Mineral Resources Division
Petroleum Branch
975 Century Street
WINNIPEG, Manitiba
R3H 0W4

Attn: L.R. Dubreuil
       Chief Petroleum Engineer
       Petroleum Branch

Dear Mr. Dubreuil:

Re: PVT Reservoir Fluid Study
     Roxy Operated Whitewater Field

Enclosed please find one copy of the subject study performed by Agat Engineering on fluid obtained from Roxy-Andex Whitewater 10-2-3-21 WPM well. This study was performed to determine the reservoir saturation point which was determined to be 1193 kPa (173 psig).

This study is forwarded to your attention as per your meeting and subsequent discussion in July with Dan Parliament and Verne Johnson of Roxy Petroleum.

Should you wish to discuss any pertinent items of this study, please contact Mr. Dan Parliament or the undersigned.
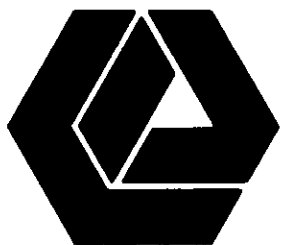
Yours truly,

ROXY PETROLEUM LTD.

E.J. Pelensky
Production Engineer

EJP/kp
Enclosure

AGAT

ROXY PETROLEUM LTD.
RESERVOIR FLUID STUDY
ROXY-ANDEX ET AL WHITEWATER
10-2-3-21 W1M

CALGARY

EDMONTON

October 11, 1983

Roxy Petroleum Ltd.
2000 Aquitaine Tower
540 - 5th Avenue S.W.
Calgary, Alberta
T2P 0M2

Attention: **Mr. Elmer Pelensky**

Dear Elmer:

Re: **Reservoir Fluid Study,**
       Roxy-Andex et al Whitewater #10-2-3-21W1M

Attached is the PVT report presenting data collected on the surface samples obtained from the above location. A full PVT study including pressure-volume relationships, differential liberation test, compositional analysis and other physical properties was performed.
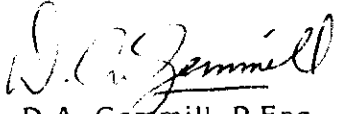
We have enjoyed this opportunity to be of service to you and to your company. Should you have any questions concerning this report, we would be pleased to receive your call.

Respectfully submitted,

AGAT Engineering

N. Lavorato, B.Sc.
Chemist

D.A. Gemmill, P.Eng.
Manager, Technical Services

DAG/jrw

Enclosure

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INTRODUCTION

A PVT study has been conducted on the surface separator samples obtained from Roxy Petroleum's Manitoba well Roxy-Andex et al Whitewater 10-2-3-21W1M. Three separator gas samples and two separator liquid samples were received at AGAT Engineering laboratories, August 24, 1983.

In the laboratory, the surface separator samples were recombined to a GOR of 30 SCF/STB (5.34 m^3API/m^3) and the PVT study was conducted on the recombined samples.

This report presents all fluid properties measured on the reservoir fluid saturated at the current reservoir pressure.

EXPERIMENTAL METHODS

Separator oil and gas samples from the well Roxy-Andex et al Whitewater 10-2-3-21W1M were analysed, and a flash test was performed on the separator oil sample to determine its gas-oil ratio and separator to stock tank oil volume ratio.

The separator gas was then transferred cryogenically into a windowed PVT cell. The cell is a three-windowed high-pressure, stainless steel vessel of 500 ml capacity enclosed in a thermostatically controlled temperature bath. The cell can be rotated to establish equilibrium of the cell contents.

A determined amount of separator oil was then added to the cell. The reservoir fluid was recombined to a gas-oil ratio of approximately $5.34 \text{ m}^3\text{API/m}^3$ STO (30 SCF/STB). The saturation pressure of this oil was determined from the pressure-volume (PV) measurements at reservoir temperature and was determined to be quite low at 1193 kPa (173 psia).

The equilibrium oil was flashed to stock tank conditions. The compositional analyses of the stock tank oil and gas were obtained and were mathematically recombined to determine the reservoir fluid composition.

The differential liberation characteristics were then evaluated at seven discrete pressure steps (Table 4). At each step the equilibrium gas was analysed and expelled from the cell. The formation volume factor, solution gas-oil ratio, liberated gas compressibility factor and oil gravity were measured and calculated at each step.

To measure the viscosity of the reservoir fluid, a portion of the sample was allowed to flow through a capillary viscometer. The apparatus consists of a known sized tubing, a constant displacement pump, a differential pressure transducer and a back pressure regulator. The pressure drop across the tubing at a constant fluid flow rate was measured, and the viscosity was calculated using Hagen-Poiseuille's law. Viscosities were measured under differential liberation conditions, and the dead oil viscosity was confirmed by measurement of a cross-arm viscometer (A.S.T.M. D446).

RESULTS AND DISCUSSION

1. Table 1 summarizes the results obtained in this study.

2. In the flash liberation test (pressure-volume relations), the Y-function was used to smooth the experimental data. The function was smoothed by least squares fit with pressure. The fit is used to confirm the visually determined bubble point and the flash liberation performance around the bubble point. The equation for the Y-function is outlined below:

$$Y = A + B\,(P) = (P_b - P)/P(V/V_b - 1)$$

In this test, $Y = 14.8781 + 0.0045\,P$, where P is in Psia.

3. Gas viscosities were calculated using the correlation by Carr, Kobayashi and Burrows, Trans AIME 1954.

4. Oil viscosities were correlated using Beggs-Robinson equations based on the measured dead oil viscosity at $33^{\circ}C$ $(91.4^{\circ}F)$.

5. Live oil viscosities were measured by means of a capillary viscometer and calculated by the Hagen-Poiseuille equation. If the differential pressure across a capillary tube is measured and the flow rate of the fluid through this tube is known, the fluid viscosity can be calculated. The simplified Hagen-Poiseuille equation is written as follows:

$$\mu = \frac{\Delta P\,D^4}{Q\,L} \times 8.459 \times 10^8$$

Where: ΔP is the differential pressure across the tube, psi
       Q is the fluid flow rate, cm^3/hr
       D is the internal diameter of the capillary tube, inches
       L is the length of the capillary tube, feet
       μ is the fluid viscosity, cp (mPa.s).

In the measurement apparatus used, L is 19.85 feet and D is 0.0225 inches. This reduces the Hagen-Poiseuille equation to $\mu = \Delta P/Q \times 10.826$.

Experimental data are shown in Table. 5.

6. It is significant to note that the oil density decreases with decreasing pressure and decreasing gas in solution, while the relative oil volume increases with decreasing pressure and gas in solution. These apparent abnormalities are due to the fact that the system has a very high compressibility within the region under investigation. As a result, the expansion of the system with decreasing pressure more than compensates for the decreased mass due to the loss of gas, and thus causes the seemingly abnormal results.

TABLES

TABLE 1

PVT Summary

Reservoir Temperature, ^{O}C (^{O}F)	33	(91.4)
Saturation Pressure, kPa absolute (Psia)	1193	(173)
Saturated Oil Properties (oil at bubble point)		
Density, g/cm^3	0.8458	
Specific Volume, dcm^3/kg	1.1823	
Viscosity — Measured at 1379 kPa abs (200 psia), (mPa.S)	5.62 [1]	
— Correlated at 1379 kPa abs, (mPa.S)	4.96 [2]	
B_{of} — Formation Volume Factor from flash test, (m^3/m^3 or RB/STB)	1.068	
B_{od} — Formation Volume Factor from Differential Liberation test, (m^3/m^3 or RB/STB)	1.080	
— Correlation, (m^3/m^3 or RB/STB)	1.028 [3]	
R_{sf} — Gas-Oil Ratio from flash test, (m^3API/m^3, SCF/STB)	5.49	30.84
R_{sd} — Gas-Oil Ratio from Differential Liberation test, (m^3API/m^3, SCF/STB)	5.33	29.94
Compressibility of Saturated Oil		
C_o (Vol/Vol/kPa x 10^{-6}, Vol/Vol/Psi x 10^{-6})		
From 13824 kPa abs (2005 psia) to 17271 kPa (2505 psia)	.7091	4.89
From 3392 kPa abs (492 psia) to 6895 kPa (1000 psia)	1.154	7.96
From 1317 kPa abs (191 psia) to 1710 kPa (248 psia)	8.033	53.9 ?

Thermal Expansion at 1193 kPa (173 psia)

$$\frac{\text{Vol. at Res Temp}}{\text{Vol. at } 15^{O}C} = \qquad 1.0617$$

Note:

1) Measured by capillary tube viscometer.
2) Calculated by Beggs-Robinson correlation based on the measured dead oil viscosity at reservoir temperature.
3) Calculated by correlation of Standing and Katz.

