



CORE LABORATORIES - CANADA LTD.
Petroleum Reservoir Engineering
CALGARY ALBERTA

9211-P28-1-6
Utt.



GAS ANALYSIS

DST Chamber #176		70380-86-263				
CONTAINER IDENTITY		LABORATORY NUMBER				
Petro-Canada Inc.		1 of 8				
OPERATOR		PAGE				
66° 56' 11.60" NL	PCI Canterra Tweed Lake A-67	397.10	390.90			
125° 56' 18.88" WL	WELL OR SAMPLE LOCATION NAME	KB ELEV., m	GRD. ELEV., m			
Northwest Territories	Basal Sand MT Clark	Lynes United Services				
FIELD OR AREA	POOL OR ZONE	SAMPLER				
DST #1	TOOL: 200 mL Muddy Water, 100 mL Condensate					
TEST TYPE & NUMBER	TEST RECOVERY					
DST Chamber #176	@ °C					
POINT OF SAMPLE	AMOUNT & TYPE OF CUSHION		MUD RESISTIVITY			
PUMPING	FLOWING	GAS LIFT	SWAB			
1290 - 1301	WATER	m ³ /d	OIL	m ³ /d	GAS	m ³ /d
TEST INTERVALS OR PERFS., m	@ °C					
SEPARATOR	RESERVOIR	CONTAINER WHEN SAMPLED	CONTAINER WHEN RECEIVED	SEPARATOR		
PRESSURES, kPa (gauge)			TEMPERATURES, °C			
1985 12 17	1986 02 04	1986 02 04	RH	REMARKS		
DATE SAMPLED (Y/M/D)	DATE RECEIVED(Y/M/D)	DATE ANALYZED (Y/M/D)	ANALYST			

COMPONENT	MOLE FRACTION AIR FREE AS RECEIVED	MOLE FRACTION AIR FREE ACID GAS FREE	mL/m ³ AIR FREE AS RECEIVED
H ₂	0.0001		
He	0.0070		
N ₂	0.2064		
CO ₂	TRACE		
H ₂ S	0.0000		
C ₁	0.6615		
C ₂	0.0672		
C ₃	0.0265		97.5
iC ₄	0.0070		30.6
C ₄	0.0095		40.0
iC ₅	0.0054		26.4
C ₅	0.0035		16.9
C ₆	0.0045		24.7
C ₇₊	0.0014		9.6
TOTAL	1.0000		245.7
		C ₅₊	77.6

CALCULATED GROSS HEATING VALUE
MJ/m³ @ 15° C & 101.325 kPa (abs.)

36.37	36.34
MOISTURE FREE	MOISTURE & ACID GAS FREE

CALCULATED VAPOUR PRESSURE
kPa (abs.) @ 37.8° C

87.5
PENTANES PLUS

CALCULATED TOTAL SAMPLE PROPERTIES (AIR=1) @ 15° C & 101.325 kPa

0.920	0.751	21.7
DENSITY	RELATIVE DENSITY	RELATIVE MOLECULAR MASS

CALCULATED PSEUDOCRITICAL PROPERTIES

4298.3	196.6		
kPa (abs.)	K	kPa (abs.)	K
pPc	pTc	pPc	pTc

REMARKS

MICROFILMED
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CORE LABORATORIES-CANADA LTD.

COMPANY Petro-Canada Inc.
 LOCATION PCI Canterra Tweed Lake A-67
 SAMPLED FROM Condensate recovered from DST Chamber #176

