



Lab #: 702925      Job #: 40722      IS-69033      Co. Job#:  
 Sample Name: BW\_NGL\_78801\_F\_R      Co. Lab#:  
 Company: Anadarko  
 API/Well:  
 Container: IsoFlask  
 Field/Site Name: BWSE/GWA\_NGL\_Water\_Well  
 Location: SESE\_30\_3N\_65W  
 Formation/Depth: Q1  
 Sampling Point: 755053  
 Date Sampled: 2/04/2019 12:52      Date Received: 2/07/2019      Date Reported: 2/26/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{18}\text{O}$ ‰	Dissolved gas cc/L	Dissolved gas ppm
Carbon Monoxide -----	nd					
Helium -----	na					
Hydrogen -----	nd					
Argon -----	0.755				0.30	0.51
Oxygen -----	3.90					
Nitrogen -----	33.50				12	14
Carbon Dioxide -----	2.27					
Methane -----	59.02	-72.98	-262.7		24	16
Ethane -----	0.441	-34.6			0.19	0.24
Ethylene -----	nd					
Propane -----	0.0824	-27.2			0.034	0.062
Propylene -----	nd					
Iso-butane -----	0.0117					
N-butane -----	0.0129					
Iso-pentane -----	0.0028					
N-pentane -----	0.0012					
Hexanes + -----	0.0004					

**Remarks:**

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.75

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

WO#89225208 Ethane and propane carbon isotope data obtained online via GC-C-IRMS. Insufficient butane and pentane concentrations for isotopic analysis.

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. %.