

Lab #: 705294 Job #: 40810 IS-99230 Co. Job#:

Sample Name: BW_Hansen_136017 Co. Lab#:

Company: Axis Exploration, LLC

API/Well:

Container: IsoFlask

Field/Site Name: BWSE/GWA_Houlihan_4_64_22A

Location: SWNW_23_4S_64W

Formation/Depth: 1SUB

Sampling Point: 755926

Date Sampled: 2/04/2019 12:00 Date Received: 2/20/2019 Date Reported: 2/27/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide -----	nd					
Helium -----	na					
Hydrogen -----	nd					
Argon -----	0.957					
Oxygen -----	1.21					
Nitrogen -----	39.99					
Carbon Dioxide -----	1.49					
Methane -----	56.33	-83.52	-296.6		19	13
Ethane -----	0.0226				0.0084	0.011
Ethylene -----	nd					
Propane -----	nd				< 0.0001	< 0.0002
Propylene -----	nd					
Iso-butane -----	nd					
N-butane -----	nd					
Iso-pentane -----	nd					
N-pentane -----	nd					
Hexanes + -----	nd					

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.73

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

AFE # 221706; Code: 961.15

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.