



LABORATORY SERVICES
Natural Gas Analysis

www.permianls.com
575.397.3713 2609 W Marland Hobbs NM 88240

Total Sulfur in Crude

Apache Corporation
Attention: Craig Maxwell
2350 W. Marland Blvd.
Hobbs, New Mexico 88240

07/20/15

	Total Sulfur	API Gravity	Specific Gravity
Crow #36 Upper Blinebry	0.558 wt. %	33.2	0.8591
Crow #18 Lower Blinebry	0.637 wt. %	33.2	0.8591
Crow #34 Paddock	0.592 wt. %	35.1	0.8493
Raven #19 Paddock	0.333 wt. %	35.2	0.8488
Raven #20 Upper Blinebry	0.458 wt. %	36.4	0.8427

Test Method ASTM D4294 Sulfur
Test Method ASTM D287 API Gravity

Case No. 15316

Apache
Exhibit 16



LABORATORY SERVICES
Natural Gas Analysis

www.permianls.com

575.397.3713 2609 W Marland Hobbs NM 88240

For: Apache Corporation
Attention: Brad Childers
2350 W. Marland Blvd
Hobbs, New Mexico 88240

Sample:
Identification: Raven Fed. #19H Paddock
Company: Apache
Lease:
Plant:

Sample Data: Date Sampled 7/1/2015 12:31 PM
Analysis Date 7/3/2015
Pressure-PSIA 143
Sample Temp F 90
Atmos Temp F 97

Sampled by: Brad Childers
Analysis by: Vicki McDaniel

H2S = 500 PPM

Component Analysis

		Mol Percent	GPM
Hydrogen Sulfide	H2S	0.050	
Nitrogen	N2	6.204	
Carbon Dioxide	CO2	0.486	
Methane	C1	73.141	
Ethane	C2	10.810	2.883
Propane	C3	4.925	1.353
I-Butane	IC4	0.558	0.182
N-Butane	NC4	1.517	0.477
I-Pentane	IC5	0.430	0.157
N-Pentane	NC5	0.497	0.180
Hexanes Plus	C6+	<u>1.382</u>	<u>0.599</u>
		100.000	5.831

REAL BTU/CU.FT.

At 14.65 DRY	1230.7
At 14.65 WET	1209.2
At 14.896 DRY	1234.5
At 14.896 WET	1213.5
At 14.73 DRY	1237.3
At 14.73 Wet	1216.0

Specific Gravity

Calculated 0.7695

Molecular Weight 22.2879

Z Factor (DRY) 0.9963

Z Factor (WET) 0.9959



LABORATORY SERVICES

Natural Gas Analysis

www.permianls.com

575.397.3713 2609 W Marland Hobbs NM 88240

For: Apache Corporation
Attention: Brad Childers
2350 W. Marland Blvd
Hobbs, New Mexico 88240

Sample:
Identification: Crow Federal 36H Upper Blinbry
Company: Apache
Lease:
Plant:

Sample Data: Date Sampled 7/1/2015 2:00 PM
Analysis Date 7/3/2015
Pressure-PSIA 98
Sample Temp F 98.5
Atmos Temp F 103.6

Sampled by: Brad Childers
Analysis by: Vicki McDaniel

H2S = 0.5 PPM

Component Analysis

		Mol Percent	GPM
Hydrogen Sulfide	H2S		
Nitrogen	N2	6.057	
Carbon Dioxide	CO2	0.354	
Methane	C1	75.772	
Ethane	C2	11.133	2.970
Propane	C3	4.434	1.218
I-Butane	IC4	0.451	0.147
N-Butane	NC4	0.981	0.308
I-Pentane	IC5	0.215	0.078
N-Pentane	NC5	0.224	0.081
Hexanes Plus	C6+	<u>0.379</u>	<u>0.164</u>
		100.000	4.967

REAL BTU/CU.FT.

At 14.65 DRY 1157.6
At 14.65 WET 1137.4
At 14.696 DRY 1161.2
At 14.696 WET 1141.4
At 14.73 DRY 1163.9
At 14.73 Wet 1143.8

Specific Gravity

Calculated 0.7186

Molecular Weight 20.8133

Z Factor (DRY) 0.9969

Z Factor (WET) 0.9965



LABORATORY SERVICES
Natural Gas Analysis

www.permianls.com

575.397.3713 2609 W Marland Hobbs NM 88240

For: Apache Corporation
Attention: Brad Childers
2350 W. Marland Blvd
Hobbs, New Mexico 88240

Sample:
Identification: Raven Fed. #20H Upper Blinbry
Company: Apache
Lease:
Plant:

Sample Data: Date Sampled 7/1/2015 12:53 PM
Analysis Date 7/3/2015
Pressure-PSIA 155
Sample Temp F 97.1
Atmos Temp F 100

Sampled by: Brad Childers
Analysis by: Vicki McDaniel

H2S = 250 PPM

Component Analysis

		Mol Percent	GPM
Hydrogen Sulfide	H2S	0.025	
Nitrogen	N2	3.229	
Carbon Dioxide	CO2	0.386	
Methane	C1	78.036	
Ethane	C2	11.001	2.935
Propane	C3	4.660	1.280
I-Butane	IC4	0.489	0.160
N-Butane	NC4	1.127	0.354
I-Pentane	IC5	0.264	0.096
N-Pentane	NC5	0.266	0.096
Hexanes Plus	C6+	<u>0.517</u>	<u>0.224</u>
		100.000	5.145

REAL BTU/CU.FT.

At 14.65 DRY	1200.9	Specific Gravity Calculated	0.7170
At 14.65 WET	1179.9		
At 14.696 DRY	1204.6		
At 14.696 WET	1184.1	Molecular Weight	20.7677
At 14.73 DRY	1207.4		
At 14.73 Wet	1186.6		
		Z Factor (DRY)	0.9967
		Z Factor (WET)	0.9963



LABORATORY SERVICES

Natural Gas Analysis

www.permianls.com

575.397.3713 2609 W Marland Hobbs NM 88240

For: Apache Corporation
Attention: Brad Childers
2350 W. Marland Blvd
Hobbs, New Mexico 88240

Sample:
Identification: Crow Fed. #18H Lower Blinbry
Company: Apache
Lease:
Plant:

Sample Data: Date Sampled 7/6/2015 10:15 AM
Analysis Date 7/7/2015
Pressure-PSIA 70
Sample Temp F 89
Atmos Temp F 89

Sampled by: Brad Childers
Analysis by: Vicki McDaniel

H2S = 2 PPM

Component Analysis

		Mol Percent	GPM
Hydrogen Sulfide	H2S		
Nitrogen	N2	4.001	
Carbon Dioxide	CO2	0.446	
Methane	C1	71.767	
Ethane	C2	12.628	3.369
Propane	C3	6.456	1.774
I-Butane	IC4	0.761	0.248
N-Butane	NC4	1.870	0.588
I-Pentane	IC5	0.492	0.179
N-Pentane	NC5	0.514	0.186
Hexanes Plus	C6+	<u>1.065</u>	<u>0.461</u>
		100.000	6.805

REAL BTU/CU.FT.

At 14.65 DRY 1292.6
At 14.65 WET 1270.1
At 14.696 DRY 1296.7
At 14.696 WET 1274.6
At 14.73 DRY 1299.6
At 14.73 Wet 1277.2

Specific Gravity

Calculated 0.7845

Molecular Weight 22.7217

Z Factor (DRY) 0.996

Z Factor (WET) 0.9955