EXTENDED NATURAL GAS ANALYSIS (*DHA)

MAIN PAGE

PRIMARY DB KEY:	**05-045-15200**	NAME/DESCRIP :	**110165618 NP N30 EF06C-31 595**
LEASE #:	**05-045-15200**		**PRODUCTION CASING**
FIELD/AREA:	**GRAND VALLEY**		
PROJECT NO. :	**202601120**	ANALYSIS NO. :	**01**
COMPANY NAME :	**QB ENERGY OPERATING, LLC**	ANALYSIS DATE:	FEBRUARY 06, 2026 08:28
OFFICE / BRANCH:	PARACHUTE, CO	SAMPLE DATE :	JANUARY 20, 2026 7:30
CUSTOMER REF:		TO:	
PRODUCER :	QB ENERGY OPERATING, LLC	EFFECTIVE DATE:	

*****FIELD DATA*****

SAMPLE CYCLE:			SAMPLE TYPE:	SPOT
SAMPLE PRES. :	181	psig	PROBE :	NO
FLOW PRES. :		psig	CYLINDER NO. :	ECA-738
LAB PRES:		psig	SAMPLED BY :	ALEX GALLEGOS
SAMPLE TEMP. :	11	ºf	SAMPLING COMPANY:	QB ENERGY
AMBIENT TEMP.:		ºf	H2S BY STAIN TUBE:	ppm mol
H2O BY STAIN TUBE:		#/mmcf	CO2 BY STAIN TUBE:	Mol %

FIELD COMMENTS:

LAB COMMENTS:

COMPONENT	MOLE %	MASS %	GPM @ 14.65	GPM @ 14.73
ALCOHOLS	0.1033	0.1860	0.0130	0.0131
HELIUM	0.00	0.00	---	---
HYDROGEN	0.40	0.05	---	---
OXYGEN/ARGON	0.02	0.04	---	---
NITROGEN	0.21	0.33	---	---
CARBON DIOXIDE	1.21	2.98	---	---
METHANE	90.5602	81.1575	---	---
ETHANE	5.4053	9.0794	1.4410	1.4489
PROPANE	1.2118	2.9850	0.3328	0.3346
I-BUTANE	0.3402	1.1046	0.1109	0.1115
N-BUTANE	0.2269	0.7367	0.0710	0.0713
I-PENTANE	0.1470	0.5923	0.0540	0.0542
N-PENTANE	0.0670	0.2700	0.0240	0.0241
HEXANES PLUS	0.0983	0.4885	0.0380	0.0381
TOTALS	100.00000	100.00000	2.0847	2.0958

BTEX COMPONENTS	MOLE%	WT%
BENZENE	0.0000	0.0000
TOLUENE	0.0000	0.0000
ETHYLBENZENE	0.0000	0.0000
XYLENES	0.0000	0.0000
TOTAL BTEX	0.0000	0.0000

**(DETAILED HYDROCARBON ANALYSIS/NJ 1993)*
Mod ASTM D6730,GPA 2261 & GPA 2286.

***(CALC: GPA 2172, GPA 2145 & TP-17 @14.696 & 60 F)*

CALCULATED VALUES**

	BTU @	14.65	14.73
LHV	NET DRY REAL :	969.6 /scf	974.9 /scf
	NET WET REAL :	952.7 /scf	958.0 /scf
HHV	GROSS DRY REAL :	1074.2 /scf	1080.0 /scf
	GROSS WET REAL :	1055.4 /scf	1061.2 /scf
	NET HEATING VALUE (60 °F ideal reaction):		20574.0 Btu/lbm
	GROSS HEATING VALUE (60°F ideal reaction):		22789.2 Btu/lbm
	RELATIVE DENSITY (AIR=1):		0.6176
	DENSITY		0.04716 lbm/scf
	COMPRESSIBILITY FACTOR :		0.9976
	REGULAR WOBBE INDEX		1367.8

EMPACT

EXTENDED NATURAL GAS ANALYSIS (*DHA)

