

Lab #: 720065 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Canyon Creek 8-6-13 / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 415296
 Date Sampled: 4/25/2019 10:00 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0102			
Hydrogen -----	nd			
Argon -----	0.0064			
Oxygen + Argon -----	na			
Nitrogen -----	0.61			
Carbon Dioxide -----	1.62	2.6		
Methane -----	77.56	-47.6	-236	
Ethane -----	12.26	-32.0		
Ethylene -----	0.0008			
Propane -----	5.15	-28.3		
Propylene -----	0.0002			
Iso-butane -----	0.676	-31.0		
N-butane -----	1.45	-27.5		
Iso-pentane -----	0.231	-28.2		
N-pentane -----	0.210	-27.3		
Hexanes + -----	0.0843			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1228

Specific gravity, calculated: 0.724

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720066 Job #: 41679 IS-94649 Co. Job#: _____
 Sample Name: Canyon Creek 8-6-13 / Surface CSG Co. Lab#: _____
 Company: Crestone Peak Resources
 API/Well: _____
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location: _____
 Formation: _____
 Sampling Point: 415296
 Date Sampled: 4/25/2019 10:00 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0146			
Hydrogen -----	nd			
Argon -----	0.0061			
Oxygen + Argon -----	na			
Nitrogen -----	0.77			
Carbon Dioxide -----	nd			
Methane -----	79.94	-48.3	-240	
Ethane -----	11.20	-32.6		
Ethylene -----	nd			
Propane -----	4.97	-28.5		
Propylene -----	nd			
Iso-butane -----	0.667	-31.2		
N-butane -----	1.50	-27.3		
Iso-pentane -----	0.347	-28.4		
N-pentane -----	0.322	-27.4		
Hexanes + -----	0.163			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1243

Specific gravity, calculated: 0.708

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720067 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Canyon Creek 4-8-13 / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 417051
 Date Sampled: 4/25/2019 10:30 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0080			
Hydrogen -----	0.0375			
Argon -----	0.0060			
Oxygen -----	0.12			
Nitrogen -----	0.54			
Carbon Dioxide -----	1.90	2.86		
Methane -----	74.38	-47.70	-234	
Ethane -----	12.81	-31.26		
Ethylene -----	0.0012			
Propane -----	6.13	-27.89		
Propylene -----	nd			
Iso-butane -----	0.974	-30.92		
N-butane -----	2.44	-27.32		
Iso-pentane -----	0.418	-27.46		
N-pentane -----	0.231	-25.53		
Hexanes + -----	0.0062			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1277

Specific gravity, calculated: 0.759

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720068 Job #: 41679 IS-94649 Co. Job#: _____
 Sample Name: Canyon Creek 4-8-13 / Surface CSG Co. Lab#: _____
 Company: Crestone Peak Resources
 API/Well: _____
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location: _____
 Formation: _____
 Sampling Point: 417051
 Date Sampled: 4/25/2019 10:30 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0869			
Hydrogen -----	nd			
Argon -----	0.0205			
Oxygen + Argon -----	na			
Nitrogen -----	3.91			
Carbon Dioxide -----	nd			
Methane -----	87.02	-56.7	-222	
Ethane -----	4.33	-32.3		
Ethylene -----	nd			
Propane -----	2.81	-29.4		
Propylene -----	0.0002			
Iso-butane -----	0.500	-31.5		
N-butane -----	0.726	-28.0		
Iso-pentane -----	0.194	-28.6		
N-pentane -----	0.159	-28.0		
Hexanes + -----	0.116			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1091

Specific gravity, calculated: 0.646

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720069 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Canyon Creek 44-13 / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 415297
 Date Sampled: 4/25/2019 9:30 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0083			
Hydrogen -----	nd			
Argon -----	0.0052			
Oxygen + Argon -----	na			
Nitrogen -----	0.46			
Carbon Dioxide -----	1.88	3.5		
Methane -----	73.07	-47.7	-237	
Ethane -----	13.17	-31.7		
Ethylene -----	0.0022			
Propane -----	6.66	-28.3		
Propylene -----	nd			
Iso-butane -----	1.09	-31.0		
N-butane -----	2.79	-27.4		
Iso-pentane -----	0.476			
N-pentane -----	0.276	-25.9		
Hexanes + -----	0.0030			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1303

