

Lab #: 235497 Job #: 17407
 Sample Name/Number: HW01
 Company: TechLaw, Inc.
 Date Sampled: 1/25/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: A3TA
 Location:
 Formation/Depth:
 Sampling Point:
 Date Received: 2/03/2012 Date Reported: 2/20/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	0.0747			
Hydrogen -----	nd			
Argon -----	0.683			
Oxygen -----	0.20			
Nitrogen -----	49.91			
Carbon Dioxide -----	0.005			
Methane -----	48.69	-36.80	-202.4	
Ethane -----	0.432	-31.58	-177	
Ethylene -----	nd			
Propane -----	0.0004			
Propylene -----	0.0001			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			
Water -----			-65.1	-9.81

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 501

Specific gravity, calculated: 0.769

Remarks:

** Ethane hydrogen isotopes obtained online via GC-C-IRMS. Added to the report on 4/26/2012.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.