GLYCALC INFORMATION

PROJECT NO. :	202601120	ANALYSIS NO. :	01
COMPANY NAME :	QB ENERGY OPERATING, LLC	ANALYSIS DATE:	FEBRUARY 06, 2026 08:28
ACCOUNT NO. :		SAMPLE DATE :	JANUARY 20, 2026 7:30
PRODUCER :	QB ENERGY OPERATING, LLC	CYLINDER NO. :	ECA-738
LEASE NO. :	05-045-15200	SAMPLED BY :	ALEX GALLEGOS
NAME/DESCRIP :	110165618 NP N30 EF06C-31 595 PRODUCTION CASING		
FIELD DATA		SAMPLE TEMP. :	11
SAMPLE PRES. :	181	AMBIENT TEMP.:	
H2S BY STAIN TUBE:	_ *ppm mol*		
COMMENTS :	*SPOT* *NO PROBE*		

Componet	Mole %	Wt %
Helium	0.00	0.00
Hydrogen	0.40	0.05
Carbon Dioxide	1.21	2.98
Nitrogen	0.21	0.33
Methane	90.5602	81.1575
Ethane	5.4053	9.0794
Propane	1.2118	2.9850
Isobutane	0.3402	1.1046
n-Butane	0.2269	0.7367
Isopentane	0.1460	0.5884
n-Pentane	0.0670	0.2700
Cyclopentane	0.0010	0.0039
n-Hexane	0.0188	0.0905
Cyclohexane	0.0014	0.0066
Other Hexanes	0.0606	0.2913
Heptanes	0.0141	0.0786
Methylcyclohexane	0.0011	0.0060
2,2,4 Trimethylpentane	0.0000	0.0000
Benzene	0.0000	0.0000
Toluene	0.0000	0.0000
Ethylbenzene	0.0000	0.0000
Xylenes	0.0000	0.0000
C8+ Heavies	0.0023	0.0155
Subtotal	99.87670	99.77400
Oxygen/Argon	0.02	0.04
Alcohols	0.1033	0.1860
Total	100.00000	100.00000

Calculated Values BTU @ **14.65**		**Total Sample**	**C6+ Fraction**	**C8+ Fraction**	**C10+ Fraction**	
LHV	Net Dry Real:	969.6	4568.3	5831.5	6665.7	**Btu/scf**
	Net Wet Real:	952.7	4488.4	5729.6	6549.2	**Btu/scf**
HHV	Gross Dry Real:	1074.2	4929.9	6259.9	7097.3	**Btu/scf**
	Gross Wet Real:	1055.4	4843.7	6150.5	6973.2	**Btu/scf**
Other Calculated Values						
Regualr Wobbe Index*		1367.8	2785.4	3058.7	3266.4	**Btu/scf**
Net Heating Value (60 °F ideal reaction):		20574.0	19319.9	18197.8	18459.9	**Btu/lbm**
Gross Heating Value (60°F ideal reaction):		22789.2	20850.5	19534.2	19657.9	**Btu/lbm**
Molar Mass (MW):		17.89836	89.019	121.619	137.447	**g/mol**
Relative Density (AIR=1):		0.6176	3.0732	4.1992	4.7456	**SG**
Density:		0.04716	0.23458	0.32048	0.36219	**lbm/scf**
Compressiblity Factor:		0.9976	0.9874	0.9982	0.9995	**Z**
Liquid Volume real gas @:	**14.65**	17.6107	0.0379	0	0	**gal/1000 scf**

**** The Wobbe pressure base in the number considered is based upon the given Pb of the HHV above.***

#DIV/0 or 0 (zero) will appear in the Calculated Value Section when there is no C6+, C8+ or C10+ in the sample to calculate these factors.

BDL - Below Detection Limit. The H2S LOS has a detection limit of 0.25 ppm. A _ (an uderscore) indicates there was no tube pulled for H2S.

