



ISOTOPIC ANALYSIS

PROJECT NO. : 200904091 ANALYSIS NO. : 01
COMPANY NAME : COLTON LIMITED LIABILITY ANALYSIS DATE: MAY 7, 2009
ACCOUNT NO. : SAMPLE DATE : DECEMBER 22, 2008
PRODUCER : TO:
LEASE NO. : CYLINDER NO. : ISOTUBE
NAME/DESCRIP : WERNING 1-3B

05-123-25130

FIELD DATA

SAMPLED BY : AMBIENT TEMP.:
SAMPLE PRES. : GRAVITY :
SAMPLE TEMP. : VAPOR PRES. :
COMMENTS :

COMPONENTS	CHEMICAL mol. %	DELTA 13C per mil	DELTA D per mil	DELTA 15N per mil
HYDROGEN SULFIDE	ND			
HELIUM	0.012			
HYDROGEN	ND			
ARGON	ND			
OXYGEN	0.0183			
NITROGEN	0.56			
CO2	ND			
METHANE	78.93	-48.55	-238.5	
ETHANE	11.07	-33.4		
ETHYLENE	ND			
PROPANE	5.99	-28.52		
ISOBUTANE	0.887			
N-BUTANE	1.44			
ISOPENTANE	0.414			
N-PENTANE	0.313			
HEXANES+	0.365			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 1273

Specific gravity, calculated: 0.725

Note: ND= not detected. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%.

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• Subj: **EMPACT Project #200904091-Werning 13B**
Date: 5/8/2009 9:13:31 A.M. Mountain Daylight Time
From: jeanie@empactanalytical.com
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Good Morning: Attaching (1) Isotopic Report. If you have any questions regarding the results, please contact Burl McEndree.

Thank You,
Jeanie

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