



ISOTOPIC NATURAL GAS ANALYSIS

PRIMARY DB KEY:	05-045-20182	NAME/DESCRIP :	K28W BENJAMIN FEDERAL 33-4B
LEASE #:	05-045-20182		SURFACE CASING
FIELD/AREA:	MAMM CREEK		
PROJECT NO. :	202512128	ANALYSIS NO. :	02
COMPANY NAME :	QB ENERGY OPERATING, LLC	ANALYSIS DATE:	JANUARY 12, 2026 00:00
OFFICE / BRANCH:	PARACHUTE, CO	SAMPLE DATE :	DECEMBER 18, 2025
CUSTOMER REF:		TO:	
PRODUCER :	QB ENERGY OPERATING, LLC	EFFECTIVE DATE:	
FIELD DATA			
SAMPLE CYCLE:		SAMPLE TYPE:	SPOT
SAMPLE PRES. :	127 psig	PROBE :	
FLOW PRES. :	psig	CYLINDER NO. :	ECA-735
LAB PRES:	psig	SAMPLED BY :	KRIS GIBSON
SAMPLE TEMP. :	°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	0.02	-	-	-
HYDROGEN	0.00	-	-	-
OXYGEN/ARGON	0.00	-	-	-
NITROGEN	0.10	-	-	-
CO2	3.32	-	-3.2	-
METHANE	86.74	-	-39.2	-169
ETHANE	6.28	1.6723	-27.2	-
PROPANE	1.93	0.5278	-24.2	-
ISOBUTANE	0.43	0.1369	-24.6	-
N-BUTANE	0.41	0.1289	-23.5	-
ISOPENTANE	0.21	0.0730	-24.1	-
N-PENTANE	0.15	0.0540	-23.8	-
HEXANES+	0.41	0.2809	-	-
TOTAL	100.00	2.8738		

BTU @ 60 DEG F

	14.65	
GROSS DRY REAL =	1107.4	/scf
GROSS SATURATED REAL =	1088.0	/scf

RELATIVE DENSITY (AIR=1 @14.696 PSIA 60F)	0.6712
GRAVITY (LB/SCF)	0.05123
COMPRESSIBILITY FACTOR :	0.99730

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 #: **202512128-02-A-608**
 The Isotopic Data File #: **DIG-042535**

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

Precision δ¹³C < 0.5 ‰ Precision δD < 5.0 ‰

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

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