Specific gravity, calculated: 0.774

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720070 Job #: 41679 IS-94649 Co. Job#: _____
 Sample Name: Canyon Creek 44-13 / Surface CSG Co. Lab#: _____
 Company: Crestone Peak Resources
 API/Well: _____
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location: _____
 Formation: _____
 Sampling Point: 415297
 Date Sampled: 4/25/2019 9:35 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.148			
Hydrogen -----	nd			
Argon -----	0.0510			
Oxygen + Argon -----	na			
Nitrogen -----	9.48			
Carbon Dioxide -----	nd			
Methane -----	88.49	-60.7	-218	
Ethane -----	0.799	-34.4		
Ethylene -----	nd			
Propane -----	0.363	-29.8		
Propylene -----	nd			
Iso-butane -----	0.108	-31.4		
N-butane -----	0.0621	-28.5		
Iso-pentane -----	0.0252			
N-pentane -----	0.0165	-27.6		
Hexanes + -----	0.0111			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 928

Specific gravity, calculated: 0.606

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720071 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Canyon Creek 4-6-13 / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 415294
 Date Sampled: 4/25/2019 9:05 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0091			
Hydrogen -----	nd			
Argon -----	0.0063			
Oxygen + Argon -----	na			
Nitrogen -----	0.56			
Carbon Dioxide -----	1.78	3.1		
Methane -----	76.27	-47.6	-238	
Ethane -----	13.07	-31.4		
Ethylene -----	0.0013			
Propane -----	5.71	-27.3		
Propylene -----	0.0001			
Iso-butane -----	0.733	-30.6		
N-butane -----	1.39	-26.8		
Iso-pentane -----	0.176			
N-pentane -----	0.130	-26.6		
Hexanes + -----	0.0421			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1236

Specific gravity, calculated: 0.731

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720072 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Canyon Creek 4-6-13 / Surface CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 415294
 Date Sampled: 4/25/2019 9:05 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.137			
Hydrogen -----	nd			
Argon -----	0.0566			
Oxygen + Argon -----	na			
Nitrogen -----	10.12			
Carbon Dioxide -----	nd			
Methane -----	87.61	-60.8	-225	
Ethane -----	0.759	-34.2		
Ethylene -----	nd			
Propane -----	0.406	-30.5		
Propylene -----	nd			
Iso-butane -----	0.126	-31.4		
N-butane -----	0.0694	-28.7		
Iso-pentane -----	0.0272	-28.7		
N-pentane -----	0.0146	-27.9		
Hexanes + -----	0.0187			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 921

Specific gravity, calculated: 0.611

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720073 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Canyon Creek 34-13 / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 415309
 Date Sampled: 4/25/2019 9:00 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0092			
Hydrogen -----	nd			
Argon -----	0.0108			
Oxygen + Argon -----	na			
Nitrogen -----	1.00			
Carbon Dioxide -----	1.93	3.4		
Methane -----	73.93	-48.1	-238	
Ethane -----	12.57	-31.6		
Ethylene -----	0.0019			
Propane -----	5.99	-28.1		
Propylene -----	nd			
Iso-butane -----	0.949	-30.9		
N-butane -----	2.29	-27.4		
Iso-pentane -----	0.543			
N-pentane -----	0.501	-26.6		
Hexanes + -----	0.0475			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1277

Specific gravity, calculated: 0.765

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720074 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Canyon Creek 34-13 / Surface CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 415309
 Date Sampled: 4/25/2019 9:00 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.106			
Hydrogen -----	nd			
Argon -----	0.0270			
Oxygen + Argon -----	na			
Nitrogen -----	5.87			
Carbon Dioxide -----	nd			
Methane -----	87.80	-58.0	-226	
Ethane -----	3.43	-32.3		
Ethylene -----	nd			
Propane -----	1.55	-29.0		
Propylene -----	nd			
Iso-butane -----	0.290	-31.2		
N-butane -----	0.438	-27.5		
Iso-pentane -----	0.128			
N-pentane -----	0.112	-27.2		
Hexanes + -----	0.111			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1029