TABLE 2

Pressure-Volume Relations (Flash Liberation) Of Reservoir Fluid At 33°C (91.4°F)

PRESSURE kPa abs, Psia		RELATIVE VOLUME (V/Vsat.) Experimental	Smoothed	Y-FUNCTION Experimental	Smoothed
17271	2505	0.9801			
15513	2250	0.9814			
13824	2005	0.9825			
12183	1767	0.9836			
10307	1495	0.9850			
8701	1262	0.9862			
6895	1000	0.9876			
5171	750	0.9893			
3392	492	0.9916			
2758	400	0.9927			
2117	307	0.9944			
1710	248	0.9959			
1655	240	0.9964			
1620	235	0.9969			
1551	225	0.9975			
1400	203	0.9985			
1317	191	0.9992			
1193	173	1.0000			
1172	170	1.0011	1.0011	16.5364	15.6359
1000	145	1.0108	1.0124	17.8149	15.5245
862	125	1.0314	1.0249	12.2123	15.4353
600	87	1.0699	1.0648	14.1420	15.2659
469	68	1.1071	1.1017	14.4239	15.1812
241	35	1.2327	1.2623	16.9474	15.0341

Notes:

1) Psat = Saturation Pressure = 1192.8 kPa absolute (173 Psia)
2) Vsat = Volume of reservoir fluid at saturation pressure
3) Y-Function = $(Psat - P)/P(V/Vsat - 1)$
4) Smoothed $Y = 14.8781 + 0.0045\,P$ (where P is in Psia), standard deviation of the least squares fit = 1.9123.

TABLE 3

Zero Flash Test

Barometric Pressure   :   90 kPa abs (13 Psia)
Reservoir Temperature   :   33°C (91.4°F)

The recombined fluid was flashed from a pressure of 6895 kPa abs (1000 psia) to atmospheric conditions.

	Atmospheric
Temperature °C	18.0
Pressure, psi gauge (kPa gauge)	0
Gas/Oil Ratio,[1] m³API/m³STO	5.49
Formation Volume Factor[2], Res m³/m³STO	1.054
Formation Volume Factor adjusted to saturation pressure	1.068

Notes:

1)   Gas/Oil ratio = cubic meters gas at 101.32 kPa abs and 15°C per cubic meter stock tank oil at 15°C.

2)   Formation Volume Factor = cubic meters saturated oil at 6895 kPa absolute and 33°C per cubic meter stock tank oil at 15°C.

TABLE 4A

Differential Liberation At 33°C (Experimental Data)

Pressure kPa abs	Oil Density g/cc	Relative Oil Volume[1]	Relative Total Volume[2]	Solution Gas/Oil Ratio[3]	Incremental Gas Gravity	Cum. Gas Gravity	Deviation Factor Z	Gas Formation Volume Factor[4]	Gas Expansion Factor[5]
1193	0.8458	1.0798	1.0798	5.33	---	---	---	---	---
1055	0.8444	1.0815	1.0909	5.24	1.0718	1.0718	0.9886	0.1011	9.890
896	0.8420	1.0841	1.1211	5.01	1.0541	1.0592	0.9902	0.1132	8.835
703	0.8390	1.0877	1.1579	4.79	1.0342	1.0491	0.9931	0.1478	6.767
524	0.8336	1.0944	1.2089	4.57	1.0428	1.0473	0.9945	0.1891	5.288
345	0.8255	1.1047	1.3133	4.27	1.0488	1.0477	0.9961	0.2249	4.447
193	0.8026	1.1357	1.5208	3.95	1.0862	1.0566	0.9974	0.2865	3.490
90	0.8526	1.0617	6.1611	0.00	1.3027	1.2390	0.9971	0.9051	1.105

(1)   cc's oil at indicated pressure and temperature per cc of residual oil at 15°C.
(2)   cc's oil plus liberated gas at indicated temperature and pressure per cc residual oil at 15°C.
(3)   cc's gas at 101.325 kPa absolute and 15°C per cc residual oil at 15°C.
(4)   cc's gas at indicated pressure and temperature per cc at 101.325 kPa absolute and 15°C.
(5)   1/gas formation volume factor.

TABLE 4B

Differential Liberation At 33°C (Smoothed Data)

Pressure kPa abs	Oil Density g/cc	Relative Oil Volume[1]	Relative Total Volume[2]	Solution Gas/Oil Ratio[3]	Incremental Gas Gravity	Cum. Gas Gravity	Deviation Factor Z	Gas Formation Volume Factor[4]	Gas Expansion Factor[5]
1193	0.8458	1.0309	1.0309	5.33	---	---	---	---	---
1055	0.8469	1.0293	1.0419	5.24	1.0718	1.0718	0.9886	0.1009	9.9127
896	0.8524	1.0240	1.0738	5.01	1.0541	1.0592	0.9902	0.1190	8.4054
703	0.8668	1.0051	1.1221	4.79	1.0342	1.0491	0.9931	0.1521	6.5758
524	0.8893	0.9794	1.2028	4.57	1.0428	1.0473	0.9945	0.2043	4.8946
345	0.9225	0.9436	1.3462	4.27	1.0488	1.0477	0.9961	0.3108	3.2171
193	0.9614	0.9050	1.5776	3.95	1.0862	1.0566	0.9974	0.5563	1.7975
90	0.9879	0.8744	5.2640	0.00	1.3027	1.2390	0.9971	1.1926	0.8385

(1)   cc's oil at indicated pressure and temperature per cc of residual oil at 15°C.
(2)   cc's oil plus liberated gas at indicated temperature and pressure per cc residual oil at 15°C.
(3)   cc's gas at 101.325 kPa absolute and 15°C per cc residual oil at 15°C.
(4)   cc's gas at indicated pressure and temperature per cc at 101.325 kPa absolute and 15°C.
(5)   1/gas formation volume factor.

TABLE 5

Oil Viscosity At 33°C

PRESSURE (kPa abs, Psia)		VISCOSITY MEASURED (mPa.S)	VISCOSITY CALCULATED (mPa.S)
6826	990	6.17	5.77
3448	500	5.76	5.17
1379	200	5.62	4.96
1193	173	5.59	4.95
1034	150	5.68	4.96
896	130	5.64	5.01
689	100	5.65	5.05
524	76	5.72	5.10
345	50	5.81	5.17
193	28	5.89	5.24
90	13	6.33	6.3*

Note: Calculated viscosities are obtained by the Beggs-Robinson correlation based on the measured dead oil viscosity at 33°C and the solution gas-oil ratio of the reservoir fluid from the differential liberation test.

*   Measured dead oil viscosity at 33°C.

TABLE 6

Oil Density At 33°C

PRESSURE (kPa abs, Psia)		DENSITY (g/cm³)
10307	1495	0.8587
6895	1000	0.8564
5171	750	0.8549
3392	492	0.8530
1710	248	0.8493
1400	203	0.8471
1193	173	0.8458
1055	153	0.8444
896	130	0.8420
703	102	0.8390
524	76	0.8336
345	50	0.8255
193	28	0.8026
90	13	0.8526

Gravity of residual oil at 15°C = 32.2°API

Note: Densities above bubble point are calculated from the volumetric data of the flash liberation test.

TABLE 7

Gas Viscosity From Differential Liberation Test At 33°C

PRESSURE kPa abs, Psia		VISCOSITY* (mPa.S)
1055	153	0.017452
896	130	0.017215
703	102	0.017486
524	76	0.017449
345	50	0.017483
193	28	0.017028
90	13	0.015725

* Values calculated using the composition of liberated gas and correlation of Carr, Kobayashi and Burrows "Viscosity of Hydrocarbon Gases Under Pressure" Trans AIME, 1954.

FLUID ANALYSIS

AGAT Engineering
BAY 1, 3650 - 21st ST. N.E.
CALGARY, ALTA. T2E 6V6
230-2477

GAS ANALYSIS

CONTAINER IDENTIFICATION

LABORATORY NUMBER
40-5609

OPERATOR NAME
ROXY PETROLEUM LTD.

UNIQUE WELL IDENTIFIER
10-2-3-21 W1M

WELL NAME
ROXY-ANDEX ET AL WHITEWATER

ELEVATIONS
KB m / GRD m

FIELD OR AREA | POOL OR ZONE | NAME OF SAMPLER | COMPANY

TEST TYPE | NO | TEST RECOVERY

TEST INTERVAL OR PERFS

SAMPLING POINT
SEPARATOR

	SEPARATOR	TREATER	RESERVOIR	SOURCE	SAMPLED	RECEIVED
GAUGE PRESSURE kPa						
TEMPERATURE °C						

DATE SAMPLED (Y-M-D) | DATE RECEIVED (Y-M-D) | DATE REPORTED (Y-M-D) | ANALYST | OTHER INFORMATION

COMP	MOLE FRACTION		PETROLEUM LIQUID CONTENT
	AIR FREE AS RECEIVED	AIR FREE ACID GAS FREE	mL·m³
H_2	.0004	.0004	
He	.0020	.0020	
N_2	.9103	.9284	
CO_2	.0193	.0000	
H_2S	TRACE	TRACE	
C_1	.0118	.0120	
C_2	.0186	.0190	
C_3	.0218	.0222	81.6
iC_4	.0050	.0051	22.4
nC_4	.0062	.0063	26.9
iC_5	.0020	.0020	10.3
nC_5	.0012	.0012	6.1
C_6	.0009	.0009	5.3
C_7	.0005	.0005	3.4
C_8	.0000	.0000	.6
C_9	.0000	.0000	.0
C_{10+}	.0000	.0000	.0
TOTAL	1.0000	1.0000	156.6

GROSS HEATING VALUE MJ·m³
15°C AND 101.325 kPa

MOISTURE AND ACID GAS FREE

MEASURED	CALCULATED	DETERMINED DEW POINT	VAPOUR PRESSURE PENTANES PLUS
	5.87	°C	96.6

— — — RELATIVE DENSITY — — —

MOISTURE FREE AS SAMPLED		MOISTURE AND ACID GAS FREE	
MEASURED	CALCULATED	MEASURED	CALCULATED
	1.004		.994

— — — PSEUDO CRITICAL PROPERTIES (CALCULATED) — — —

AS SAMPLED		ACID GAS FREE	
pPc (kPa)	pTc	pPc (kPa)	pTc
3532.	143.6	3456.	140.4

— — — RELATIVE MOLECULAR MASS — — —

TOTAL GAS	C_7
29.1	101.5

H_2S grn | .09

REMARKS:

AGAT Engineering

BAY 1, 3650 - 21 ST. N.E.
CALGARY, ALTA. T2E 6V6
230-2477

CONTAINER IDENTIFICATION	PRESSURIZED HYDROCARBON ANALYSIS	LABORATORY NUMBER
		40-5609

OPERATOR NAME
ROXY PETROLEUM LTD.