EXTENDED NATURAL GAS ANALYSIS (*DHA)

DHA COMPONENT LIST

PRIMARY DB KEY:	**05-045-15200**	NAME/DESCRIP :	**110165618 NP N30 EF06C-31 595**
LEASE #:	**05-045-15200**		**PRODUCTION CASING**
FIELD/AREA:	**GRAND VALLEY**		
PROJECT NO. :	**202601120**	ANALYSIS NO. :	**01**
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OFFICE / BRANCH:	PARACHUTE, CO	SAMPLE DATE :	JANUARY 20, 2026 7:30
CUSTOMER REF:		TO:	
PRODUCER :	QB ENERGY OPERATING, LLC	EFFECTIVE DATE:	
FIELD DATA			
SAMPLE CYCLE:		SAMPLE TYPE:	SPOT
SAMPLE PRES. :	181 psig	PROBE :	NO
FLOW PRES. :	psig	CYLINDER NO. :	ECA-738
LAB PRES:	psig	SAMPLED BY :	ALEX GALLEGOS
SAMPLE TEMP. :	11 ºf	SAMPLING COMPANY:	QB ENERGY
AMBIENT TEMP.:	ºf	H2S BY STAIN TUBE:	_ ppm mol
H2O BY STAIN TUBE:	- #/mmcf	CO2 BY STAIN TUBE:	- Mol %
FIELD COMMENTS:			
LAB COMMENTS:			

COMPONENT	PIANO #	MOLE %	MASS %	GPM @ **14.65**	GPM @ **14.73**
Hydrogen	---	0.40	0.05	---	---
Oxygen/Argon	---	0.02	0.04	---	---
Nitrogen	---	0.21	0.33	---	---
Carbon Dioxide	---	1.21	2.98	---	---
Methane	P1	90.5602	81.1575	---	---
Ethane	P2	5.4053	9.0794	1.441	1.449
Propane	P3	1.2118	2.9850	0.333	0.335
i-Butane	I4	0.3402	1.1046	0.111	0.112
Methanol	X1	0.1027	0.1838	0.013	0.013
n-Butane	P4	0.2268	0.7364	0.071	0.071
2,2-Dimethylpropane	I5	0.0070	0.0282	0.003	0.003
i-Pentane	I5	0.1390	0.5602	0.051	0.051
Acetone	X3	0.0002	0.0007	0.000	0.000
i-Propanol	X3	0.0001	0.0003	0.000	0.000
UnknownC4s	U4	0.0001	0.0003	0.000	0.000
n-Pentane	P5	0.0670	0.2700	0.024	0.024
t-Butanol	X4	0.0003	0.0012	0.000	0.000
2,2-Dimethylbutane	I6	0.0078	0.0375	0.003	0.003
Cyclopentane	N5	0.0010	0.0039	0.000	0.000
2,3-Dimethylbutane	I6	0.0077	0.0371	0.003	0.003
2-Methylpentane	I6	0.0285	0.1372	0.012	0.012
3-Methylpentane	I6	0.0130	0.0626	0.005	0.005
n-Hexane	P6	0.0188	0.0905	0.008	0.008
2,2-Dimethylpentane	I7	0.0012	0.0067	0.001	0.001
Methylcyclopentane	N6	0.0036	0.0169	0.001	0.001
2,4-Dimethylpentane	I7	0.0015	0.0084	0.001	0.001
2,2,3-Trimethylbutane	I7	0.0004	0.0022	0.000	0.000

