

Lab #: 782330 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: Herbers 31-20 Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 251890   
 Date Sampled: 12/17/2020 14:10 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0110			
Hydrogen -----	0.533			
Argon -----	0.0594			
Oxygen -----	1.39			
Nitrogen -----	5.23			
Carbon Dioxide -----	1.70	1.0		
Methane -----	71.78	-49.1	-262	
Ethane -----	12.05	-33.8		
Ethylene -----	0.0002			
Propane -----	5.00	-29.7		
Propylene -----	nd			
Iso-butane -----	0.531	-32.0		
N-butane -----	1.27	-28.4		
Iso-pentane -----	0.211	-28.5		
N-pentane -----	0.211	-28.0		
Hexanes + -----	0.0274			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1149

Specific gravity, calculated: 0.739

Remarks: 16192256 9728

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 #: 782333 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: Wandell 0-6-7 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 415295   
 Date Sampled: 12/21/2020 15:50 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.141			
Hydrogen -----	nd			
Argon -----	0.0972			
Oxygen -----	1.34			
Nitrogen -----	20.38			
Carbon Dioxide -----	0.010			
Methane -----	66.49	-58.1	-270	
Ethane -----	5.39	-33.5		
Ethylene -----	0.0007			
Propane -----	3.90	-29.7		
Propylene -----	0.0002			
Iso-butane -----	0.788	-31.5		
N-butane -----	1.02	-28.3		
Iso-pentane -----	0.226	-28.1		
N-pentane -----	0.161	-27.7		
Hexanes + -----	0.0541			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 946

Specific gravity, calculated: 0.745

Remarks: W57622 8503

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 #: 782334 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: Wandell 0-6-7 Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 415295   
 Date Sampled: 12/21/2020 15:55 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0160			
Hydrogen -----	0.639			
Argon -----	0.0351			
Oxygen -----	0.80			
Nitrogen -----	3.17			
Carbon Dioxide -----	1.44	3.0		
Methane -----	75.25	-49.4	-256	
Ethane -----	12.26	-33.1		
Ethylene -----	0.0008			
Propane -----	4.89	-29.3		
Propylene -----	nd			
Iso-butane -----	0.481	-31.2		
N-butane -----	0.868	-27.5		
Iso-pentane -----	0.0835	-27.2		
N-pentane -----	0.0576	-26.4		
Hexanes + -----	0.0078			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1158

Specific gravity, calculated: 0.712

Remarks: W57622 8503

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 #: 782337 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: North Rinn 14-9 Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 424125   
 Date Sampled: 12/17/2020 9:20 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0156			
Hydrogen -----	0.0369			
Argon -----	0.0057			
Oxygen -----	0.081			
Nitrogen -----	0.56			
Carbon Dioxide -----	1.75	2.0		
Methane -----	79.09	-47.6	-241	
Ethane -----	12.48	-32.2		
Ethylene -----	nd			
Propane -----	4.42	-28.8		
Propylene -----	nd			
Iso-butane -----	0.459	-31.3		
N-butane -----	0.898	-27.7		
Iso-pentane -----	0.111	-28.4		
N-pentane -----	0.0820	-27.6		
Hexanes + -----	0.0146			

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

Specific gravity, calculated: 0.700

Remarks: W73554 8503

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 #: 782341 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: Rasmussen 19-12 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 251192   
 Date Sampled: 12/21/2020 10:45 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0778			
Hydrogen -----	nd			
Argon -----	0.0873			
Oxygen -----	1.76			
Nitrogen -----	9.33			
Carbon Dioxide -----	0.011			
Methane -----	80.41	-57.2	-243	
Ethane -----	3.47	-35.0		
Ethylene -----	nd			
Propane -----	3.38	-31.3		
Propylene -----	nd			
Iso-butane -----	0.503	-32.3		
N-butane -----	0.696	-30.1		
Iso-pentane -----	0.139	-28.4		
N-pentane -----	0.0950	-28.4		
Hexanes + -----	0.0390			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1013