UNIQUE WELL IDENTIFIER	WELL NAME	ELEVATIONS
10-2-3-21 W1M	ROXY-ANDEX ET AL WHITEWATER	KB m / CAD m

FIELD OR AREA	POOL OR ZONE	NAME OF SAMPLER	COMPANY

TEST TYPE	NO	TEST RECOVERY

TEST INTERVAL OR PERFS

SAMPLING POINT

	SEPARATOR	TREATER	RESERVOIR	SOURCE	SAMPLED	RECEIVED
GAUGE PRESSURE kPa	300					
TEMPERATURE °C						

DATE SAMPLED (Y-M-D)	DATE RECEIVED (Y-M-D)	DATE REPORTED (Y-M-D)	ANALYST	OTHER INFORMATION
		83-10-04	S.V.	

COMP.	MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
N_2	.0146	.0035	.0031
CO_2	.0024	.0009	.0008
H_2S	.0002	.0001	.0001
C_1	.0006	.0001	.0002
C_2	.0058	.0015	.0030
C_3	.0400	.0149	.0212
iC_4	.0285	.0140	.0179
nC_4	.0643	.0316	.0390
iC_5	.0614	.0375	.0432
nC_5	.0607	.0370	.0423
C_6	.1459	.1062	.1102
C_7	.1108	.0927	.0928
C_8	.1027	.0968	.0930
C_9	.0371	.0401	.0400
C_{10}	.0531	.0638	.0625
C_{11}	.0418	.0552	.0534
C_{12+}	.2301	.4041	.3773
TOTAL	1.0000	1.0000	1.0000

PROPERTIES OF FRACTIONS (CALCULATED)

	MOLE FRACTION	MASS FRACTION	VOLUME FRACTION	DENSITY AT 15°C RELATIVE	DENSITY AT 15°C ABSOLUTE kg·m³	RELATIVE MOLECULAR MASS
C_{12+}	.2301	.4041	.3773	.7721	771.4	213.7
C_{7+}	.5756	.7527	.7190	.7543	753.6	156.1
C_{6+}	.8436	.9334	.9147	.7352	734.6	130.8

PROPERTIES OF TOTAL SAMPLE

	DENSITY AT 15°C RELATIVE		DENSITY AT 15°C ABSOLUTE kg·m³		RELATIVE MOLECULAR MASS	
	DETERMINED	CALCULATED	DETERMINED	CALCULATED	DETERMINED	CALCULATED
		.7206		719.9		118.2

REMARKS:

Calculated values may differ from measured values due to the amount of non-paraffinic hydrocarbons in the samples.

PROPERTIES OF C6+ FRACTION
========================

COMPONENT		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
HEXANES -------------------------------	C6	.0991	.0730	.0790
HEPTANES -------------------------------	C7	.0750	.0634	.0663
OCTANES -------------------------------	C8	.0702	.0676	.0689
NONANESS -------------------------------	C9	.0371	.0401	.0400
DECANES -------------------------------	C10	.0531	.0636	.0625
UNDECANES -------------------------------	C11	.0418	.0552	.0534
DODECANES -------------------------------	C12	.0340	.0488	.0468
TRIDECANES -------------------------------	C13	.0545	.0759	.0716
TETRADECANES -------------------------------	C14	.0336	.0566	.0535
PENTADECANES -------------------------------	C15	.0248	.0445	.0415
HEXADECANES -------------------------------	C16	.0268	.0512	.0475
HEPTADECANES -------------------------------	C17	.0192	.0390	.0360
OCTADECANES -------------------------------	C18	.0142	.0304	.0279
NONADECANES -------------------------------	C19	.0097	.0220	.0201
EICOSANES -------------------------------	C20	.0034	.0081	.0074
HENEICOSANES -------------------------------	C21	.0019	.0046	.0042
DOCOSANES -------------------------------	C22	.0016	.0043	.0039
TRICOSANES -------------------------------	C23	.0009	.0024	.0021
TETRACOSANES -------------------------------	C24	.0010	.0029	.0026
PENTACOSANES -------------------------------	C25	.0011	.0032	.0029
HEXACOSANES -------------------------------	C26	.0009	.0026	.0024
HEPTACOSANES -------------------------------	C27	.0007	.0022	.0019
OCTACOSANES -------------------------------	C28	.0004	.0014	.0013
NONACOSANES -------------------------------	C29	.0005	.0017	.0016
TRIACONTANES PLUS -------------------------------	C30+	.0007	.0023	.0021

AROMATICS

COMPONENT		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
BENZENES -------------------------------	C6	.0000	.0000	.0000
TOLUENE -------------------------------	C7	.0088	.0069	.0057
ETHYLBENZENE -------------------------------	C8	.0075	.0067	.0055
XYLENES -------------------------------	C8	.0250	.0225	.0186
1,2,4 TRIMETHYLBENZENE -------------------------------	C9	.0000	.0000	.0000

NAPHTHENES

COMPONENT		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
CYCLOPENTANE -------------------------------	CC5	.0096	.0057	.0055
METHYLCYCLOPENTANE -------------------------------	MCC5	.0231	.0164	.0157
CYCLOHEXANE -------------------------------	CC6	.0237	.0168	.0155
METHYLCYCLOHEXANE -------------------------------	MCC6	.0270	.0224	.0208

AGAT Engineering
BAY 1, 3650 - 21 ST. N.E.
CALGARY, ALTA. T2E 6V6
230-2477

CONTAINER IDENTIFICATION	RESERVOIR FLUID ANALYSIS	LABORATORY NUMBER
		40-5609

OPERATOR NAME

ROXY PETROLEUM LTD.

UNIQUE WELL IDENTIFIER	WELL NAME	ELEVATIONS
10-2-3-21 W1M	ROXY-AMDEX ET AL WHITEWATER	KB m / GRD m

FIELD OR AREA	POOL OR ZONE	NAME OF SAMPLER	COMPANY

TEST TYPE	NO	TEST RECOVERY

TEST INTERVAL OR PERFS

SAMPLING POINT

	SEPARATOR	TREATER	RESERVOIR	SOURCE	SAMPLED	RECEIVED
GAUGE PRESSURE kPa						
TEMPERATURE °C			33			

DATE SAMPLED (Y-M-D)	DATE RECEIVED (Y-M-D)	DATE REPORTED (Y-M-D)	ANALYST	OTHER INFORMATION
		83-10-06	S.V.	

COMP.	MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
H_2	.0139	.0032	.0029
CO_2	.0020	.0007	.0006
H_2S	.0002	.0001	.0001
C_1	.0007	.0001	.0002
C_2	.0046	.0011	.0023
C_3	.0305	.0111	.0159
iC_4	.0224	.0108	.0139
nC_4	.0509	.0245	.0304
iC_5	.0495	.0295	.0343
nC_5	.0419	.0250	.0287
C_6	.1615	.1149	.1199
C_7	.1261	.1031	.1039
C_8	.1169	.1077	.1043
C_9	.0417	.0441	.0443
C_{10}	.0596	.0699	.0690
C_{11}	.0467	.0602	.0587
C_{12+}	.2309	.3940	.3706
TOTAL	1.0000	1.0000	1.0000

PROPERTIES OF FRACTIONS (CALCULATED)

	MOLE FRACTION	MASS FRACTION	VOLUME FRACTION	DENSITY AT 15°C RELATIVE	DENSITY AT 15°C ABSOLUTE kg/m³	RELATIVE MOLECULAR MASS
C_{12+}	.2309	.3940	.3706	.7716	770.9	212.7
C_{7+}	.6219	.7790	.7508	.7529	752.2	152.9
C_{5+}	.8748	.9484	.9337	.7370	736.3	131.2

PROPERTIES OF TOTAL SAMPLE

DENSITY AT 15°C RELATIVE DETERMINED	DENSITY AT 15°C RELATIVE CALCULATED	ABSOLUTE kg/m³ DETERMINED	ABSOLUTE kg/m³ CALCULATED	RELATIVE MOLECULAR MASS DETERMINED	RELATIVE MOLECULAR MASS CALCULATED
	.7256	845.8	725.0		121.0

REMARKS

Calculated values may differ from measured values due to amount of non-paraffinic hydrocarbons in the sample.