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3,3-Dimethylpentane	I7	0.0003	0.0017	0.000	0.000
Cyclohexane	N6	0.0014	0.0066	0.000	0.000
2-Methylhexane	I7	0.0034	0.0190	0.002	0.002
2,3-Dimethylpentane	I7	0.0007	0.0039	0.000	0.000
1,1-Dimethylcyclopentane	N7	0.0003	0.0016	0.000	0.000
3-Methylhexane	I7	0.0023	0.0128	0.001	0.001
1c,3-Dimethylcyclopentane	N7	0.0004	0.0022	0.000	0.000
1t,3-Dimethylcyclopentane	N7	0.0003	0.0016	0.000	0.000
3-Ethylpentane	I7	0.0001	0.0006	0.000	0.000
1t,2-Dimethylcyclopentane	N7	0.0004	0.0022	0.000	0.000
n-Heptane	P7	0.0027	0.0151	0.001	0.001
1c,2-Dimethylcyclopentane	N7	0.0001	0.0006	0.000	0.000
Methylcyclohexane	N7	0.0011	0.0060	0.000	0.000
2,2-Dimethylhexane	I8	0.0001	0.0006	0.000	0.000
2,5-Dimethylhexane	I8	0.0002	0.0013	0.000	0.000
2,2,3-Trimethylpentane	I8	0.0001	0.0006	0.000	0.000
2-Methylheptane	I8	0.0002	0.0013	0.000	0.000
4-Methylheptane	I8	0.0001	0.0006	0.000	0.000
3-Methylheptane	I8	0.0001	0.0006	0.000	0.000
1c,2t,3-Trimethylcyclopentane	N8	0.0001	0.0006	0.000	0.000
n-Octane	P8	0.0002	0.0013	0.000	0.000
i-Butylcyclopentane	N9	0.0001	0.0007	0.000	0.000
n-Nonane	P9	0.0001	0.0007	0.000	0.000
3,6-Dimethyloctane	I10	0.0001	0.0008	0.000	0.000
1,3-Methylethylbenzene	A9	0.0003	0.0020	0.000	0.000
1,4-Methylethylbenzene	A9	0.0001	0.0007	0.000	0.000
1,3,5-Trimethylbenzene	A9	0.0001	0.0007	0.000	0.000
2-Methylnonane	I10	0.0001	0.0008	0.000	0.000
t-Butylbenzene	A10	0.0003	0.0022	0.000	0.000
TOTAL		100.00000	100.00000	2.0847	2.0958

BTEX COMPONENTS	MOLE%	WT%
BENZENE	0.0000	0.0000
TOLUENE	0.0000	0.0000
ETHYLBENZENE	0.0000	0.0000
XYLENES	0.0000	0.0000
TOTAL BTEX	0.0000	0.0000

**(DETAILED HYDROCARBON ANALYSIS/NJ 1993) Mod ASTM D6730,GPA 2261 & GPA 2286.*

***(CALC: GPA 2172, GPA 2145 & TP-17 @14.696 & 60 F)*

CALCULATED VALUES**

BTU @		14.65	14.73
LHV	NET DRY REAL :	969.6 /scf	974.9 /scf
	NET WET REAL :	952.7 /scf	958.0 /scf
HHV	GROSS DRY REAL :	1074.2 /scf	1080.0 /scf
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	NET HEATING VALUE (60 °F ideal reaction):		20574.0 Btu/lbm
	GROSS HEATING VALUE (60°F ideal reaction):		22789.2 Btu/lbm
	RELATIVE DENSITY (AIR=1):		0.6176
	DENSITY		0.04716 lb/scf
	COMPRESSIBILITY FACTOR :		0.9976
	REGULAR WOBBE INDEX		1367.8

C6+ Fraction of DHA Gas Analysis @60°F, 14.696 psia

Net Dry Ideal BTU	4524.7 /scf	Relative Density - SG (Air=1)	3.0732	***C6+factors***
Gross Dry Ideal BTU	4882.9 /scf	**Z** Compressiblity Factor	0.98736	0.98696
Net Dry Ideal BTU	19319.9 /lb	Density Factor	234.581 lbm/1000 ft3	
Gross Dry Ideal BTU	20850.5 /lb	Molar Mass or MW	89.019 g/mol	
		Volume Liquid Ideal gas	0.038 scf/gal	23.8

This hexanes plus fraction may be applied in place of published C6+ factors. The Z & GPM need additional calc for C6+ factors.

#DIV/0 or 0 (zero) will appear in this section when there is no hexanes plus in the sample to calculate C6+ factors.