PAGE 2 of 8
 FILE 70380-86-263
 DATE 1986 02 06

Analysis to C30+

<u>Boiling Point</u> <u>Range (C)</u>	<u>Component</u>	<u>Carbon Number</u>	<u>Mole</u> <u>Fraction</u>	<u>Mass</u> <u>Fraction</u>
-161.7	Methane	C1	0.0000	0.0000
- 88.9	Ethane	C2	0.0005	0.0001
- 42.2	Propane	C3	0.0037	0.0015
- 11.7	Iso Butane	C4	0.0057	0.0031
- 0.6	Normal Butane	C4	0.0154	0.0083
27.8	Iso Pentane	C5	0.0338	0.0227
36.1	Normal Pentane	C5	0.0326	0.0219
36.1- 68.9	Hexanes	C6	0.1429	0.1146
68.9- 98.3	Heptanes	C7	0.2005	0.1870
98.3-125.6	Octanes	C8	0.1944	0.2066
125.6-150.6	Nonanes	C9	0.0899	0.1074
150.6-173.9	Decanes	C10	0.0743	0.0984
173.9-196.1	Undecanes	C11	0.0358	0.0521
196.1-215.0	Dodecanes	C12	0.0210	0.0333
215.0-235.0	Tridecanes	C13	0.0027	0.0046
235.0-252.2	Tetradecanes	C14	0.0015	0.0029
252.2-270.6	Pentadecanes	C15	0.0010	0.0021
270.6-287.8	Hexadecanes	C16	0.0008	0.0016
287.8-302.8	Heptadecanes	C17	0.0004	0.0008
302.8-317.2	Octadecanes	C18	0.0002	0.0005
317.2-330.0	Nonadecanes	C19	0.0001	0.0003
330.0-344.4	Eicosanes	C20	0.0000	0.0001
344.4-357.2	Heneicosanes	C21	0.0000	0.0000
357.2-369.4	Docosanes	C22	0.0000	0.0000
369.4-380.0	Tricosanes	C23	0.0000	0.0000
380.0-391.1	Tetracosanes	C24	0.0000	0.0000
391.1-401.7	Pentacosanes	C25	0.0000	0.0000
401.7-412.2	Hexacosanes	C26	0.0000	0.0000
412.2-422.2	Heptacosanes	C27	0.0000	0.0000
422.2-431.7	Octacosanes	C28	0.0000	0.0000
431.7-441.1	Nonacosanes	C29	0.0000	0.0000
441.1 PLUS	triacontanes Plus	C30+	0.0000	0.0000

AROMATICS

80.0	Benzene	C6H6	0.0015	0.0011
110.6	Toluene	C7H8	0.0091	0.0078
136.1-138.9	Ethylbenzene, p + m-Xylene	C8H10	0.0422	0.0417
144.4	o-Xylene	C8H10	0.0094	0.0093
168.9	1,2,4 Trimethylbenzene	C9H12	0.0059	0.0066

NAPHTHENES

48.9	Cyclopentane	C5H10	0.0047	0.0031
72.2	Methylcyclopentane	C6H12	0.0145	0.0114
81.1	Cyclohexane	C6H12	0.0128	0.0101
101.1	Methylcyclohexane	C7H14	0.0427	0.0390
	TOTAL		1.0000	1.0000

The above hexanes plus values are based upon a measured mass fraction and a calculated mole fraction, and assume a total hydrocarbon recovery from the chromatographic system.



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GAS ANALYSIS

9211-P98-1-6

<u>DST Chamber #302</u> CONTAINER IDENTITY		<u>70380-86-263</u> LABORATORY NUMBER	
<u>Petro-Canada Inc.</u> OPERATOR		<u>3 of 8</u> PAGE	
<u>66° 56' 11.60" NL</u> LOCATION	<u>PCI Canterra Tweed Lake A-67</u> WELL OR SAMPLE LOCATION NAME	<u>397.10</u> KB ELEV., m	<u>390.90</u> GRD. ELEV., m
<u>125° 56' 18.88" WL</u> FIELD OR AREA	<u>Basal Sand MT Clark</u> POOL OR ZONE	<u>Lynes United Services</u> SAMPLER	
<u>DST #1</u> TEST TYPE & NUMBER			
<u>TOOL: 250 mL Muddy Water, 25 mL Condensate</u> TEST RECOVERY			
<u>DST Chamber #302</u>		@ °C	
POINT OF SAMPLE		AMOUNT & TYPE OF CUSHION	
<u>PUMPING</u> <u>FLOWING</u>		<u>GAS LIFT</u> <u>SWAB</u>	
<u>1290 - 1301</u> TEST INTERVALS OR PERFS., m		<u>500</u> @ <u>21</u> °C	
SEPARATOR		CONTAINER WHEN SAMPLED	CONTAINER WHEN RECEIVED
RESERVOIR		SEPARATOR	
PRESSURES, kPa (gauge)		TEMPERATURES, °C	
<u>1985 12 17</u> DATE SAMPLED (Y/M/D)	<u>1986 02 04</u> DATE RECEIVED(Y/M/D)	<u>1986 02 04</u> DATE ANALYZED (Y/M/D)	<u>RH</u> ANALYST
REMARKS			