File No.: 40-5609
Company: ROXY PETROLEUM LTD.
Well No.: FLASHED OIL FROM RESERVOIT

PROPERTIES OF C6+ FRACTION

COMPONENT		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
HEXANES	C6	.1086	.0782	.0852
HEPTANES	C7	.0848	.0701	.0738
OCTANES	C8	.0800	.0754	.0773
NONANESS	C9	.0417	.0441	.0443
DECANES	C10	.0596	.0699	.0690
UNDECANES	C11	.0467	.0602	.0587
DODECANES	C12	.0377	.0530	.0511
TRIDECANES	C13	.0592	.0804	.0766
TETRADECANES	C14	.0366	.0602	.0572
PENTADECANES	C15	.0260	.0455	.0427
HEXADECANES	C16	.0207	.0387	.0362
HEPTADECANES	C17	.0154	.0305	.0283
OCTADECANES	C18	.0116	.0244	.0226
NONADECANES	C19	.0082	.0182	.0167
EICOSANES	C20	.0031	.0073	.0067
HENEICOSANES	C21	.0021	.0051	.0047
DOCOSANES	C22	.0018	.0047	.0043
TRICOSANES	C23	.0009	.0025	.0023
TETRACOSANES	C24	.0010	.0029	.0026
PENTACOSANES	C25	.0012	.0035	.0031
HEXACOSANES	C26	.0010	.0029	.0026
HEPTACOSANES	C27	.0006	.0020	.0018
OCTACOSANES	C28	.0005	.0016	.0015
NONACOSANES	C29	.0007	.0022	.0020
TRIACONTANES PLUS	C30+	.0024	.0084	.0076

AROMATICS

COMPONENT		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
BENZENES	C6	.0000	.0000	.0000
TOLUENE	C7	.0099	.0076	.0063
ETHYLBENZENE	C8	.0084	.0073	.0061
XYLENES	C8	.0285	.0250	.0209
1,2,4 TRIMETHYLBENZENE	C9	.0000	.0000	.0000

NAPHTHENES

COMPONENT		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
CYCLOPENTANE	CC5	.0102	.0059	.0057
METHYLCYCLOPENTANE	MCC5	.0263	.0182	.0176
CYCLOHEXANE	CC6	.0266	.0185	.0171
METHYLCYCLOHEXANE	MCC6	.0314	.0254	.0238

BAY 1. 3650 - 21 ST. N.E.
CALGARY, ALTA. T2E 6V6
230-2477

CONTAINER IDENTIFICATION	STABILIZED LIQUID HYDROCARBON ANALYSIS	LABORATORY NUMBER
		40-5609

OPERATOR NAME

ROXY PETROLEUM LTD.

UNIQUE WELL IDENTIFIER	WELL NAME	ELEVATIONS
10-2-3-21 W1M	ROXY-AMDEX ET AL WHITEWATER	

FIELD OR AREA	POOL OR ZONE	NAME OF SAMPLER	COMPANY

TEST TYPE	NO	TEST RECOVERY

TEST INTERVAL OR PERFS

SAMPLING POINT

	SEPARATOR	TREATER	RESERVOIR	SOURCE	SAMPLED	RECEIVED
GAUGE PRESSURE kPa	0					
TEMPERATURE °C	18					

DATE SAMPLED (Y-M-D)	DATE RECEIVED (Y-M-D)	DATE REPORTED (Y-M-D)	ANALYST	OTHER INFORMATION
		83-10-04	S.V.	

COMP.	MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
N_2	.0000	.0000	.0000
CO_2	.0000	.0000	.0000
H_2S	.0000	.0000	.0000
C_1	.0000	.0000	.0000
C_2	.0020	.0005	.0010
C_3	.0341	.0124	.0176
iC_4	.0278	.0133	.0170
nC_4	.0645	.0308	.0381
iC_5	.0630	.0374	.0432
nC_5	.0524	.0311	.0356
C_6	.1529	.1081	.1126
C_7	.1161	.0943	.0948
C_8	.1076	.0986	.0951
C_9	.0389	.0409	.0409
C_{10}	.0557	.0650	.0639
C_{11}	.0436	.0562	.0546
C_{12+}	.2412	.4114	.3856
TOTAL	1.0000	1.0000	1.0000

PROPERTIES OF FRACTIONS (CALCULATED)

	MOLE FRACTION	MASS FRACTION	VOLUME FRACTION	DENSITY AT 15°C RELATIVE	ABSOLUTE kg•m³	RELATIVE MOLECULAR MASS
C_{12+}	.2412	.4114	.3856	.7721	771.4	213.7
C_{7+}	.6033	.7664	.7349	.7543	753.6	156.1
C_{6+}	.8716	.9430	.9263	.7362	735.6	131.7

PROPERTIES OF TOTAL SAMPLE

DENSITY AT 15°C				RELATIVE MOLECULAR MASS	
RELATIVE		ABSOLUTE kg•m³			
DETERMINED	CALCULATED	DETERMINED	CALCULATED	DETERMINED	CALCULATED
	.7231	861.6	722.5		121.7

REMARKS:

Calculated values may differ from measured
values due to amount of non-paraffinic
hydrocarbons in the sample.

File No.: 40-5609
Company: ROXY PETROLEUM LTD.
Well No.: ROXY - SEPARATOR OIL

PROPERTIES OF C6+ FRACTION
============================

COMPONENT		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
HEXANES	C6	.1038	.0743	.0808
HEPTANES	C7	.0785	.0645	.0677
OCTANES	C8	.0736	.0689	.0705
NONANESS	C9	.0389	.0409	.0409
DECANES	C10	.0557	.0650	.0639
UNDECANES	C11	.0438	.0562	.0546
DODECANES	C12	.0356	.0497	.0478
TRIDECANES	C13	.0573	.0769	.0735
TETRADECANES	C14	.0355	.0577	.0546
PENTADECANES	C15	.0260	.0453	.0424
HEXADECANES	C16	.0281	.0521	.0485
HEPTADECANES	C17	.0201	.0397	.0368
OCTADECANES	C18	.0148	.0310	.0285
NONADECANES	C19	.0102	.0225	.0205
EICOSANES	C20	.0036	.0083	.0076
HENEICOSANES	C21	.0019	.0047	.0043
DOCOSANES	C22	.0017	.0043	.0040
TRICOSANES	C23	.0009	.0024	.0022
TETRACOSANES	C24	.0011	.0029	.0026
PENTACOSANES	C25	.0011	.0033	.0029
HEXACOSANES	C26	.0009	.0027	.0024
HEPTACOSANES	C27	.0007	.0022	.0020
OCTACOSANES	C28	.0005	.0015	.0013
NONACOSANES	C29	.0005	.0018	.0016
TRIACONTANES PLUS	C30+	.0007	.0024	.0021

AROMATICS

		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
BENZENES	C6	.0000	.0000	.0000
TOLUENE	C7	.0093	.0070	.0058
ETHYLBENZENE	C8	.0078	.0068	.0056
XYLENES	C8	.0262	.0229	.0190
1,2,4 TRIMETHYLBENZENE	C9	.0000	.0000	.0000

NAPHTHENES

		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
CYCLOPENTANE	CC5	.0101	.0058	.0056
METHYLCYCLOPENTANE	MCC5	.0243	.0167	.0160
CYCLOHEXANE	CC6	.0248	.0171	.0158
METHYLCYCLOHEXANE	MCC6	.0283	.0228	.0213

CONTAINER IDENTIFICATION	ABANDONMENT LIQUID HYDROCARBON ANALYSIS	LABORATORY NUMBER
		40-5609

OPERATOR NAME

ROXY PETROLEUM LTD.

UNIQUE WELL IDENTIFIER	WELL NAME	ELEVATIONS	
		KB m	GND m
10-2-3-21 W1M	ROXY-AMDEX ET AL WHITEWATER		

FIELD OR AREA	POOL OR ZONE	NAME OF SAMPLER	COMPANY

TEST TYPE	NO	TEST RECOVERY

TEST INTERVAL OR PERFS

SAMPLING POINT

	SEPARATOR	TREATER	RESERVOIR	SOURCE	SAMPLED	RECEIVED
GAUGE PRESSURE kPa			0			
TEMPERATURE °C			33			

DATE SAMPLED (Y-M-D)	DATE RECEIVED (Y-M-D)	DATE REPORTED (Y-M-D)	ANALYST	OTHER INFORMATION
		83-10-11	S.V.	

