



**EXTENDED NATURAL GAS ANALYSIS (\*DHA)**

**MAIN PAGE**

PRIMARY DB KEY: **05-103-10405**      NAME/DESCRIP : **YCF 34-44-1**  
 LEASE #:      **PRODUCTION CASING**  
 FIELD/AREA:

PROJECT NO. : **202508035**      ANALYSIS NO. : **01**  
 COMPANY NAME : **QB ENERGY OPERATING, LLC**      ANALYSIS DATE: **AUGUST 13, 2025 10:09**  
 OFFICE / BRANCH: **PARACHUTE, CO**      SAMPLE DATE : **AUGUST 01, 2025 09:00**  
 CUSTOMER REF:      TO:  
 PRODUCER :      EFFECTIVE DATE:

**\*\*\*FIELD DATA\*\*\***

SAMPLE CYCLE:      SAMPLE TYPE:  
 SAMPLE PRES. :      psig      PROBE :  
 FLOW PRES. :      psig      CYLINDER NO. :      ECA-804  
 LAB PRES:      psig      SAMPLED BY :      NICK CROY  
 SAMPLE TEMP. :      °f      SAMPLING COMPANY: **QB ENERGY OPERATING LLC**  
 AMBIENT TEMP.:      °f      H2S BY STAIN TUBE:      —      ppm mol  
 H2O BY STAIN TUBE:      -      #/mmcf      CO2 BY STAIN TUBE:      -      Mol %  
 FIELD COMMENTS:  
 LAB COMMENTS:

| <u>COMPONENT</u> | <u>MOLE %</u>   | <u>MASS %</u>   | <u>GPM @</u>  |               |
|------------------|-----------------|-----------------|---------------|---------------|
|                  |                 |                 | <u>14.65</u>  | <u>14.73</u>  |
| ALCOHOLS         | 0.0815          | 0.1383          | 0.0100        | 0.0101        |
| HELIUM           | 0.01            | 0.00            | ---           | ---           |
| HYDROGEN         | 0.62            | 0.07            | ---           | ---           |
| OXYGEN/ARGON     | 0.00            | 0.00            | ---           | ---           |
| NITROGEN         | 0.43            | 0.64            | ---           | ---           |
| CARBON DIOXIDE   | 0.51            | 1.19            | ---           | ---           |
| METHANE          | 86.3519         | 73.3588         | ---           | ---           |
| ETHANE           | 7.2891          | 11.6065         | 1.9433        | 1.9539        |
| PROPANE          | 2.8543          | 6.6650          | 0.7837        | 0.7880        |
| I-BUTANE         | 0.5975          | 1.8390          | 0.1949        | 0.1960        |
| N-BUTANE         | 0.6517          | 2.0058          | 0.2049        | 0.2060        |
| I-PENTANE        | 0.2342          | 0.8943          | 0.0850        | 0.0854        |
| N-PENTANE        | 0.1676          | 0.6403          | 0.0610        | 0.0613        |
| HEXANES PLUS     | 0.2022          | 0.9522          | 0.0820        | 0.0822        |
| <b>TOTALS</b>    | <b>100.0000</b> | <b>100.0000</b> | <b>3.3648</b> | <b>3.3829</b> |

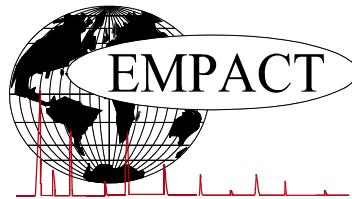
| <u>BTEX COMPONENTS</u> | <u>MOLE%</u>  | <u>WT%</u>    |
|------------------------|---------------|---------------|
| BENZENE                | 0.0007        | 0.0029        |
| TOLUENE                | 0.0003        | 0.0015        |
| ETHYLBENZENE           | 0.0000        | 0.0000        |
| XYLENES                | 0.0000        | 0.0000        |
| <b>TOTAL BTEX</b>      | <b>0.0010</b> | <b>0.0044</b> |

