

API 30-045-24420
Bradenhead



Gas Analysis Certificate

OIL CONS. DIV DIST. 3

GPA Standard 2261-13

Acquisition Method Name au_report_150_C6+
Last calibration date 7/10/2015 10:21:38 AM

DEC 18 2015

Client:	BP	Project #:	03143-0880
Site Name:	Heaton B #3	Meter ID:	3004524923 (BHD)
Sampled by:	Sawyer M.	Date Sampled:	07-20-15
Analyzed by:	Logan Richter	Date Received:	07-20-15
Sample Pressure:	4 psig	Date Analyzed:	07-22-15
Sample Temperature:	N/A	Analysis Time:	Standard

Component Results (14.696)

Name	Qty (Norm) [Mol %]	Wt Percent (%)	GPM
Helium	0.941	0.130	0.095
Oxygen	12.190	13.429	1.080
Nitrogen	75.637	72.942	8.306
Carbon Dioxide	1.046	1.584	0.178
Methane	5.372	2.967	0.909
Ethane	1.057	1.094	0.282
Propane	1.821	2.764	0.501
i-Butane	0.638	1.276	0.208
n-Butane	0.162	0.323	0.051
i-Pentane	0.065	0.162	0.024
n-Pentane	0.089	0.220	0.032
C6+	0.982	3.108	0.428
	100.000	100.000	12.095

Calculations at Pressure Base 14.696

Compressibility (Z) (Dry Gas)	0.99924	C2+	1.526
Density (G) (Dry Gas)	1.00337	C3+	1.244
Component MW Total	29.05	C5+	0.484
Heating Value (Dry Ideal) Total BTU	201.34	Heating Value (Sat Ideal) Total BTU	197.83
Heating Value (Dry Real) Total BTU	201.50	Heating Value (Sat Real) Total BTU	197.98

[Signature]

7/27/2015

HPI 30-045-2425
Casing



Gas Analysis Certificate

GPA Standard 2261-13

Acquisition Method Name au_report_150_C6+
Last calibration date 7/10/2015 10:21:38 AM

Client:	BP	Project #:	03143-0880
Site Name:	Heaton B #3	Meter ID:	3004524923 (CSG)
Sampled by:	Sawyer M.	Date Sampled:	07-20-15
Analyzed by:	Logan Richter	Date Received:	07-20-15
Sample Pressure:	93 psig	Date Analyzed:	07-22-15
Sample Temperature:	N/A	Analysis Time:	Standard

Component Results (14.696)

Name	Qty (Norm) [Mol %]	Wt Percent (%)	GPM
Helium	0.012	0.002	0.001
Oxygen	0.032	0.049	0.003
Nitrogen	0.547	0.720	0.060
Carbon Dioxide	2.163	4.475	0.369
Methane	79.813	60.203	13.545
Ethane	9.257	13.088	2.478
Propane	3.995	8.284	1.102
i-Butane	0.989	2.702	0.324
n-Butane	1.399	3.823	0.441
i-Pentane	0.699	2.370	0.256
n-Pentane	0.480	1.627	0.174
C6+	0.615	2.657	0.269
	100.000	100.000	19.022

Calculations at Pressure Base 14.696

Compressibility (Z) (Dry Gas)	0.99642	C2+	5.044
Density (G) (Dry Gas)	0.73460	C3+	2.566
Component MW Total	21.27	C5+	0.698
Heating Value (Dry Ideal) Total BTU	1226.96	Heating Value (Sat Ideal) Total BTU	1205.55
Heating Value (Dry Real) Total BTU	1231.37	Heating Value (Sat Real) Total BTU	1209.73

BSR

7/27/2015