



**ISOTOPIC NATURAL GAS ANALYSIS**

PRIMARY DB KEY: **05-045-13234** NAME/DESCRIP : **110170177 UNOCAL 23A-4D**  
 LEASE #: CASING  
 FIELD/AREA:

PROJECT NO. : **202506106** ANALYSIS NO. : **04**  
 COMPANY NAME : **QB ENERGY OPERATING, LLC** ANALYSIS DATE: JULY 02, 2025 00:00  
 OFFICE / BRANCH: PARACHUTE, CO SAMPLE DATE : JUNE 10, 20255  
 CUSTOMER REF: TO:  
 PRODUCER : QB ENERGY OPERATING, LLC EFFECTIVE DATE:

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

SAMPLE CYCLE: SAMPLE TYPE: SPOT  
 SAMPLE PRES. : 815 psig PROBE : NO PROBE  
 FLOW PRES. : psig CYLINDER NO. : ECA-740  
 LAB PRES: psig SAMPLED BY : MIKE KELLEY  
 SAMPLE TEMP. : 64 °f SAMPLING COMPANY: QB ENERGY  
 AMBIENT TEMP.: °f H2S BY STAIN TUBE: - ppm mol  
 H2O BY STAIN TUBE: - #/mmcf CO2 BY STAIN TUBE: - Mol %  
 FIELD COMMENTS:  
 LAB COMMENTS:

COMPONENTS	NORM. MOLE%	GPM @ 14.65	d13C ‰ VPDB	dD ‰ VSMOW
HELIUM	0.00	-	-	-
HYDROGEN	0.03	-	-	-
OXYGEN/ARGON	0.00	-	-	-
NITROGEN	0.07	-	-	-
CO2	3.42	-	-5.8	-
METHANE	87.40	-	-37.1	-174
ETHANE	6.40	1.7061	-25.9	-
PROPANE	1.45	0.3978	-22.4	-
ISOBUTANE	0.41	0.1339	-23.7	-
N-BUTANE	0.26	0.0820	-23.3	-
ISOPENTANE	0.18	0.0620	-22.2	-
N-PENTANE	0.09	0.0330	0.0	-
HEXANES+	0.29	0.1339	-	-
<b>TOTAL</b>	<b>100.00</b>	<b>2.5487</b>		

BTU @ 60 DEG F

**14.65**

GROSS DRY REAL = 1079.9 /scf  
 GROSS SATURATED REAL = 1061.0 /scf

RELATIVE DENSITY (AIR=1 @14.696 PSIA 60F) 0.6551  
 GRAVITY (LB/SCF) 0.05000  
 COMPRESSIBILITY FACTOR : 0.99740

NOTE: REFERENCE GPA 2261(ASTM D1945 & ASME-PTC), 2145, & 2172 CURRENT PUBLICATIONS

**Reference:** Per GPA 2172-14 sec 9 **The C6+ is derived from the following ratios of C6, C7 & C8+ respectively: 60% 30% 10%**

The NG Composition File #: **202506106-04-A-456**  
 The Isotopic Data File #: **DIG-040296**

Note:Stable isotope results based on multi-point laboratory calibration

Precision δ<sup>13</sup>C < 0.5 ‰ Precision δD < 5.0 ‰

Values in red represent low peak heights. Interpret with caution.

*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.*