|  | <u>CALCULATED VALUES**</u> |                 |
|--|----------------------------|-----------------|
|  | <u>BTU @</u>               | <u>BTU @</u>    |
|  | <u>14.65</u>               | <u>14.73</u>    |
| LHV NET DRY REAL :                         | 1032.4 /scf                | 1038.1 /scf     |
| NET WET REAL :                             | 1014.4 /scf                | 1020.1 /scf     |
| HHV GROSS DRY REAL :                       | 1141.9 /scf                | 1148.1 /scf     |
| GROSS WET REAL :                           | 1121.9 /scf                | 1128.1 /scf     |
| NET HEATING VALUE (60 °F ideal reaction):  |                            | 20764.9 Btu/lbm |
| GROSS HEATING VALUE (60°F ideal reaction): |                            | 22958.3 Btu/lbm |
| RELATIVE DENSITY (AIR=1):                  |                            | 0.6518          |
| DENSITY                                    |                            | 0.04976 lbm/scf |
| COMPRESSIBILITY FACTOR :                   |                            | 0.9972          |
| REGULAR WOBBE INDEX                        |                            | 1414.9          |

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

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

*The data presented herein has been acquired by means of current analytical techniques and represents the judicious conclusion EMPACT Analytical Systems, Inc. Results of the analysis can be affected by the sampling conditions, therefore, are only warranted through proper lab protocol. EMPACT assumes no responsibility for interpretation or any consequences from application of the reported information and is the sole liability of the user. The reproduction in any media of this reported information may not be made, in portion or as a whole, without the written permission of EMPACT Analytical Systems, Inc.*



**EXTENDED NATURAL GAS ANALYSIS (\*DHA)  
GLYCALC INFORMATION**

|                |                                  |                |                       |
|----------------|----------------------------------|----------------|-----------------------|
| PROJECT NO. :  | 202508035                        | ANALYSIS NO. : | 01                    |
| COMPANY NAME : | QB ENERGY OPERATING, LLC         | ANALYSIS DATE: | AUGUST 13, 2025 10:09 |
| ACCOUNT NO. :  |                                  | SAMPLE DATE :  | AUGUST 01, 2025 09:00 |
| PRODUCER :     |                                  | CYLINDER NO. : | ECA-804               |
| LEASE NO. :    |                                  | SAMPLED BY :   | NICK CROY             |
| NAME/DESCRIP : | YCF 34-44-1<br>PRODUCTION CASING |                |                       |

\*\*\*FIELD DATA\*\*\*

SAMPLE PRES. :  
H2S BY STAIN TUBE: — ppm mol  
COMMENTS :

SAMPLE TEMP. :  
AMBIENT TEMP.:

| <u>Componet</u>        | <u>Mole %</u>    | <u>Wt %</u>      |
|------------------------|------------------|------------------|
| Helium                 | 0.01             | 0.00             |
| Hydrogen               | 0.62             | 0.07             |
| Carbon Dioxide         | 0.51             | 1.19             |
| Nitrogen               | 0.43             | 0.64             |
| Methane                | 86.3519          | 73.3588          |
| Ethane                 | 7.2891           | 11.6065          |
| Propane                | 2.8543           | 6.6650           |
| Isobutane              | 0.5975           | 1.8390           |
| n-Butane               | 0.6517           | 2.0058           |
| Isopentane             | 0.2293           | 0.8761           |
| n-Pentane              | 0.1676           | 0.6403           |
| Cyclopentane           | 0.0049           | 0.0182           |
| n-Hexane               | 0.0501           | 0.2286           |
| Cyclohexane            | 0.0124           | 0.0553           |
| Other Hexanes          | 0.0958           | 0.4356           |
| Heptanes               | 0.0323           | 0.1704           |
| Methylcyclohexane      | 0.0075           | 0.0390           |
| 2,2,4 Trimethylpentane | 0.0000           | 0.0000           |
| Benzene                | 0.0007           | 0.0029           |
| Toluene                | 0.0003           | 0.0015           |
| Ethylbenzene           | 0.0000           | 0.0000           |
| Xylenes                | 0.0000           | 0.0000           |
| C8+ Heavies            | 0.0031           | 0.0189           |
| <u>Subtotal</u>        | <u>99.91850</u>  | <u>99.86170</u>  |
| Oxygen/Argon           | 0.00             | 0.00             |
| Alcohols               | 0.0815           | 0.1383           |
| <u>Total</u>           | <u>100.00000</u> | <u>100.00000</u> |