COMP.	MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
N_2	.0002	.0000	.0000
CO_2	.0000	.0000	.0000
H_2S	.0000	.0000	.0000
C_1	.0000	.0000	.0000
C_2	.0005	.0001	.0002
C_3	.0170	.0049	.0072
iC_4	.0170	.0064	.0085
nC_4	.0410	.0155	.0199
iC_5	.0435	.0205	.0245
nC_5	.0373	.0175	.0208
C_6	.1426	.0799	.0860
C_7	.1113	.0717	.0745
C_8	.0990	.0719	.0717
C_9	.0360	.0390	.0311
C_{10}	.0522	.0483	.0491
C_{11}	.0412	.0419	.0420
C_{12+}	.3612	.5914	.5645
TOTAL	1.0000	1.0000	1.0000

PROPERTIES OF FRACTIONS (CALCULATED)

	MOLE FRACTION	MASS FRACTION	VOLUME FRACTION	DENSITY AT 15°C		RELATIVE MOLECULAR MASS
				RELATIVE	ABSOLUTE kg/m³	
C_{12+}	.3612	.5914	.5645	.7838	783.1	255.5
C_{7+}	.7009	.8552	.8329	.7680	767.4	188.6
C_{5+}	.9243	.9731	.9642	.7549	754.3	161.5

PROPERTIES OF TOTAL SAMPLE

	DENSITY AT 15°C				RELATIVE MOLECULAR MASS	
RELATIVE		ABSOLUTE kg/m³				
DETERMINED	CALCULATED	DETERMINED	CALCULATED		DETERMINED	CALCULATED
	.7481	.8638	747.4			153.4

REMARKS:

Calculated values may differ from measured
values due to amount of non-paraffinic
hydrocarbons in the sample.

PROPERTIES OF C6+ FRACTION
=========================

COMPONENT		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
HEXANES	C6	.0949	.0536	.0606
HEPTANES	C7	.0744	.0485	.0526
OCTANES	C8	.0671	.0498	.0526
NONANES	C9	.0360	.0300	.0311
DECANES	C10	.0522	.0483	.0491
UNDECANES	C11	.0412	.0419	.0420
DODECANES	C12	.0334	.0370	.0366
TRIDECANES	C13	.0531	.0572	.0565
TETRADECANES	C14	.0332	.0429	.0420
PENTADECANES	C15	.0247	.0341	.0330
HEXADECANES	C16	.0262	.0386	.0372
HEPTADECANES	C17	.0209	.0327	.0313
OCTADECANES	C18	.0201	.0333	.0316
NONADECANES	C19	.0210	.0367	.0347
EICOSANES	C20	.0133	.0245	.0232
HENEICOSANES	C21	.0212	.0410	.0387
DOCOSANES	C22	.0165	.0333	.0313
TRICOSANES	C23	.0154	.0325	.0306
TETRACOSANES	C24	.0155	.0341	.0319
PENTACOSANES	C25	.0143	.0329	.0307
HEXACOSANES	C26	.0128	.0305	.0285
HEPTACOSANES	C27	.0109	.0271	.0253
OCTACOSANES	C28	.0056	.0145	.0134
NONACOSANES	C29	.0008	.0021	.0019
TRIACONTANES PLUS	C30+	.0023	.0064	.0059

AROMATICS

BENZENES	C6	.0000	.0000	.0000
TOLUENE	C7	.0089	.0053	.0046
ETHYLBENZENE	C8	.0073	.0051	.0044
XYLENES	C8	.0246	.0170	.0147
1,2,4 TRIMETHYLBENZENE	C9	.0000	.0000	.0000

NAPHTHENES

CYCLOPENTANE	CC5	.0086	.0039	.0039
METHYLCYCLOPENTANE	MCC5	.0237	.0130	.0129
CYCLOHEXANE	CC6	.0240	.0131	.0125
METHYLCYCLOHEXANE	MCC6	.0280	.0179	.0173

BAY 1, 3650 - 21 ST. N.E.
CALGARY, ALTA. T2E 6V6
230-2477

CONTAINER IDENTIFICATION	WELLSTEAM FLUID ANALYSIS	LABORATORY NUMBER
		40-5609

OPERATOR NAME

ROXY PETROLEUM LTD.

UNIQUE WELL IDENTIFIER	WELL NAME	ELEVATIONS
10-2-3-21 W1M	ROXY-ANDEX ET AL WHITEWATER	KB m / GRD m

FIELD OR AREA	POOL OR ZONE	NAME OF SAMPLER	COMPANY

TEST TYPE	NO	TEST RECOVERY

TEST INTERVAL OR PERFS

SAMPLING POINT

MATHEMATICAL RECOMBINATION

	SEPARATOR	TREATER	RESERVOIR	SOURCE	SAMPLED	RECEIVED
GAUGE PRESSURE kPa						
TEMPERATURE °C			33			

DATE SAMPLED (Y-M-D)	DATE RECEIVED (Y-M-D)	DATE REPORTED (Y-M-D)	ANALYST	OTHER INFORMATION
		83-10-04	S.V.	

COMP.	MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
N_2	.0184	.0044	.0039
CO_2	.0025	.0009	.0008
H_2S	.0002	.0001	.0001
C_1	.0006	.0001	.0002
C_2	.0059	.0015	.0030
C_3	.0399	.0149	.0212
iC_4	.0284	.0140	.0179
nC_4	.0641	.0316	.0390
iC_5	.0611	.0374	.0431
nC_5	.0607	.0372	.0424
C_6	.1453	.1061	.1101
C_7	.1103	.0925	.0927
C_8	.1022	.0967	.0929
C_9	.0369	.0401	.0400
C_{10}	.0529	.0637	.0625
C_{11}	.0416	.0551	.0533
C_{12+}	.2290	.4037	.3769
TOTAL	1.0000	1.0000	1.0000

PROPERTIES OF FRACTIONS (CALCULATED)

	MOLE FRACTION	MASS FRACTION	VOLUME FRACTION	DENSITY AT 15°C RELATIVE	DENSITY AT 15°C ABSOLUTE kg·m⁻³	RELATIVE MOLECULAR MASS
C_{12+}	.2290	.4037	.3769	.7721	771.4	213.7
C_{7+}	.5729	.7518	.7183	.7543	753.6	156.1
C_{6+}	.8400	.9325	.9139	.7352	734.6	130.8

PROPERTIES OF TOTAL SAMPLE

DENSITY AT 15°C RELATIVE		DENSITY AT 15°C ABSOLUTE kg·m⁻³		RELATIVE MOLECULAR MASS	
DETERMINED	CALCULATED	DETERMINED	CALCULATED	DETERMINED	CALCULATED
	.7206	.8638	720.0		117.8

REMARKS

Calculated values may differ from measured
values due to amount of non-paraffinic
hydrocarbons in the sample

File No.: 40-5609
Company: ROXY PETROLEUM LTD.
Well No.: ROXY - SEPARATOR OIL

PROPERTIES OF C6+ FRACTION
=========================

COMPONENT		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
HEXANES	C6	.0987	.0729	.0790
HEPTANES	C7	.0746	.0632	.0662
OCTANES	C8	.0699	.0676	.0688
NONANESS	C9	.0369	.0401	.0400
DECANES	C10	.0529	.0637	.0625
UNDECANES	C11	.0416	.0551	.0533
DODECANES	C12	.0338	.0488	.0467
TRIDECANES	C13	.0544	.0757	.0716
TETRADECANES	C14	.0337	.0566	.0534
PENTADECANES	C15	.0247	.0445	.0415
HEXADECANES	C16	.0266	.0511	.0474
HEPTADECANES	C17	.0191	.0390	.0360
OCTADECANES	C18	.0141	.0304	.0278
NONADECANES	C19	.0097	.0220	.0201
EICOSANES	C20	.0034	.0081	.0074
HENEICOSANES	C21	.0018	.0046	.0042
DOCOSANES	C22	.0016	.0043	.0039
TRICOSANES	C23	.0009	.0023	.0021
TETRACOSANES	C24	.0010	.0029	.0026
PENTACOSANES	C25	.0011	.0032	.0029
HEXACOSANES	C26	.0008	.0026	.0024
HEPTACOSANES	C27	.0007	.0022	.0019
OCTACOSANES	C28	.0004	.0014	.0013
NONACOSANES	C29	.0005	.0017	.0016
TRIACONTANES PLUS	C30+	.0007	.0023	.0021

AROMATICS

COMPONENT		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
BENZENES	C6	.0000	.0000	.0000
TOLUENE	C7	.0088	.0069	.0057
ETHYLBENZENE	C8	.0074	.0067	.0055
XYLENES	C8	.0249	.0224	.0186
1,2,4 TRIMETHYLBENZENE	C9	.0000	.0000	.0000

NAPHTHENES

COMPONENT		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
CYCLOPENTANE	CC5	.0096	.0057	.0054
METHYLCYCLOPENTANE	MCC5	.0230	.0164	.0157
CYCLOHEXANE	CC6	.0236	.0168	.0154
METHYLCYCLOHEXANE	MCC6	.0269	.0224	.0208

GRAPHS

Figure 1:   Pressure-Volume Relationship of Reservoir Fluid at 33°C

Saturation Pressure
1193 kPa absolute

Pressure, kPa absolute

(Y-axis: Relative Volume (V/Vsat); right axis: Y-Function (Smoothed))

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BAY 1, 3650 - 21 ST. N.E.
CALGARY, ALTA. T2E 6V6
230-2477

Figure 2: Differential Relative Oil Volume At 33^OC (Experimental Data)

Relative Oil Volume, Bod, m^3/m^3

Pressure, kPa absolute

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230-2477

Figure 3:   Differential Relative Total Volume At $33^{O}C$ (Experimental Data)