Specific gravity, calculated: 0.628

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720075 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Lumry 31-24 / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 333
 Date Sampled: 4/25/2019 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0074			
Hydrogen -----	1.12			
Argon -----	0.116			
Oxygen + Argon -----	na			
Nitrogen -----	10.43			
Carbon Dioxide -----	0.27	-4.2		
Methane -----	64.67	-48.0	-240	
Ethane -----	11.91	-31.7		
Ethylene -----	0.0014			
Propane -----	6.08	-28.3		
Propylene -----	0.0002			
Iso-butane -----	1.07	-31.0		
N-butane -----	2.64	-27.4		
Iso-pentane -----	0.705			
N-pentane -----	0.696	-26.6		
Hexanes + -----	0.163			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1212

Specific gravity, calculated: 0.797

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720076 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Lumry 31-24 / Surface CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 333
 Date Sampled: 4/25/2019 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0575			
Hydrogen -----	nd			
Argon -----	0.0127			
Oxygen + Argon -----	na			
Nitrogen -----	2.39			
Carbon Dioxide -----	nd			
Methane -----	84.66	-54.7	-231	
Ethane -----	6.85	-32.9		
Ethylene -----	nd			
Propane -----	3.93	-29.5		
Propylene -----	0.0001			
Iso-butane -----	0.603	-30.7		
N-butane -----	0.876	-27.3		
Iso-pentane -----	0.232	-27.9		
N-pentane -----	0.141	-25.9		
Hexanes + -----	0.147			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1151

Specific gravity, calculated: 0.668

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720077 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Lumry 6-4-24 / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 332
 Date Sampled: 4/26/2019 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0092			
Hydrogen -----	nd			
Argon -----	0.0682			
Oxygen + Argon -----	na			
Nitrogen -----	6.15			
Carbon Dioxide -----	0.066	-9.6		
Methane -----	69.74	-48.1	-241	
Ethane -----	12.25	-31.7		
Ethylene -----	0.0014			
Propane -----	6.21	-28.4		
Propylene -----	0.0001			
Iso-butane -----	1.03	-31.0		
N-butane -----	2.65	-27.6		
Iso-pentane -----	0.698			
N-pentane -----	0.752	-26.9		
Hexanes + -----	0.196			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1272

Specific gravity, calculated: 0.787

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720078 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Lumry 6-4-24 / Surface CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 332
 Date Sampled: 4/26/2019 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0652			
Hydrogen -----	nd			
Argon -----	0.0503			
Oxygen + Argon -----	na			
Nitrogen -----	5.75			
Carbon Dioxide -----	0.012			
Methane -----	82.04	-55.6	-228	
Ethane -----	5.61	-32.7		
Ethylene -----	nd			
Propane -----	3.57	-30.0		
Propylene -----	0.0003			
Iso-butane -----	0.554	-31.6		
N-butane -----	0.889	-28.3		
Iso-pentane -----	0.210	-28.4		
N-pentane -----	0.156	-27.5		
Hexanes + -----	0.130			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1091

Specific gravity, calculated: 0.676

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720079 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Bailey 43-12 / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 283757
 Date Sampled: 5/02/2019 13:45 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0123			
Hydrogen -----	nd			
Argon -----	0.0061			
Oxygen + Argon -----	na			
Nitrogen -----	0.64			
Carbon Dioxide -----	1.58	2.3		
Methane -----	75.76	-47.7	-244	
Ethane -----	11.68	-32.4		
Ethylene -----	0.0001			
Propane -----	5.51	-28.5		
Propylene -----	nd			
Iso-butane -----	0.878	-31.2		
N-butane -----	2.17	-27.6		
Iso-pentane -----	0.591	-28.7		
N-pentane -----	0.668	-27.9		
Hexanes + -----	0.395			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1287

Specific gravity, calculated: 0.761

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720080 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Bailey 43-12 / Surface CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 283757
 Date Sampled: 5/02/2019 13:45 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0277			
Hydrogen -----	nd			
Argon -----	0.0141			
Oxygen + Argon -----	na			
Nitrogen -----	1.63			
Carbon Dioxide -----	nd			
Methane -----	81.60	-50.5	-250	
Ethane -----	9.96	-33.7		
Ethylene -----	nd			
Propane -----	4.44	-29.6		
Propylene -----	nd			
Iso-butane -----	0.562	-31.7		
N-butane -----	1.05	-28.3		
Iso-pentane -----	0.206	-28.6		
N-pentane -----	0.173	-28.0		
Hexanes + -----	0.0882			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1190