| Calculated Values BTU @        |   | Total Sample | C6+ Fraction | C8+ Fraction | C10+ Fraction   |
|--------------------------------|---|--------------|--------------|--------------|-----------------|
|                                |   |              |              |              |                 |
|                                | <b>14.65</b>                                |              |              |              |                 |
| LHV                            | Net Dry Real:                               | 1032.4       | 4552.6       | 5832.5       | 7516.5 Btu/scf  |
|                                | Net Wet Real:                               | 1014.4       | 4473.0       | 5730.5       | 7385.1 Btu/scf  |
| HHV                            | Gross Dry Real:                             | 1141.9       | 4909.1       | 6283.9       | 8093.2 Btu/scf  |
|                                | Gross Wet Real:                             | 1121.9       | 4823.3       | 6174.0       | 7951.7 Btu/scf  |
| <b>Other Calculated Values</b> |   |              |              |              |                 |
|                                | Regualr Wobbe Index*                        | 1414.9       | 2779.1       | 3138.1       | 3574.8 Btu/scf  |
|                                | Net Heating Value (60 °F ideal reaction):   | 20764.9      | 19345.0      | 19874.5      | 20138.0 Btu/lbm |
|                                | Gross Heating Value (60 °F ideal reaction): | 22958.3      | 20859.7      | 21413.8      | 21683.2 Btu/lbm |
|                                | Molar Mass (MW):                            | 18.88299     | 88.957       | 116.165      | 149.299 g/mol   |
|                                | Relative Density (AIR=1):                   | 0.6518       | 3.0710       | 4.0110       | 5.1549 SG       |
|                                | Density:                                    | 0.04976      | 0.23441      | 0.30611      | 0.39343 lbm/scf |
|                                | Compressibility Factor:                     | 0.9972       | 0.9890       | 0.9970       | 0.9997 Z        |
|                                | Liquid Volume real gas @:                   | <b>14.65</b> | 18.1022      | 0.0817       | 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 underscore) indicates there was no tube pulled for H2S.

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**EXTENDED NATURAL GAS ANALYSIS (\*DHA)**

**DHA COMPONENT LIST**

PRIMARY DB KEY: **05-103-10405** NAME/DESCRIP : **YCF 34-44-1**  
 LEASE #: **PRODUCTION CASING**  
 FIELD/AREA:  
 PROJECT NO. : **202508035** ANALYSIS NO. : **01**  
 COMPANY NAME : **QB ENERGY OPERATING, LLC** ANALYSIS DATE: **AUGUST 13, 2025 10:09**  
 OFFICE / BRANCH: **PARACHUTE, CO** SAMPLE DATE : **AUGUST 01, 2025 09:00**  
 CUSTOMER REF: **TO:**  
 PRODUCER : **EFFECTIVE DATE:**

