



Santos Limited  
GPO Box 2319  
ADELAIDE SA 5000  
Australia

Attention: Noel Dowdell

Project **08PEAD0018634**  
Client Ref: 849485-101

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<b>Customer Sample ID</b>	<b>West Merreeie</b>
	<b>16</b>
<b>Sample Type</b>	<b>Gas</b>
<b>Date Sampled</b>	<b>24/05/2008</b>
<b>Time Sampled</b>	<b>1400-1430h</b>
<b>Pressure</b>	<b>1826kPag</b>
<b>Temperature</b>	<b>31°C</b>
<b>Cylinder ID</b>	<b>AA0825</b>
Test/Reference	Unit

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**Hydrotesting Cyl**  
Hydrotesting\* Pass

**GAS ANALYSIS**  
Test/Reference Unit

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**Gas Analysis** ASTM D 1945-96 (modified)

Nitrogen	Mol %	6.53
Carbon Dioxide	Mol %	0.07
Methane	Mol %	72.12
Ethane	Mol %	13.01
Propane	Mol %	4.96
I-Butane	Mol %	0.53
N-Butane	Mol %	1.43
I-Pentane	Mol %	0.38
N-Pentane	Mol %	0.44
Hexanes	Mol %	0.34
Heptanes	Mol %	0.14
Octanes and higher hydrocarbons	Mol %	0.05
Total	Mol %	100.00

**Gas Parameters** ASTM D 1945-96 (modified)

Average Molecular Weight		21.75
Lower Flammability Limit		4.21
Upper Flammability Limit		14.87
Ratio Of Upper To Lower		3.53
Wobbe Index		52.01
Compressibility Factor (Z)		0.9967
Ideal Gas Density (Rel to Air = 1)		0.751
Real Gas Density (Rel to Air = 1)		0.753
Ideal Nett Calorific Value	MJ/m <sup>3</sup>	40.90
Ideal Gross Calorific Value	MJ/m <sup>3</sup>	45.07
Real Nett Calorific Value	MJ/m <sup>3</sup>	41.04
Real Gross Calorific Value	MJ/m <sup>3</sup>	45.22
Gross Calorific Val Water-Sat Gas	MJ/m <sup>3</sup>	44.28

**Test Description****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.

**Authorised By**

Neil Thomas

Chemist

Michelle Fordham

Chemist

Accreditation No 2013

**Laboratory Manager**

Diane Cass

Operations Manager

**Final Report**

- Indicates Not Requested

\* Indicates NATA accreditation does not cover the performance of this service

Samples will be discarded after 30 days unless otherwise notified.

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# NATIONAL HYDRO TESTING SERVICES

1 ELLEMSEA CCT. LONSDALE SA 5160  
PH 8326 7755 MOBILE 0418 804 144

REGISTERED  
MARK  
REF #AAO285

Date of Test:	8/08
Previous Test Date:	
Reference Temperature:	14
Service:	F

TESTED IN  
COMPLIANCE  
WITH AS2030.1

## CERTIFICATE OF TEST

29597

S.A.A.  
APPROVED

TEST STATION No.: 308A

Serial No.: AAO 285

Client: AMDEL

Specification No.: DOT 3E 1800

Water Capacity: 0.5L

Test Pressure: 2925 PSI

Working Pressure: 1800 PSI

Condition: External

Condition: Internal

HYDROSTATIC/VISUAL  
TEST RESULT:

Passed

WEIGHT TEST: Passed

Good

Good

Recommendation or Remarks:

Average

Average

Poor

Poor