Specific gravity, calculated: 0.675

Remarks: C762537 8503

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 #: 782342 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: Dowdy 4-6-10 Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 430089   
 Date Sampled: 12/18/2020 9:00 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0068			
Hydrogen -----	0.0531			
Argon -----	0.288			
Oxygen -----	6.56			
Nitrogen -----	24.26			
Carbon Dioxide -----	1.36	2.5		
Methane -----	52.24	-46.9	-252	
Ethane -----	9.91	-32.4		
Ethylene -----	0.0001			
Propane -----	4.00	-28.9		
Propylene -----	nd			
Iso-butane -----	0.427	-31.2		
N-butane -----	0.803	-27.7		
Iso-pentane -----	0.0571	-27.7		
N-pentane -----	0.0287	-26.3		
Hexanes + -----	0.0018			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 851

Specific gravity, calculated: 0.812

Remarks: W71693 8503

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 #: 782343 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: Pratt 21-29 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 420033   
 Date Sampled: 12/21/2020 9:00 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0336			
Hydrogen -----	nd			
Argon -----	0.146			
Oxygen -----	3.27			
Nitrogen -----	13.79			
Carbon Dioxide -----	0.013			
Methane -----	71.70	-52.4	-244	
Ethane -----	5.89	-33.8		
Ethylene -----	nd			
Propane -----	3.56	-30.2		
Propylene -----	nd			
Iso-butane -----	0.450	-31.9		
N-butane -----	0.802	-29.0		
Iso-pentane -----	0.157	-28.5		
N-pentane -----	0.129	-28.4		
Hexanes + -----	0.0562			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 977

Specific gravity, calculated: 0.718

Remarks: W69768 8503

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 #: 782344 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: Dowdy 4-6-10 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 430089   
 Date Sampled: 12/18/2020 8:55 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0468			
Hydrogen -----	nd			
Argon -----	0.165			
Oxygen -----	3.63			
Nitrogen -----	15.26			
Carbon Dioxide -----	0.24	0.9		
Methane -----	73.95	-53.1	-241	
Ethane -----	3.66	-33.4		
Ethylene -----	nd			
Propane -----	2.01	-30.3		
Propylene -----	nd			
Iso-butane -----	0.304	-31.9		
N-butane -----	0.507	-29.0		
Iso-pentane -----	0.0870	-28.7		
N-pentane -----	0.0632	-28.6		
Hexanes + -----	0.0723			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 902

Specific gravity, calculated: 0.694

Remarks: W71693 8503

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 #: 782345 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: Vessels 12-30 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 285991   
 Date Sampled: 12/21/2020 9:40 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0352			
Hydrogen -----	0.0126			
Argon -----	0.0636			
Oxygen -----	1.45			
Nitrogen -----	6.23			
Carbon Dioxide -----	0.012			
Methane -----	79.98	-50.8	-239	
Ethane -----	7.52	-32.6		
Ethylene -----	nd			
Propane -----	2.90	-29.8		
Propylene -----	nd			
Iso-butane -----	0.367	-31.7		
N-butane -----	0.807	-28.7		
Iso-pentane -----	0.246	-28.7		
N-pentane -----	0.233	-28.3		
Hexanes + -----	0.145			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1083

Specific gravity, calculated: 0.682

Remarks: W34687 8503

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 #: 782346 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: Pratt 21-29 Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 420033   
 Date Sampled: 12/21/2020 9:05 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0102			
Hydrogen -----	0.0139			
Argon -----	0.0301			
Oxygen -----	0.67			
Nitrogen -----	2.48			
Carbon Dioxide -----	1.79	3.0		
Methane -----	75.36	-47.4	-244	
Ethane -----	12.51	-31.8		
Ethylene -----	0.0004			
Propane -----	5.01	-28.4		
Propylene -----	nd			
Iso-butane -----	0.624	-31.3		
N-butane -----	1.27	-27.6		
Iso-pentane -----	0.147	-28.4		
N-pentane -----	0.0803	-26.5		
Hexanes + -----	0.0025			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1186