**\*\*\*FIELD DATA\*\*\***

SAMPLE CYCLE: SAMPLE TYPE:  
 SAMPLE PRES. : **psig** PROBE :  
 FLOW PRES. : **psig** CYLINDER NO. : **ECA-804**  
 LAB PRES: **psig** SAMPLED BY : **NICK CROY**  
 SAMPLE TEMP. : **°f** SAMPLING COMPANY: **QB ENERGY OPERATING LLC**  
 AMBIENT TEMP.: **°f** 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 @<br>14.65 | GPM @<br>14.73 |
|-----------------------|---------|---------|---------|----------------|----------------|
| Helium                | ---     | 0.01    | 0.00    | ---            | ---            |
| Hydrogen              | ---     | 0.62    | 0.07    | ---            | ---            |
| Nitrogen              | ---     | 0.43    | 0.64    | ---            | ---            |
| Carbon Dioxide        | ---     | 0.51    | 1.19    | ---            | ---            |
| Methane               | P1      | 86.3519 | 73.3588 | ---            | ---            |
| Ethane                | P2      | 7.2891  | 11.6065 | 1.943          | 1.954          |
| Propane               | P3      | 2.8543  | 6.6650  | 0.784          | 0.788          |
| i-Butane              | I4      | 0.5975  | 1.8390  | 0.195          | 0.196          |
| Methanol              | X1      | 0.0815  | 0.1383  | 0.010          | 0.010          |
| n-Butane              | P4      | 0.6517  | 2.0058  | 0.205          | 0.206          |
| 2,2-Dimethylpropane   | I5      | 0.0055  | 0.0210  | 0.002          | 0.002          |
| i-Pentane             | I5      | 0.2238  | 0.8551  | 0.082          | 0.082          |
| n-Pentane             | P5      | 0.1676  | 0.6403  | 0.061          | 0.061          |
| 2,2-Dimethylbutane    | I6      | 0.0055  | 0.0251  | 0.002          | 0.002          |
| Cyclopentane          | N5      | 0.0049  | 0.0182  | 0.001          | 0.001          |
| 2,3-Dimethylbutane    | I6      | 0.0099  | 0.0452  | 0.004          | 0.004          |
| 2-Methylpentane       | I6      | 0.0438  | 0.1999  | 0.018          | 0.018          |
| 3-Methylpentane       | I6      | 0.0213  | 0.0972  | 0.009          | 0.009          |
| n-Hexane              | P6      | 0.0501  | 0.2286  | 0.021          | 0.021          |
| 2,2-Dimethylpentane   | I7      | 0.0011  | 0.0058  | 0.001          | 0.001          |
| Methylcyclopentane    | N6      | 0.0151  | 0.0673  | 0.005          | 0.005          |
| 2,4-Dimethylpentane   | I7      | 0.0019  | 0.0101  | 0.001          | 0.001          |
| 2,2,3-Trimethylbutane | I7      | 0.0004  | 0.0021  | 0.000          | 0.000          |
| Benzene               | A6      | 0.0007  | 0.0029  | 0.000          | 0.000          |
| 3,3-Dimethylpentane   | I7      | 0.0004  | 0.0021  | 0.000          | 0.000          |
| Cyclohexane           | N6      | 0.0124  | 0.0553  | 0.004          | 0.004          |
| 2-Methylhexane        | I7      | 0.0056  | 0.0297  | 0.003          | 0.003          |
| 2,3-Dimethylpentane   | I7      | 0.0014  | 0.0074  | 0.001          | 0.001          |

|                               |     |                  |                  |               |               |
|-------------------------------|-----|------------------|------------------|---------------|---------------|
| 1,1-Dimethylcyclopentane      | N7  | 0.0010           | 0.0052           | 0.000         | 0.000         |
| 3-Methylhexane                | I7  | 0.0044           | 0.0233           | 0.002         | 0.002         |
| 1c,3-Dimethylcyclopentane     | N7  | 0.0014           | 0.0073           | 0.001         | 0.001         |
| 1t,3-Dimethylcyclopentane     | N7  | 0.0012           | 0.0062           | 0.001         | 0.001         |
| 3-Ethylpentane                | I7  | 0.0002           | 0.0011           | 0.000         | 0.000         |
| 1t,2-Dimethylcyclopentane     | N7  | 0.0018           | 0.0094           | 0.001         | 0.001         |
| UnknownC6s                    | U6  | 0.0002           | 0.0009           | 0.000         | 0.000         |
| n-Heptane                     | P7  | 0.0086           | 0.0456           | 0.004         | 0.004         |
| 1c,2-Dimethylcyclopentane     | N7  | 0.0025           | 0.0130           | 0.001         | 0.001         |
| Methylcyclohexane             | N7  | 0.0075           | 0.0390           | 0.003         | 0.003         |
| 2,2-Dimethylhexane            | I8  | 0.0002           | 0.0012           | 0.000         | 0.000         |
| 1,1,3-Trimethylcyclopentane   | N7  | 0.0001           | 0.0006           | 0.000         | 0.000         |
| Ethylcyclopentane             | N7  | 0.0003           | 0.0015           | 0.000         | 0.000         |
| 2,5-Dimethylhexane            | I8  | 0.0002           | 0.0012           | 0.000         | 0.000         |
| 2,2,3-Trimethylpentane        | I8  | 0.0002           | 0.0012           | 0.000         | 0.000         |
| 1c,2t,4-Trimethylcyclopentane | N8  | 0.0001           | 0.0006           | 0.000         | 0.000         |
| Toluene                       | A7  | 0.0003           | 0.0015           | 0.000         | 0.000         |
| 2,3-Dimethylhexane            | I8  | 0.0001           | 0.0006           | 0.000         | 0.000         |
| 2-Methylheptane               | I8  | 0.0004           | 0.0024           | 0.000         | 0.000         |
| 4-Methylheptane               | I8  | 0.0001           | 0.0006           | 0.000         | 0.000         |
| 3-Methylheptane               | I8  | 0.0003           | 0.0018           | 0.000         | 0.000         |
| 1c,2t,3-Trimethylcyclopentane | N8  | 0.0003           | 0.0018           | 0.000         | 0.000         |
| 3-Ethylhexane                 | I8  | 0.0001           | 0.0006           | 0.000         | 0.000         |
| 1t,4-Dimethylcyclohexane      | N8  | 0.0002           | 0.0012           | 0.000         | 0.000         |
| 1t,3-Dimethylcyclohexane      | N8  | 0.0001           | 0.0006           | 0.000         | 0.000         |
| n-Octane                      | P8  | 0.0004           | 0.0024           | 0.000         | 0.000         |
| 1c,4-Dimethylcyclohexane      | N8  | 0.0001           | 0.0006           | 0.000         | 0.000         |
| n-Propylbenzene               | A9  | 0.0001           | 0.0006           | 0.000         | 0.000         |
| 3-Ethyloctane                 | I10 | 0.0001           | 0.0007           | 0.000         | 0.000         |
| n-Undecane                    | P11 | 0.0001           | 0.0008           | 0.000         | 0.000         |
| <b>TOTAL</b>                  |     | <b>100.00000</b> | <b>100.00000</b> | <b>3.3648</b> | <b>3.3829</b> |