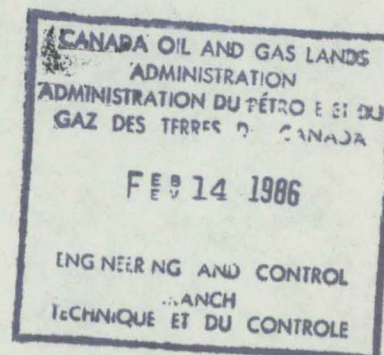
COMPONENT	MOLE FRACTION AIR FREE AS RECEIVED	MOLE FRACTION AIR FREE ACID GAS FREE	mL/m ³ AIR FREE AS RECEIVED
H ₂	0.0004		
He	0.0053		
N ₂	0.1650		
CO ₂	TRACE		
H ₂ S	0.0000		
C ₁	0.6386		
C ₂	0.0903		
C ₃	0.0538		197.9
iC ₄	0.0132		57.7
C ₄	0.0158		66.5
iC ₅	0.0070		34.2
C ₅	0.0041		19.8
C ₆	0.0049		26.9
C ₇ +	0.0016		10.9
TOTAL	1.0000		413.9
		C ₅ +	91.8

CALCULATED GROSS HEATING VALUE		CALCULATED VAPOUR PRESSURE
MJ/m ³ @ 15° C & 101.325 kPa (abs.)		kPa (abs.) @ 37.8° C
<u>41.60</u>	<u>41.59</u>	<u>90.9</u>
MOISTURE FREE	MOISTURE & ACID GAS FREE	PENTANES PLUS

CALCULATED TOTAL SAMPLE PROPERTIES (AIR=1) @ 15° C & 101.325 kPa		
MOISTURE FREE AS SAMPLED		
<u>0.975</u>	<u>0.796</u>	<u>23.0</u>
DENSITY kg/m ³	RELATIVE DENSITY	RELATIVE MOLECULAR MASS

CALCULATED PSEUDOCRITICAL PROPERTIES			
AS SAMPLED		ACID GAS FREE	
<u>4336.5</u>	<u>210.7</u>	<u> </u>	<u> </u>
kPa (abs.)	K	kPa (abs.)	K
pPc	pTc	pPc	pTc

REMARKS





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DST Chamber #302 CONTAINER IDENTITY		70380-86-263 LABORATORY NUMBER	
Petro-Canada Inc. OPERATOR		4 of 8 PAGE	
66° 56' 11.60" NL 125° 56' 18.88 WL LOCATION	PCI Canterra Tweed Lake A-67 WELL OR SAMPLE LOCATION NAME	397.10 KB ELEV.	390.90 GRD. ELEV.
Northwest Territories FIELD OR AREA	Basal Sand MT Clark POOL OR ZONE	Lynes United Services SAMPLER	
DST #1 TEST TYPE & NO.	TOOL: 250 mL Muddy Water, 25 mL Condensate TEST RECOVERY		
DST Chamber #302			
1290 - 1301 TEST INTERVALS OR PERFS.	POINT OF SAMPLE	AMT. & TYPE CUSHION	MUD RESISTIVITY @ °C
	PUMPING FLOWING	GAS LIFT SWAB	
	WATER m ³ /d OIL m ³ /d GAS m ³ /d		
SEPARATOR RESERVOIR	CONTAINER WHEN SAMPLED @ °C	CONTAINER WHEN RECEIVED @ °C	SEPARATOR
PRESSURES, kPa		TEMPERATURES, °C	
1985 12 17 DATE SAMPLED (Y/M/D)	1986 02 04 DATE RECEIVED (Y/M/D)	1986 02 05 DATE ANALYSED (Y/M/D)	LS ANALYST
REMARKS			

MUD FILTRATE ANALYSIS

Resistivity (Ohm-meters at 25°C) = 0.040

Chloride (mg/litre) = 169500

