

Lakes Oil N.L.
 Level 11
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 MELBOURNE VIC 3000
 Australia



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Accreditation No 2013

Attention: Margaret Rhodes

Project 04PEAD03791

Customer Sample ID	Cylinder #369	Cylinder #455	Cylinder #334
Well ID	Wombat-2, DST-2	Wombat-2, DST-2	Wombat-2, DST-2
Sample Type	Gas	Gas	Gas
Date Sampled	18/04/2004	19/04/2004	20/04/2004
Time Sampled	1948 h	0700 h	0800 h
Pressure	840 kPag	1378 kPag	11368 kPag
Temperature		14°C	14°C
Description	Floor Manifold Bubble Hose	Sample Chamber	Sample Chamber

GAS ANALYSIS

Test/Reference Unit

Gas Analysis ASTM D 1945-96 (modified)

Nitrogen*	Mol %	1.27	73.01	1.49
Carbon Dioxide*	Mol %	0.09	4.36	0.07
Methane*	Mol %	92.87	7.67	92.78
Ethane*	Mol %	3.51	0.30	3.61
Propane*	Mol %	1.31	0.12	1.25
I-Butane*	Mol %	0.21	0.02	0.20
N-Butane*	Mol %	0.32	0.04	0.31
I-Pentane*	Mol %	0.08	0.01	0.08
N-Pentane*	Mol %	0.08	0.04	0.07
Hexanes*	Mol %	0.16	0.06	0.09
Heptanes*	Mol %	0.10	0.08	0.03
Octanes and higher hydrocarbons	Mol %	< 0.01	< 0.01	0.02
Total*	Mol %	100.00	85.71	100.00

Gas Parameters ASTM D 1945-96 (modified)

Average Molecular Weight*		17.59	28.53	17.50
Lower Flammability Limit*		4.73	52.15	4.76
Upper Flammability Limit*		14.89	172.08	14.95
Ratio Of Upper To Lower*		3.15	3.30	3.14
Wobbe Index*		51.26	3.67	51.01
Compressibility Factor*		0.9977	0.9994	0.9977
Ideal Gas Density (Rel to Air = 1)*		0.607	0.985	0.604
Real Gas Density (Rel to Air = 1)*		0.609	0.985	0.606
Ideal Nett Calorific Value*	MJ/m ³	36.06	3.30	35.79
Ideal Gross Calorific Value*	MJ/m ³	39.95	3.64	39.66
Real Nett Calorific Value*	MJ/m ³	36.14	3.30	35.87
Real Gross Calorific Value*	MJ/m ³	40.04	3.65	39.75
Gross Calorific Val Water-Sat Gas	MJ/m ³	39.25	3.55	38.96

Customer Sample ID	Cylinder #SS-2	Cylinder #482
Well ID	Wombat-2, DST-2	Wombat-2, DST-3
Sample Type	Gas	Gas
Date Sampled	20/04/2004	21/04/2004
Time Sampled	1915 h	1010 h
Pressure	2033 kPag	2273 kPag
Temperature	20°C	
Description	Bubble Hose	

GAS ANALYSIS

Test/Reference Unit

Gas Analysis ASTM D 1945-96 (modified)

Nitrogen*	Mol %	1.23	1.72
Carbon Dioxide*	Mol %	0.02	0.04
Methane*	Mol %	93.19	92.70
Ethane*	Mol %	3.41	3.36
Propane*	Mol %	1.26	1.24
I-Butane*	Mol %	0.20	0.20
N-Butane*	Mol %	0.30	0.30
I-Pentane*	Mol %	0.08	0.08
N-Pentane*	Mol %	0.07	0.07
Hexanes*	Mol %	0.14	0.15
Heptanes*	Mol %	0.07	0.09
Octanes and higher hydrocarbons	Mol %	0.03	0.05
Total*	Mol %	100.00	100.00

Gas Parameters ASTM D 1945-96 (modified)

Average Molecular Weight*		17.51	17.59
Lower Flammability Limit*		4.74	4.76
Upper Flammability Limit*		14.89	14.96
Ratio Of Upper To Lower*		3.14	3.15
Wobbe Index*		51.28	50.97
Compressibility Factor*		0.9977	0.9977
Ideal Gas Density (Rel to Air = 1)*		0.605	0.607
Real Gas Density (Rel to Air = 1)*		0.606	0.609
Ideal Nett Calorific Value*	MJ/m ³	35.98	35.85
Ideal Gross Calorific Value*	MJ/m ³	39.87	39.72
Real Nett Calorific Value*	MJ/m ³	36.06	35.93
Real Gross Calorific Value*	MJ/m ³	39.96	39.82
Gross Calorific Val Water-Sat Gas	MJ/m ³	39.17	39.03

Gas Parameters

The above results are calculated on an air and water free basis assuming only the measured constituents are present. The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs) using ISO 6976 and the physical constants from the GPSA SI Engineering Data Handbook 11 th Ed.

Cylinder #455

Please note that the pressure in this sample was very low, although 200 psi was written on the cylinder. The absence of teflon tape around the thread suggests that the sample may have leaked after sampling, accounting for the high air content detected.

Authorised by: Michelle Fordham
Petroleum Chemist

Signature:



Accreditation No 2013

Final Report

- Indicates Not Requested

* Indicates NATA Accredited Test

Samples will be discarded after 30 days unless otherwise notified.

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The samples were not collected by Amdel staff.