**CALCULATED VALUES\*\***

| BTEX COMPONENTS | MOLE%  | WT%    | BTU @                                      | 14.65       | 14.73           |
|-----------------|--------|--------|--|-------------|-----------------|
| BENZENE         | 0.0007 | 0.0029 | LHV NET DRY REAL :                         | 1032.4 /scf | 1038.1 /scf     |
| TOLUENE         | 0.0003 | 0.0015 | NET WET REAL :                             | 1014.4 /scf | 1020.1 /scf     |
| ETHYLBENZENE    | 0.0000 | 0.0000 | HHV GROSS DRY REAL :                       | 1141.9 /scf | 1148.1 /scf     |
| XYLENES         | 0.0000 | 0.0000 | GROSS WET REAL :                           | 1121.9 /scf | 1128.1 /scf     |
| TOTAL BTEX      | 0.0010 | 0.0044 | NET HEATING VALUE (60 °F ideal reaction):  |             | 20764.9 Btu/lbm |
|                 |        |        | GROSS HEATING VALUE (60°F ideal reaction): |             | 22958.3 Btu/lbm |
|                 |        |        | RELATIVE DENSITY (AIR=1):                  |             | 0.6518          |
|                 |        |        | DENSITY                                    |             | 0.04976 lb/scf  |
|                 |        |        | COMPRESSIBILITY FACTOR :                   |             | 0.9972          |
|                 |        |        | REGULAR WOBBE INDEX                        |             | 1414.9          |

\*(DETAILED HYDROCARBON ANALYSIS/NJ 1993)

Mod ASTM D6730,GPA 2261 & GPA 2286.

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

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

|                     |             |                               |                      |                    |
|---------------------|-------------|-------------------------------|----------------------|--------------------|
| Net Dry Ideal BTU   | 4516.4 /scf | Relative Density - SG (Air=1) | 3.071                | <b>C6+ factors</b> |
| Gross Dry Ideal BTU | 4870.1 /scf | Z Compressibility Factor      | 0.98895              | 0.98845            |
| Net Dry Ideal BTU   | 19345 /lb   | Density Factor                | 234.411 lbm/1000 ft3 |                    |
| Gross Dry Ideal BTU | 20859.7 /lb | Molar Mass or MW              | 88.957 g/mol         |                    |
|                     |             | Volume Liquid Ideal gas       | 0.082 scf/gal        | 24                 |

**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.**

The data presented herein has been acquired by means of current analytical techniques and represents the judicious conclusion EMPACT Analytical Systems, Inc. Results of the analysis can be affected by the sampling conditions, therefore, are only warranted through proper lab protocol. EMPACT assumes no responsibility for interpretation or any consequences from application of the reported information and is the sole liability of the user. The reproduction in any media of this reported information may not be made, in portion or as a whole, without the written permission of EMPACT Analytical Systems, Inc.