Specific gravity, calculated: 0.686

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720081 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Woolley 4-0-7 / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 421635
 Date Sampled: 5/02/2019 12:50 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0088			
Hydrogen -----	nd			
Argon -----	0.0218			
Oxygen + Argon -----	na			
Nitrogen -----	2.10			
Carbon Dioxide -----	1.58	3.0		
Methane -----	73.28	-47.2	-242	
Ethane -----	13.35	-32.4		
Ethylene -----	nd			
Propane -----	6.03	-29.2		
Propylene -----	nd			
Iso-butane -----	0.888	-31.5		
N-butane -----	1.99	-27.8		
Iso-pentane -----	0.205	-27.7		
N-pentane -----	0.0558	-26.2		
Hexanes + -----	0.0018			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1239

Specific gravity, calculated: 0.751

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720082 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Woolley 4-0-7 / Surface CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 421635
 Date Sampled: 5/02/2019 12:50 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0222			
Hydrogen -----	nd			
Argon -----	0.0348			
Oxygen + Argon -----	na			
Nitrogen -----	3.39			
Carbon Dioxide -----	0.012			
Methane -----	78.04	-49.4	-249	
Ethane -----	9.93	-33.6		
Ethylene -----	nd			
Propane -----	5.02	-29.6		
Propylene -----	nd			
Iso-butane -----	0.661	-31.6		
N-butane -----	1.39	-28.4		
Iso-pentane -----	0.280	-28.4		
N-pentane -----	0.265	-27.9		
Hexanes + -----	0.167			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1193

Specific gravity, calculated: 0.714

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720083 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Mc Peek 0-8-10 / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 431852
 Date Sampled: 5/10/2019 15:00 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0077			
Hydrogen -----	nd			
Argon -----	0.0050			
Oxygen + Argon -----	na			
Nitrogen -----	0.57			
Carbon Dioxide -----	2.26	3.7		
Methane -----	75.07	-48.2	-249	
Ethane -----	13.13	-33.2		
Ethylene -----	nd			
Propane -----	5.67	-29.1		
Propylene -----	nd			
Iso-butane -----	0.720	-31.4		
N-butane -----	1.68	-28.0		
Iso-pentane -----	0.327	-28.4		
N-pentane -----	0.360	-27.5		
Hexanes + -----	0.0981			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1251

Specific gravity, calculated: 0.748

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720084 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Mc Peek 0-8-10 / Surface CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 431852
 Date Sampled: 5/10/2019 15:00 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0390			
Hydrogen -----	nd			
Argon -----	0.115			
Oxygen + Argon -----	na			
Nitrogen -----	11.44			
Carbon Dioxide -----	0.019			
Methane -----	74.41	-54.7	-253	
Ethane -----	6.49	-33.7		
Ethylene -----	nd			
Propane -----	3.33	-29.3		
Propylene -----	nd			
Iso-butane -----	0.428	-31.4		
N-butane -----	0.672	-27.9		
Iso-pentane -----	0.162	-28.5		
N-pentane -----	0.175	-27.9		
Hexanes + -----	0.228			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1015

Specific gravity, calculated: 0.708

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720085 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Herren 1E-33H / Surface CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 457033
 Date Sampled: 4/04/2019 10:00 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0062			
Hydrogen -----	2.12			
Argon -----	0.887			
Oxygen + Argon -----	na			
Nitrogen -----	75.61			
Carbon Dioxide -----	0.10	-10.8		
Methane -----	1.10	-50.8	-246	
Ethane -----	0.0293			
Ethylene -----	nd			
Propane -----	0.0024			
Propylene -----	nd			
Iso-butane -----	0.0001			
N-butane -----	0.0002			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0002			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 19