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Figure 4: Gas In Solution At 33°C

Gas in Solution, R_{sd}, (m^3API/m^3STO)

Pressure, kPa absolute

File # _____ 40-5609 _____

Company _____ Roxy Petroleum Ltd. _____

Well _____ #10-2-3-21W1M _____

Figure 5:   Oil Viscosity at 33°C
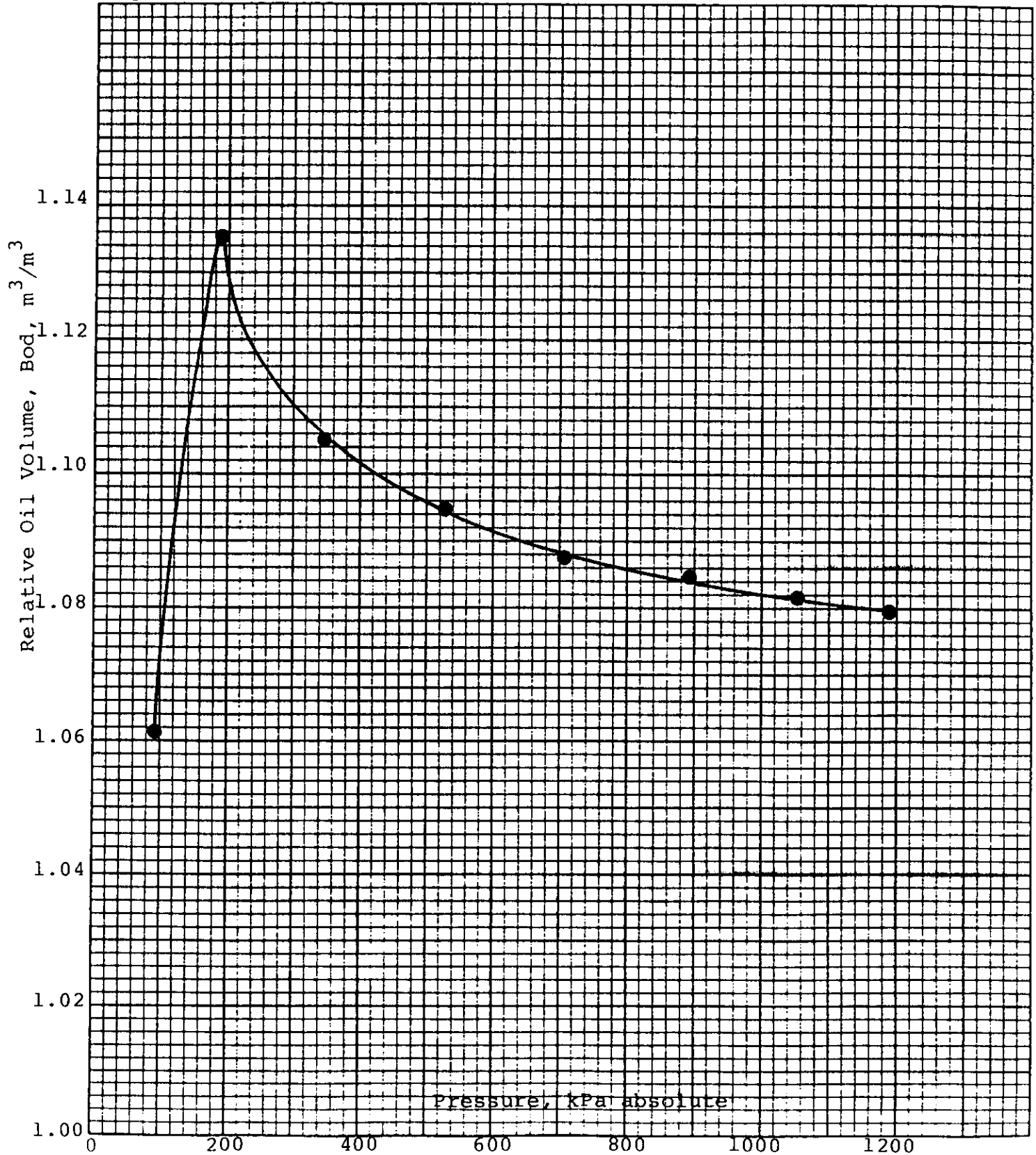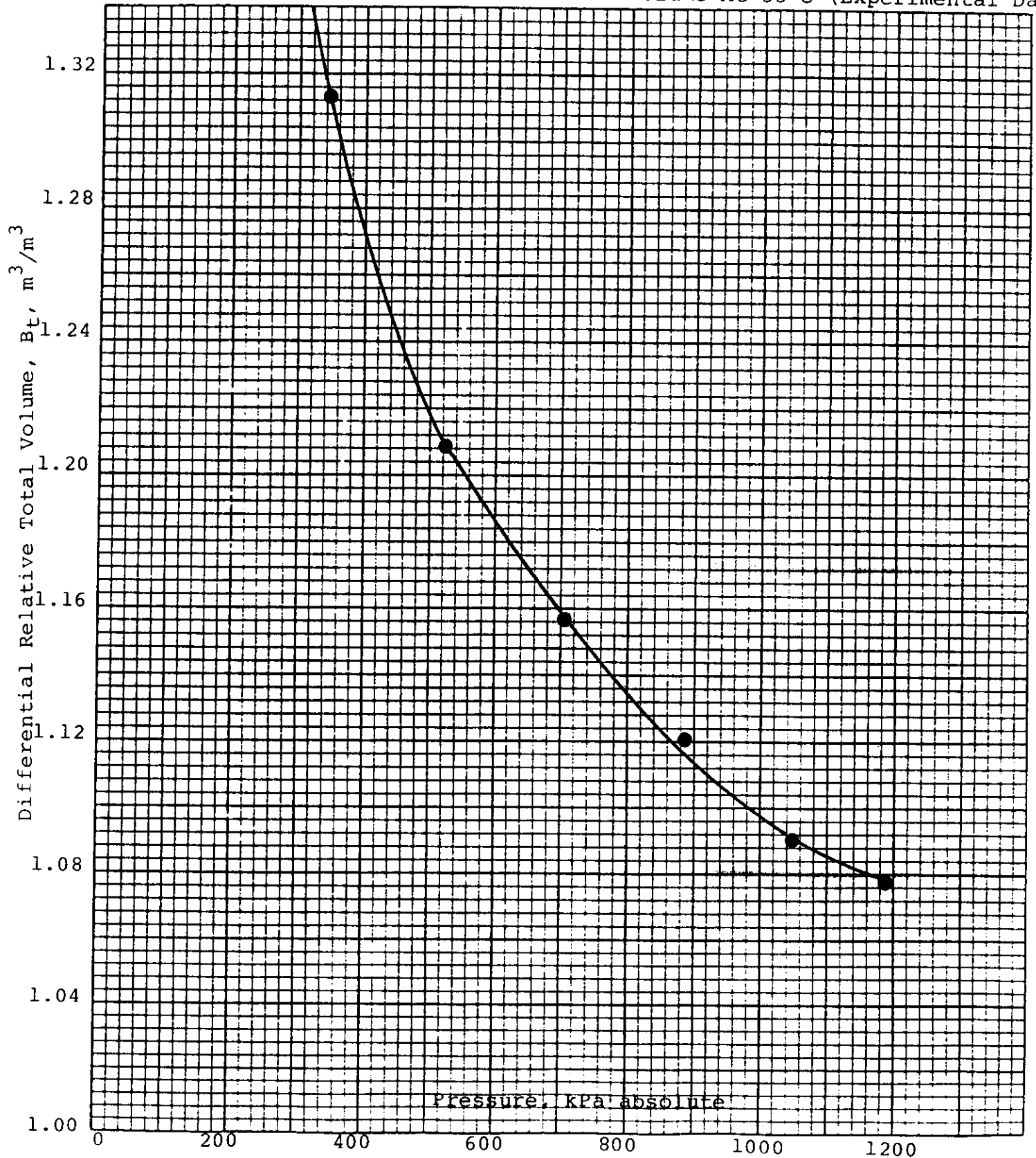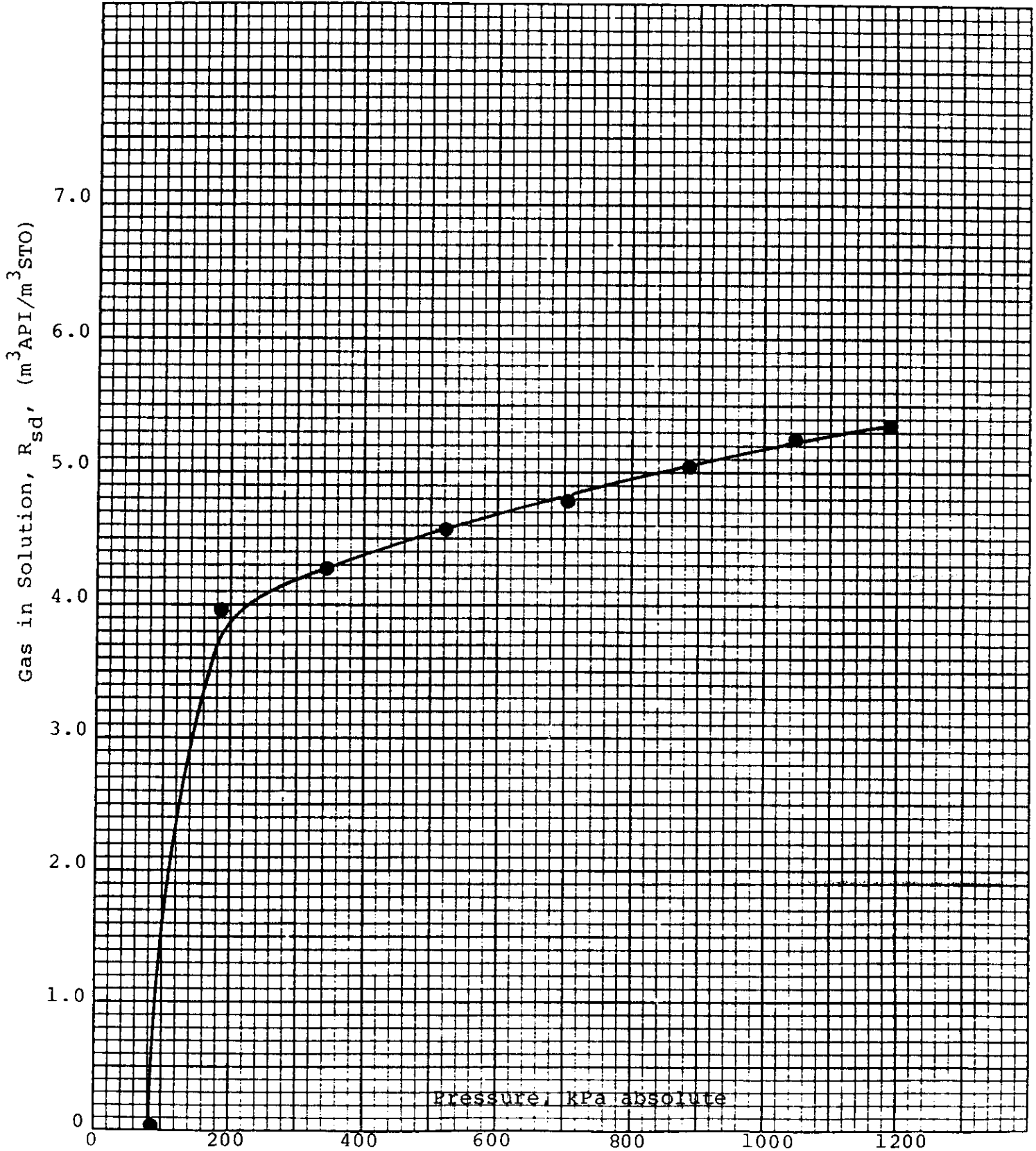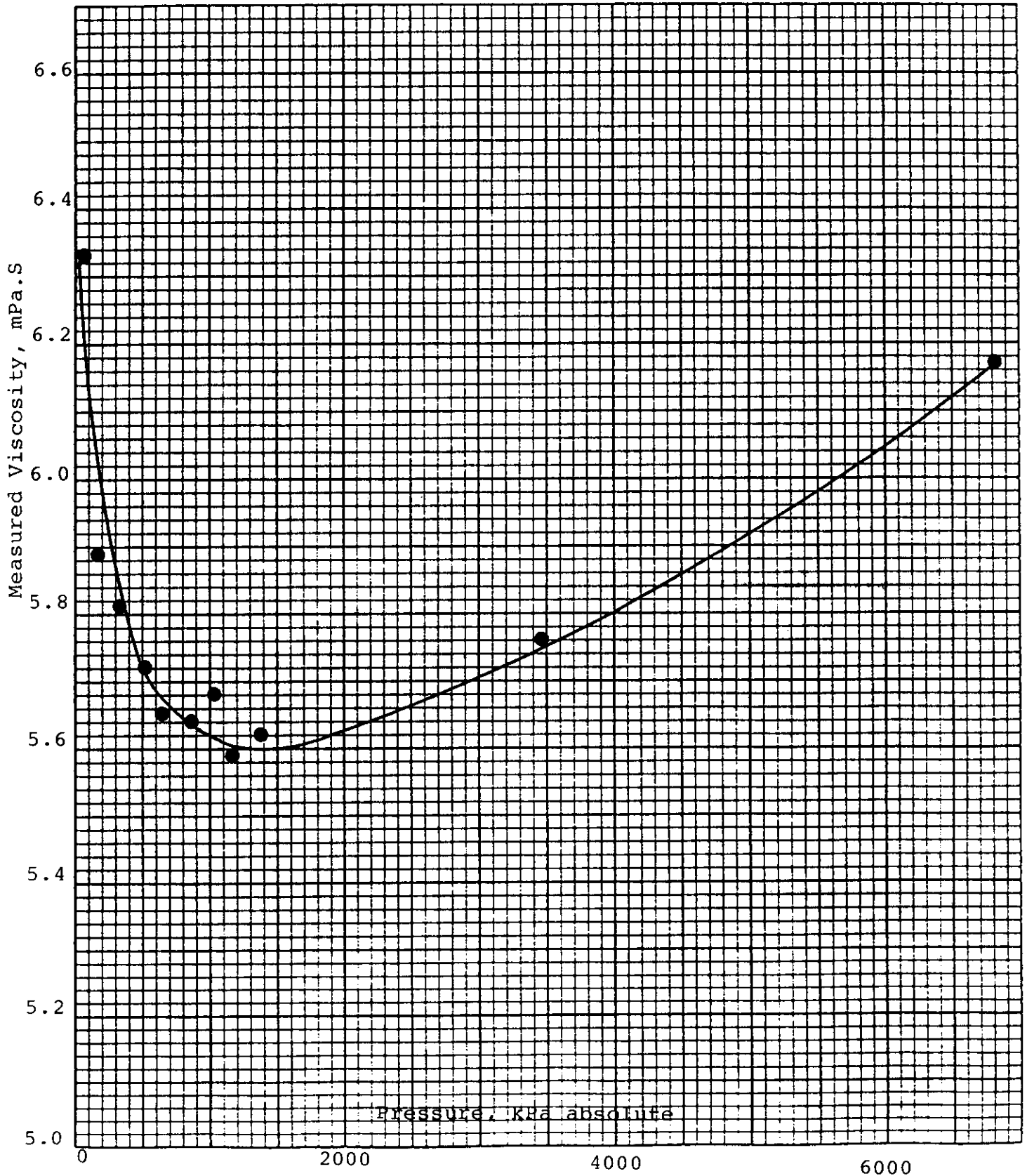
AGAT Engineering

