

# NATURAL GAS ANALYSIS REPORT

Sampled by:  
Trilobite Testing, L. L. C.  
Hays, Kansas  
Scott City, Kansas  
Phone: 800-728-5369  
Fax: 913-625-5620

Analyzed by:  
Caraway Analytical, Inc  
P. O. Box 2137  
Liberal, Kansas 67905  
Phone: 316-624-5389  
Fax: 316-626-7108

Lab Number: 20013689 Analyzed: 08/16/01

Sample From: McKinley 1 DST 2 Pressure:  
Producer: Roberts Resources Temperature:

Date: Location: 9-29-18

Time: County: Kiowa  
Sampler: State: Kansas  
Source: Formation: Altamont

	Mole %	GPM
Helium	He: 0.027	0.000
Hydrogen	H2: 0.011	0.000
Oxygen	O2: 0.000	0.000
Nitrogen	N2: 3.178	0.000
Carbon Dioxide	CO2: 0.090	0.000
Methane	C1: 67.259	0.000
Ethane	C2: 8.786	2.350
Propane	C3: 10.187	2.807
Iso Butane	iC4: 1.559	0.510
Normal Butane	nC4: 4.252	1.341
Iso Pentane	iC5: 0.953	0.349
Normal Pentane	nC5: 1.376	0.498
Hexanes Plus	C6+: 2.322	1.013

TOTAL: 100.000 8.868

Z Fact: 0.9945

SP.GR.: 0.9057

BTU (SAT): 1478.5 @ 14.73 psia

BTU (DRY): 1504.6 @ 14.73 psia

**OCTANE RATING: 113.7**

COMMENTS:

0.000

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Sampled by:  
 Trilobite Testing, L. L. C.  
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 Scott City, Kansas  
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Analyzed by:  
 Caraway Analytical, Inc  
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 Liberal, Kansas 67905  
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 Fax: 620-626-7108

<b>Lab Number:</b> 20013721	<b>Analyzed:</b> 08/19/01
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Sample From: McKinley 1 DST 3	Pressure:	
Producer: Roberts Resources	Temperature:	

<b>Date:</b> 9-29-18	<b>Location:</b> 9-29-18
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Time:	County:	Kiowa
Sampler:	State:	Kansas
Source:	Formation:	Pawnee

	Mole %	GPM
Helium	He: 0.156	0.000
Hydrogen	H2: 0.005	0.000
Oxygen	O2: 0.000	0.000
Nitrogen	N2: 5.175	0.000
Carbon Dioxide	CO2: 0.048	0.000
Methane	C1: 82.300	0.000
Ethane	C2: 4.507	1.205
Propane	C3: 3.660	1.009
Iso Butane	iC4: 0.587	0.192
Normal Butane	nC4: 1.670	0.527
Iso Pentane	iC5: 0.457	0.167
Normal Pentane	nC5: 0.534	0.193
Hexanes Plus	C6+: 0.901	0.393

TOTAL: 100.000    3.686

Z Fact: 0.9970  
 SP.GR.: 0.7108

BTU (SAT): 1148.4 @ 14.73 psia  
 BTU (DRY): 1168.7 @ 14.73 psia

**OCTANE RATING: 118.1**

COMMENTS:

0.000

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<b>Lab Number:</b> 20013722	<b>Analyzed:</b> 08/19/01
Sample From: McKinley 1 DST 4	Pressure:
Producer: Roberts Resources	Temperature:
<b>Date: Location: 9-29-18</b>	
Time:	County: Kiowa
Sampler:	State: Kansas
Source:	Formation: Miss

	Mole %	GPM
Helium	He: 0.139	0.000
Hydrogen	H2: 0.001	0.000
Oxygen	O2: 0.000	0.000
Nitrogen	N2: 1.923	0.000
Carbon Dioxide	CO2: 0.113	0.000
Methane	C1: 91.603	0.000
Ethane	C2: 3.074	0.822
Propane	C3: 1.022	0.282
Iso Butane	iC4: 0.175	0.057
Normal Butane	nC4: 0.380	0.120
Iso Pentane	iC5: 0.153	0.056
Normal Pentane	nC5: 0.191	0.069
Hexanes Plus	C6+: 1.226	0.535

TOTAL: 100.000    1.941

Z Fact: 0.9975

SP.GR.: 0.6364

BTU (SAT): 1086.1 @ 14.73 psia

BTU (DRY): 1105.3 @ 14.73 psia

## OCTANE RATING: 124.2

COMMENTS:

0.000