Specific gravity, calculated: 0.976

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720086 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: File 42-17 / Surface CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 424681
 Date Sampled: 4/18/2019 8:08 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0172			
Hydrogen -----	nd			
Argon -----	0.170			
Oxygen + Argon -----	na			
Nitrogen -----	15.43			
Carbon Dioxide -----	0.026			
Methane -----	61.93	-49.5	-251	
Ethane -----	8.75	-34.9		
Ethylene -----	nd			
Propane -----	5.48	-30.3		
Propylene -----	nd			
Iso-butane -----	0.805	-32.1		
N-butane -----	1.98	-28.9		
Iso-pentane -----	0.608	-28.5		
N-pentane -----	0.551	-27.8		
Hexanes + -----	0.216			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1071

Specific gravity, calculated: 0.805

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720087 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Woolley Sosa 2C-7H / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 436731
 Date Sampled: 3/25/2019 16:15 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0156			
Hydrogen -----	nd			
Argon -----	0.0078			
Oxygen + Argon -----	na			
Nitrogen -----	0.83			
Carbon Dioxide -----	0.87	3.2		
Methane -----	90.31	-47.7	-234	
Ethane -----	7.15	-32.4		
Ethylene -----	0.0014			
Propane -----	0.664	-27.6		
Propylene -----	nd			
Iso-butane -----	0.0098			
N-butane -----	0.0025			
Iso-pentane -----	nd			
N-pentane -----	0.0001			
Hexanes + -----	0.0120			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1061

Specific gravity, calculated: 0.608

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720088 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Sam 3K-25H / Surface CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 453459
 Date Sampled: 4/30/2019 10:20 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	96.49			
Argon -----	0.0517			
Oxygen + Argon -----	na			
Nitrogen -----	3.00			
Carbon Dioxide -----	nd			
Methane -----	0.126	-52.6		
Ethane -----	0.0157			
Ethylene -----	0.0020			
Propane -----	0.0088			
Propylene -----	0.0002			
Iso-butane -----	0.0018			
N-butane -----	0.0068			
Iso-pentane -----	0.0035			
N-pentane -----	0.0055			
Hexanes + -----	0.0137			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 316

Specific gravity, calculated: 0.102

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720089 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Sam 3K-25H / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 453459
 Date Sampled: 4/30/2019 10:15 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0078			
Hydrogen -----	nd			
Argon -----	0.0131			
Oxygen + Argon -----	na			
Nitrogen -----	1.50			
Carbon Dioxide -----	0.062	-7.5		
Methane -----	80.83	-50.6	-279	
Ethane -----	10.78	-35.8		
Ethylene -----	nd			
Propane -----	4.61	-31.2		
Propylene -----	nd			
Iso-butane -----	0.468	-32.4		
N-butane -----	1.11	-28.9		
Iso-pentane -----	0.195	-28.3		
N-pentane -----	0.208	-28.4		
Hexanes + -----	0.123			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1203

Specific gravity, calculated: 0.692

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720090 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Sam 3M-25H / Surface CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 453468
 Date Sampled: 4/30/2019 10:07 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0099			
Hydrogen -----	nd			
Argon -----	0.0128			
Oxygen + Argon -----	na			
Nitrogen -----	1.50			
Carbon Dioxide -----	0.063	-5.0		
Methane -----	79.29	-50.4	-277	
Ethane -----	11.26	-35.6		
Ethylene -----	nd			
Propane -----	5.22	-31.0		
Propylene -----	nd			
Iso-butane -----	0.564	-32.6		
N-butane -----	1.35	-29.0		
Iso-pentane -----	0.241	-28.5		
N-pentane -----	0.231	-28.4		
Hexanes + -----	0.125			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1225

Specific gravity, calculated: 0.707

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720091 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Sam 3M-25H / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 453468
 Date Sampled: 4/30/2019 10:08 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0016			
Hydrogen -----	94.40			
Argon -----	0.0624			
Oxygen + Argon -----	na			
Nitrogen -----	4.69			
Carbon Dioxide -----	nd			
Methane -----	0.307	-50.9		
Ethane -----	0.0796	-35.8		
Ethylene -----	0.0033			
Propane -----	0.0456	-31.4		
Propylene -----	0.0004			
Iso-butane -----	0.0049			
N-butane -----	0.0133			
Iso-pentane -----	0.0037			
N-pentane -----	0.0047			
Hexanes + -----	0.0085			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 314