BAY 1. 3650 - 21 ST. N.E.
CALGARY, ALTA. T2E 6V6
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File # _____40-5609_____
Company ___Roxy Petroleum Ltd.___
Well ___#10-2-3-21W1M___

Figure 6: Oil Density At 33°C
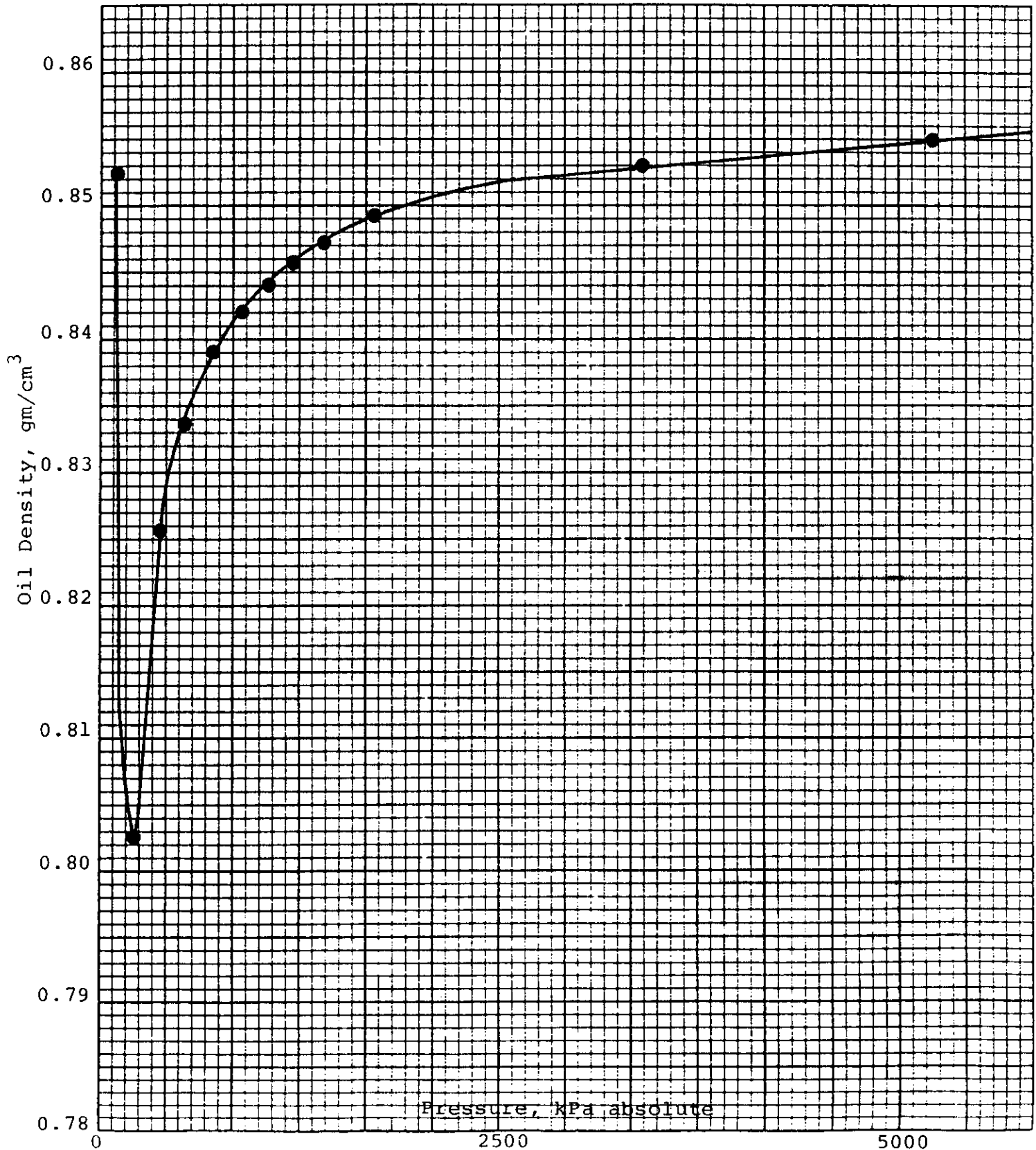
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CALGARY, ALTA. T2E 6V6
230-2477