Specific gravity, calculated: 0.726

Remarks: W69768 8503

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 #: 782347 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: Ione 1A-8H Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 429724   
 Date Sampled: 12/22/2020 15:25 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0272			
Hydrogen -----	nd			
Argon -----	0.276			
Oxygen -----	6.23			
Nitrogen -----	23.42			
Carbon Dioxide -----	0.032			
Methane -----	55.56	-51.5	-251	
Ethane -----	7.54	-33.3		
Ethylene -----	nd			
Propane -----	4.38	-30.1		
Propylene -----	nd			
Iso-butane -----	0.689	-31.9		
N-butane -----	1.27	-28.7		
Iso-pentane -----	0.251	-28.7		
N-pentane -----	0.220	-28.1		
Hexanes + -----	0.101			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 896

Specific gravity, calculated: 0.806

Remarks: C69931 8503

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 #: 782348 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: Kennedy 31-21 Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 276483   
 Date Sampled: 12/21/2020 14:35 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0195			
Hydrogen -----	0.436			
Argon -----	0.0476			
Oxygen -----	1.12			
Nitrogen -----	4.13			
Carbon Dioxide -----	2.10	2.8		
Methane -----	76.23	-47.4	-232	
Ethane -----	9.85	-30.8		
Ethylene -----	0.0001			
Propane -----	3.40	-27.4		
Propylene -----	nd			
Iso-butane -----	0.554	-29.7		
N-butane -----	1.10	-27.3		
Iso-pentane -----	0.398	-27.7		
N-pentane -----	0.395	-27.6		
Hexanes + -----	0.216			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1133

Specific gravity, calculated: 0.721

Remarks: W37747 8503

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 #: 782349 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: Vessels 12-30 Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 285991   
 Date Sampled: 12/21/2020 9:45 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0105			
Hydrogen -----	0.609			
Argon -----	0.0116			
Oxygen -----	0.26			
Nitrogen -----	1.05			
Carbon Dioxide -----	1.62	2.4		
Methane -----	71.56	-48.8	-248	
Ethane -----	12.77	-32.8		
Ethylene -----	0.0046			
Propane -----	7.13	-29.6		
Propylene -----	0.0001			
Iso-butane -----	1.12	-31.8		
N-butane -----	2.64	-28.6		
Iso-pentane -----	0.616	-28.5		
N-pentane -----	0.552	-28.0		
Hexanes + -----	0.0477			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1310

Specific gravity, calculated: 0.782

Remarks: W34687 8503

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 #: 782351 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: Rasmussen 0-4-19 Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 419448   
 Date Sampled: 12/21/2020 11:40 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0149			
Hydrogen -----	0.290			
Argon -----	0.0152			
Oxygen -----	0.28			
Nitrogen -----	1.13			
Carbon Dioxide -----	1.88	2.1		
Methane -----	76.19	-47.9	-248	
Ethane -----	12.11	-32.7		
Ethylene -----	nd			
Propane -----	5.28	-29.0		
Propylene -----	nd			
Iso-butane -----	0.704	-31.5		
N-butane -----	1.53	-28.0		
Iso-pentane -----	0.278	-28.5		
N-pentane -----	0.245	-27.6		
Hexanes + -----	0.0489			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1220

Specific gravity, calculated: 0.731

Remarks: W69243 8503

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 #: 782352 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: AA 12-8 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 267878   
 Date Sampled: 1/14/2021 13:40 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0142			
Hydrogen -----	nd			
Argon -----	0.0503			
Oxygen -----	1.15			
Nitrogen -----	4.48			
Carbon Dioxide -----	0.009			
Methane -----	81.46	-48.8	-240	
Ethane -----	8.85	-34.4		
Ethylene -----	nd			
Propane -----	3.09	-29.4		
Propylene -----	nd			
Iso-butane -----	0.290	-31.1		
N-butane -----	0.376	-27.9		
Iso-pentane -----	0.0901	-28.4		
N-pentane -----	0.0618	-27.3		
Hexanes + -----	0.0739			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1093

Specific gravity, calculated: 0.666

Remarks: W11930 8503

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 #: 782356 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: Rasmussen 2-8-19 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 419454   
 Date Sampled: 1/18/2021 13:35 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0152			
Hydrogen -----	0.0762			
Argon -----	0.348			
Oxygen -----	7.84			
Nitrogen -----	28.02			
Carbon Dioxide -----	0.29	-1.9		
Methane -----	57.64	-47.3	-245	
Ethane -----	4.79	-32.7		
Ethylene -----	nd			
Propane -----	0.618	-30.1		
Propylene -----	nd			
Iso-butane -----	0.0843	-32.1		
N-butane -----	0.193	-28.8		
Iso-pentane -----	0.0399	-28.6		
N-pentane -----	0.0335	-28.1		
Hexanes + -----	0.0110			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 698

Specific gravity, calculated: 0.753

Remarks: W69360 8503

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 #: 782359 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: Rodman Bruntz 21-26 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 268638   
 Date Sampled: 12/22/2020 14:30 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0088			
Hydrogen -----	0.0426			
Argon -----	0.0559			
Oxygen -----	1.22			
Nitrogen -----	4.77			
Carbon Dioxide -----	0.020			
Methane -----	66.21	-48.7	-263	
Ethane -----	13.97	-33.7		
Ethylene -----	0.0004			
Propane -----	8.03	-29.9		
Propylene -----	nd			
Iso-butane -----	1.27	-31.7		
N-butane -----	3.12	-28.3		
Iso-pentane -----	0.693	-28.5		
N-pentane -----	0.540	-27.6		
Hexanes + -----	0.0449			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1321

Specific gravity, calculated: 0.815

Remarks: W10368 8503

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 #: 782360 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: Regnier Farms 1G-19H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 451036   
 Date Sampled: 12/22/2020 9:40 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0322			
Hydrogen -----	2.64			
Argon -----	0.0326			
Oxygen -----	0.46			
Nitrogen -----	5.26			
Carbon Dioxide -----	0.008			
Methane -----	89.28	-48.0	-250	
Ethane -----	1.64	-31.0		
Ethylene -----	nd			
Propane -----	0.132	-29.1		
Propylene -----	nd			
Iso-butane -----	0.0565	-32.0		
N-butane -----	0.233	-28.7		
Iso-pentane -----	0.0902	-28.6		
N-pentane -----	0.0952	-28.0		
Hexanes + -----	0.0442			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 965

Specific gravity, calculated: 0.584

Remarks: C82447 8503

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 #: 782361 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: Rodman Bruntz 21-26 Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 268638   
 Date Sampled: 12/22/2020 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0093			
Hydrogen -----	0.0295			
Argon -----	0.0809			
Oxygen -----	1.90			
Nitrogen -----	7.09			
Carbon Dioxide -----	1.79	2.9		
Methane -----	67.92	-48.6	-262	
Ethane -----	12.35	-33.3		
Ethylene -----	0.0004			
Propane -----	5.90	-29.8		
Propylene -----	nd			
Iso-butane -----	0.756	-31.7		
N-butane -----	1.76	-28.4		
Iso-pentane -----	0.246	-28.1		
N-pentane -----	0.159	-27.2		
Hexanes + -----	0.0048			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1158

Specific gravity, calculated: 0.773

Remarks: W10368 8503

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 #: 782363 Job #: 46825 IS-94649 Co. Job#:   
 Sample Name: Ione 1A-8H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 429724   
 Date Sampled: 12/22/2020 15:20 Date Received: 1/25/2021 Date Reported: 2/23/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.621			
Oxygen -----	13.84			
Nitrogen -----	57.33			
Carbon Dioxide -----	0.045			
Methane -----	27.94	-47.0	-320	
Ethane -----	0.0853	-32.7		
Ethylene -----	0.0002			
Propane -----	0.0595	-29.2		
Propylene -----	0.0002			
Iso-butane -----	0.0117	-31.5		
N-butane -----	0.0332	-28.2		
Iso-pentane -----	0.0104	-28.2		
N-pentane -----	0.0122	-27.9		
Hexanes + -----	0.0125			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 289

Specific gravity, calculated: 0.875

Remarks: C69931 8503

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. %.