Specific gravity, calculated: 0.120

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720092 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Sam 3O-25H / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 453471
 Date Sampled: 4/30/2019 9:45 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0109			
Hydrogen -----	nd			
Argon -----	0.0130			
Oxygen + Argon -----	na			
Nitrogen -----	1.68			
Carbon Dioxide -----	0.070	-5.9		
Methane -----	83.49	-50.9	-279	
Ethane -----	9.36	-36.0		
Ethylene -----	nd			
Propane -----	3.51	-31.4		
Propylene -----	nd			
Iso-butane -----	0.353	-32.4		
N-butane -----	0.884	-29.3		
Iso-pentane -----	0.174	-28.6		
N-pentane -----	0.202	-28.8		
Hexanes + -----	0.138			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1165

Specific gravity, calculated: 0.670

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720093 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Sam 3O-25H / Surface CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 453471
 Date Sampled: 4/30/2019 9:50 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0022			
Hydrogen -----	97.47			
Argon -----	0.0301			
Oxygen + Argon -----	na			
Nitrogen -----	2.01			
Carbon Dioxide -----	nd			
Methane -----	0.208	-51.1		
Ethane -----	0.0324			
Ethylene -----	0.0011			
Propane -----	0.0138			
Propylene -----	nd			
Iso-butane -----	0.0016			
N-butane -----	0.0047			
Iso-pentane -----	0.0019			
N-pentane -----	0.0030			
Hexanes + -----	0.0080			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 320

Specific gravity, calculated: 0.092

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720094 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Sam 3N-25H / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 453460
 Date Sampled: 4/30/2019 10:00 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0078			
Hydrogen -----	nd			
Argon -----	0.0153			
Oxygen + Argon -----	na			
Nitrogen -----	1.90			
Carbon Dioxide -----	0.033			
Methane -----	79.81	-50.2	-275	
Ethane -----	11.25	-35.5		
Ethylene -----	0.0001			
Propane -----	4.83	-31.0		
Propylene -----	nd			
Iso-butane -----	0.481	-32.5		
N-butane -----	1.13	-29.0		
Iso-pentane -----	0.192	-28.6		
N-pentane -----	0.181	-28.8		
Hexanes + -----	0.0975			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1205

Specific gravity, calculated: 0.697

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720095 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Sam 3N-25H / Surface CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 453460
 Date Sampled: 4/30/2019 10:01 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0015			
Hydrogen -----	95.90			
Argon -----	0.0513			
Oxygen + Argon -----	na			
Nitrogen -----	3.56			
Carbon Dioxide -----	nd			
Methane -----	0.0973	-51.6		
Ethane -----	0.0155			
Ethylene -----	0.0033			
Propane -----	0.0079			
Propylene -----	0.0002			
Iso-butane -----	0.0012			
N-butane -----	0.0038			
Iso-pentane -----	0.0020			
N-pentane -----	0.0030			
Hexanes + -----	0.0103			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 314

Specific gravity, calculated: 0.107

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720096 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: AA 4-0-3 / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 421915
 Date Sampled: 5/14/2019 9:10 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0063			
Hydrogen -----	1.00			
Argon -----	nd			
Oxygen + Argon -----	na			
Nitrogen -----	0.36			
Carbon Dioxide -----	2.78	4.6		
Methane -----	73.98	-46.3	-225	
Ethane -----	11.60	-29.3		
Ethylene -----	0.0005			
Propane -----	4.97	-25.7		
Propylene -----	nd			
Iso-butane -----	1.03	-29.5		
N-butane -----	2.13	-25.7		
Iso-pentane -----	0.876	-27.1		
N-pentane -----	0.858	-24.6		
Hexanes + -----	0.322			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1276

Specific gravity, calculated: 0.769

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720097 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: AA 4-0-3 / Surface CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 421915
 Date Sampled: 5/14/2019 9:15 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0101			
Hydrogen -----	nd			
Argon -----	0.0202			
Oxygen + Argon -----	na			
Nitrogen -----	1.93			
Carbon Dioxide -----	nd			
Methane -----	78.59	-47.7	-236	
Ethane -----	11.04	-33.4		
Ethylene -----	nd			
Propane -----	5.10	-28.7		
Propylene -----	nd			
Iso-butane -----	0.760	-31.1		
N-butane -----	1.25	-27.3		
Iso-pentane -----	0.358	-28.3		
N-pentane -----	0.241	-26.4		
Hexanes + -----	0.294			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1227

Specific gravity, calculated: 0.715

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720098 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Rasmussen H 1 / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 244563
 Date Sampled: 5/14/2019 10:00 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0143			
Hydrogen -----	nd			
Argon -----	0.0054			
Oxygen + Argon -----	na			
Nitrogen -----	0.59			
Carbon Dioxide -----	0.70	-1.4		
Methane -----	79.91	-48.0	-242	
Ethane -----	12.51	-32.6		
Ethylene -----	nd			
Propane -----	4.66	-28.7		
Propylene -----	nd			
Iso-butane -----	0.510	-31.2		
N-butane -----	0.745	-27.6		
Iso-pentane -----	0.0792	-27.7		
N-pentane -----	0.0503	-26.3		
Hexanes + -----	0.140			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1205

Specific gravity, calculated: 0.693

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720099 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Rasmussen H 1 / Surface CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 244563
 Date Sampled: 5/14/2019 10:05 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0252			
Hydrogen -----	nd			
Argon -----	0.0119			
Oxygen + Argon -----	na			
Nitrogen -----	1.53			
Carbon Dioxide -----	0.70	-8.5		
Methane -----	79.93	-51.1	-253	
Ethane -----	9.56	-35.2		
Ethylene -----	nd			
Propane -----	5.27	-30.5		
Propylene -----	nd			
Iso-butane -----	0.613	-32.2		
N-butane -----	1.39	-29.2		
Iso-pentane -----	0.293	-28.6		
N-pentane -----	0.268	-28.3		
Hexanes + -----	0.195			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1212

Specific gravity, calculated: 0.710

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720100 Job #: 41679 IS-94649 Co. Job#: _____
 Sample Name: Bearden 24-6 / Production CSG Co. Lab#: _____
 Company: Crestone Peak Resources
 API/Well: _____
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location: _____
 Formation: _____
 Sampling Point: 282845
 Date Sampled: 5/14/2019 8:50 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.130			
Hydrogen -----	nd			
Argon -----	0.0060			
Oxygen + Argon -----	na			
Nitrogen -----	0.71			
Carbon Dioxide -----	1.26	1.1		
Methane -----	80.72	-48.0	-247	
Ethane -----	12.06	-32.6		
Ethylene -----	0.0011			
Propane -----	3.24	-29.0		
Propylene -----	nd			
Iso-butane -----	0.340	-31.9		
N-butane -----	1.13	-28.0		
Iso-pentane -----	0.164			
N-pentane -----	0.133	-27.3		
Hexanes + -----	0.0137			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1177

Specific gravity, calculated: 0.686

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720101 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Bearden 24-6 / Surface CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 282845
 Date Sampled: 5/14/2019 8:45 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0307			
Hydrogen -----	nd			
Argon -----	0.0132			
Oxygen + Argon -----	na			
Nitrogen -----	1.48			
Carbon Dioxide -----	nd			
Methane -----	81.61	-50.2	-249	
Ethane -----	9.89	-33.1		
Ethylene -----	nd			
Propane -----	4.30	-28.8		
Propylene -----	nd			
Iso-butane -----	0.574	-31.4		
N-butane -----	1.21	-27.9		
Iso-pentane -----	0.274	-28.4		
N-pentane -----	0.274	-27.8		
Hexanes + -----	0.186			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1203

Specific gravity, calculated: 0.692

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720102 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Wiggett 7-0-13 / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 296636
 Date Sampled: 5/14/2019 11:00 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0098			
Hydrogen -----	nd			
Argon -----	0.0074			
Oxygen + Argon -----	na			
Nitrogen -----	0.58			
Carbon Dioxide -----	1.37	2.9		
Methane -----	77.84	-46.7	-239	
Ethane -----	13.23	-31.5		
Ethylene -----	nd			
Propane -----	4.87	-28.2		
Propylene -----	nd			
Iso-butane -----	0.550	-31.2		
N-butane -----	1.05	-27.5		
Iso-pentane -----	0.189	-28.3		
N-pentane -----	0.167	-27.1		
Hexanes + -----	0.0204			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1217

Specific gravity, calculated: 0.712

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720103 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Wiggett 7-0-13 / Surface CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 296636
 Date Sampled: 5/14/2019 11:05 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0840			
Hydrogen -----	nd			
Argon -----	0.0239			
Oxygen + Argon -----	na			
Nitrogen -----	3.76			
Carbon Dioxide -----	nd			
Methane -----	81.74	-57.0	-236	
Ethane -----	6.18	-33.3		
Ethylene -----	nd			
Propane -----	5.31	-29.8		
Propylene -----	nd			
Iso-butane -----	0.888	-31.7		
N-butane -----	1.09	-28.5		
Iso-pentane -----	0.278	-28.5		
N-pentane -----	0.240	-27.7		
Hexanes + -----	0.209			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1170

Specific gravity, calculated: 0.696

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720104 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Wiggett 8-2-13 / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 294432
 Date Sampled: 5/14/2019 11:20 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0138			
Hydrogen -----	nd			
Argon -----	0.0065			
Oxygen + Argon -----	na			
Nitrogen -----	0.70			
Carbon Dioxide -----	1.64	3.2		
Methane -----	76.81	-47.0	-239	
Ethane -----	12.33	-31.4		
Ethylene -----	0.0001			
Propane -----	5.24	-28.0		
Propylene -----	nd			
Iso-butane -----	0.737	-31.0		
N-butane -----	1.63	-27.4		
Iso-pentane -----	0.350	-28.4		
N-pentane -----	0.346	-27.2		
Hexanes + -----	0.0670			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1241

Specific gravity, calculated: 0.733

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720105 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Wiggett 8-2-13 / Surface CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 294432
 Date Sampled: 5/14/2019 11:25 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0239			
Hydrogen -----	nd			
Argon -----	0.267			
Oxygen + Argon -----	na			
Nitrogen -----	23.36			
Carbon Dioxide -----	0.034			
Methane -----	56.78	-50.1	-241	
Ethane -----	7.71	-32.0		
Ethylene -----	nd			
Propane -----	3.64	-28.7		
Propylene -----	nd			
Iso-butane -----	0.492	-31.5		
N-butane -----	0.954	-28.5		
Iso-pentane -----	0.181	-28.6		
N-pentane -----	0.168	-28.3		
Hexanes + -----	0.138			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 873

Specific gravity, calculated: 0.791

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720106 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Canyon Creek 4-13 / Production CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 429576
 Date Sampled: 4/25/2019 10:30 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0103			
Hydrogen -----	0.0669			
Argon -----	0.0088			
Oxygen -----	0.18			
Nitrogen -----	0.79			
Carbon Dioxide -----	1.94	2.80		
Methane -----	74.46	-47.68	-237	
Ethane -----	12.66	-31.25		
Ethylene -----	0.0007			
Propane -----	5.91	-27.85		
Propylene -----	nd			
Iso-butane -----	0.882	-30.87		
N-butane -----	2.10	-27.29		
Iso-pentane -----	0.427	-27.75		
N-pentane -----	0.422	-26.63		
Hexanes + -----	0.140			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1270

Specific gravity, calculated: 0.758

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 720107 Job #: 41679 IS-94649 Co. Job#:
 Sample Name: Canyon Creek 4-13 / Surface CSG Co. Lab#:
 Company: Crestone Peak Resources
 API/Well:
 Container: IsoTube®
 Field/Site Name: Bradenhead Testing
 Location:
 Formation:
 Sampling Point: 429576
 Date Sampled: 4/25/2019 10:10 Date Received: 5/24/2019 Date Reported: 7/08/2019

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0783			
Hydrogen -----	nd			
Argon -----	0.0355			
Oxygen + Argon -----	na			
Nitrogen -----	5.09			
Carbon Dioxide -----	nd			
Methane -----	85.05	-54.8	-232	
Ethane -----	5.43	-32.6		
Ethylene -----	nd			
Propane -----	2.46	-28.3		
Propylene -----	nd			
Iso-butane -----	0.371	-31.3		
N-butane -----	0.638	-28.0		
Iso-pentane -----	0.166	-28.5		
N-pentane -----	0.135	-27.7		
Hexanes + -----	0.0936			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1071

Specific gravity, calculated: 0.650

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. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.