Company ___Roxy Petroleum Ltd.___

Well ___#10-2-3-21W1M___

Figure 7:   Gas Compressibility (Z) Factor at 33°C

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CALGARY, ALTA. T2E 6V6
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Figure 8: Gas Expansion Factor at 33°C (Experimental Data)

Gas Expansion Factor, $1/B_g$ vs Pressure, kPa absolute
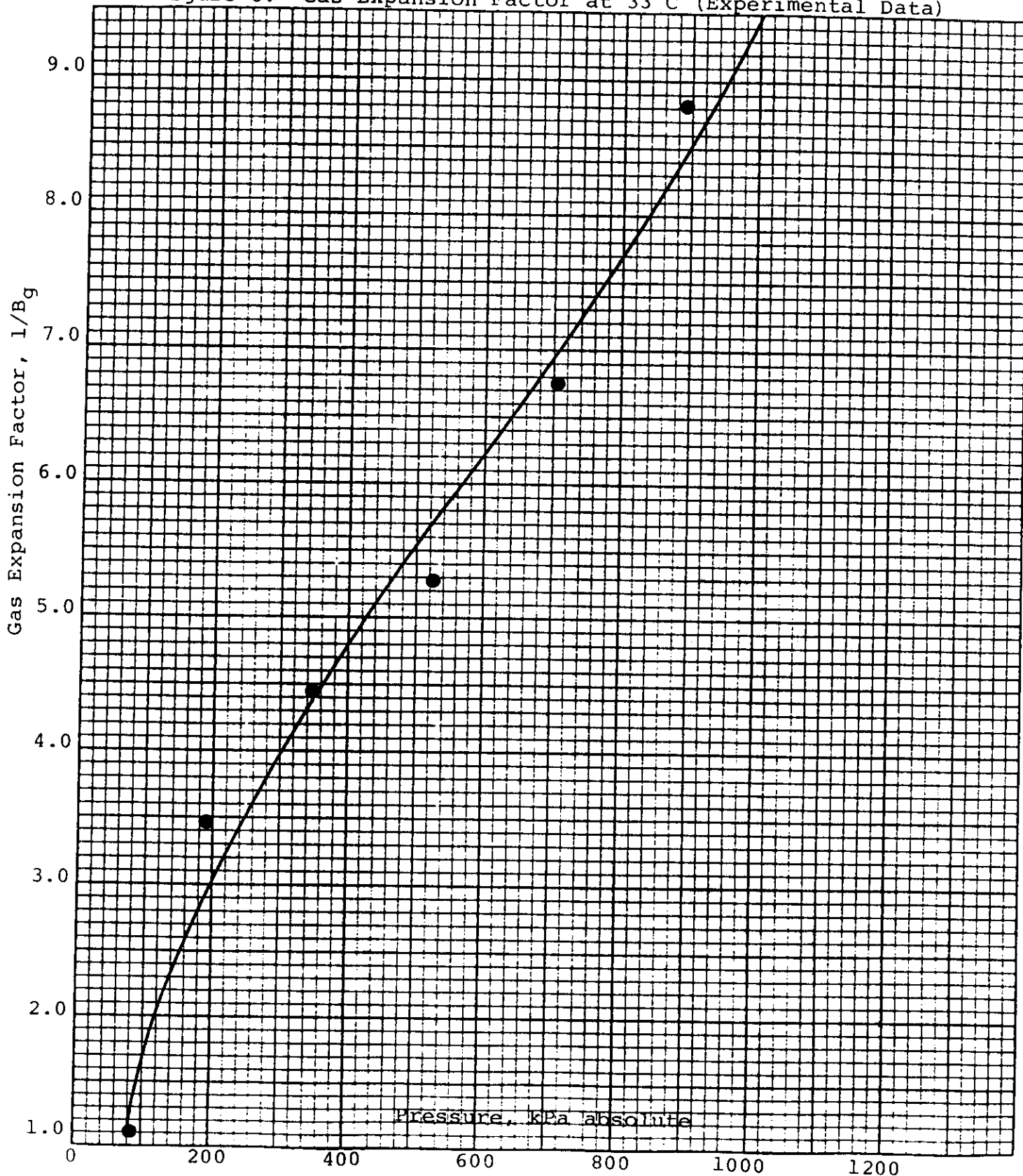
APPENDIX

Page   30
File No.   40-5609
Company: Roxy Petroleum Ltd.
Well No: Roxy-Andex et al Whitewater 10-2-3-21W1M

Formation
Province   Manitoba
Country

PHASE BEHAVIOR STUDIES INFORMATION SHEET

RESERVOIR CHARACTERISTICS

Type of Formation _____

Discovery Well and Date on Production _____

| Original Reservoir Pressure (Gauge) | kPa at | m subsea |

Original Separator Pressure (gauge) and Temperature _____ kPa at _____ °C

   Sep. Gas Flow Rate at 101.325 kPa (abs.) and 15°C _____ m^3/d

   Stock Tank Oil Flow Rate at 15°C _____ m^3/d

   Separator Gas/Stock Tank oil Ratio _____ {1}

Original Gas-Oil Interface _____ m subsea

Original Oil-Water Interface _____ m subsea

WELL CHARACTERISTICS

Elevation _____ 535.8 _____ m

Total Depth _____ 850.65 _____ m KB

Producing Interval _____ 709.0 – 807.0;
813.5 – 815.0 _____ m KB

Tubing Size and Depth _____ 60.3 mm at _____ 821.00 _____ m KB

Casing Size and Depth _____ 114 mm at _____ 863.50 _____ m KB

Date Well on Production _____ July 23, 1983

| Last Shut-in Bottom Hole Pressure (gauge) | kPa at | m CF |

   Date and time of day _____

   Type of Pressure Survey _____

   Pressure Survey By _____

   Date Well Shut-in and time of day _____

Last Shut-in Bottom Hole Temperature   33 °C at   m CF

Date and time of day   _____

Temperature obtained by   _____

Test Separator Conditions; Date and Time of Day   August 18, 1983 (10.30 hrs)

1st Stage Separator Pressure (gauge) and Temperature 300 kPa and ambient °C

1st Stage Separator Gas Flow Rate @ 101.325 kPa (abs.) and 15°C
_____ m³/d

1st Stage Separator Liquid Flow Rate at Separator Conditions   15.6
_____ m³/d

1st Stage Separator Gas/Separator Liquid Ratio _____ m³API/m³

Stock Tank Oil Flow Rate at 15°C   _____ m³/d

Water Cut   66   %
_____

1st Stage Separator Gas/Stock Tank Oil Ratio   _____ m³API/m³

2nd Stage Separator Pressure (gauge) and Temperature ____kPa and _____ °C

2nd Stage Separator Gas Flow Rate @ 101.325 kPa (abs.) and 15°C
_____ m³/d

2nd Stage Separator Liquid Flow Rate @ Separator Conditions
_____ m³/d

2nd Stage Separator Gas/Separator Liquid Ratio _____ m³API/m³

2nd Stage Separator Gas/Stock Tank Oil Ratio   _____ m³API/m³

3rd Stage Separator Pressure (gauge) and Temperature ____kPa and _____ °C

3rd Stage Separator Gas Flow Rate @ 101.325 kPa (abs.) and 15°C
_____ m³/d

3rd Stage Separator Liquid Flow Rate @ Separator Conditions
_____ m³/d

3rd Stage Separator Gas/Separator Liquid Ratio _____ m³API/m³

3rd Stage Separator Gas/Stock Tank Oil Ratio   _____ m³API/m³

REMARKS: