

Lab #: 778212 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Bickler 24-34 Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 293762   
 Date Sampled: 10/27/2020 1:25 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.947			
Oxygen -----	21.27			
Nitrogen -----	77.72			
Carbon Dioxide -----	0.066	-12.5		
Methane -----	0.0005			
Ethane -----	nd			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0

Specific gravity, calculated: 1.001

Remarks: 16192851.1 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 #: 778213 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Kats 6-4-34 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 338   
 Date Sampled: 10/27/2020 8:03 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0071			
Hydrogen -----	nd			
Argon -----	0.783			
Oxygen -----	17.49			
Nitrogen -----	63.59			
Carbon Dioxide -----	0.055	-12.5		
Methane -----	14.89	-51.2	-252	
Ethane -----	1.97	-33.1		
Ethylene -----	nd			
Propane -----	0.856	-29.9		
Propylene -----	nd			
Iso-butane -----	0.0931	-31.9		
N-butane -----	0.192	-28.5		
Iso-pentane -----	0.0331	-28.3		
N-pentane -----	0.0291	-28.1		
Hexanes + -----	0.0100			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 220

Specific gravity, calculated: 0.943

Remarks: 16192932.1 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 #: 778214 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Deason 4-0-35 Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 300633   
 Date Sampled: 11/05/2020 10:19 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.942			
Oxygen -----	20.99			
Nitrogen -----	77.98			
Carbon Dioxide -----	0.083	-11.6		
Methane -----	0.0004			
Ethane -----	nd			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0

Specific gravity, calculated: 1.000

Remarks: W59249 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 #: 778215 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Davis 2-4-9 Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 417131   
 Date Sampled: 11/06/2020 11:15 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.937			
Oxygen -----	21.11			
Nitrogen -----	77.87			
Carbon Dioxide -----	0.083	-11.6		
Methane -----	0.0003			
Ethane -----	nd			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0

Specific gravity, calculated: 1.001

Remarks: W58049 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 #: 778216 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Dier 8-4-8 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 413057   
 Date Sampled: 11/06/2020 8:30 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.945			
Oxygen -----	21.25			
Nitrogen -----	77.74			
Carbon Dioxide -----	0.069	-13.1		
Methane -----	0.0004			
Ethane -----	nd			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0

Specific gravity, calculated: 1.001

Remarks: W57881 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 #: 778217 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Vessel Minerals A Unit 1 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 250888   
 Date Sampled: 11/03/2020 4:00 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0577			
Hydrogen -----	nd			
Argon -----	0.0169			
Oxygen -----	0.19			
Nitrogen -----	3.18			
Carbon Dioxide -----	nd			
Methane -----	83.15	-55.8	-226	
Ethane -----	7.63	-32.5		
Ethylene -----	nd			
Propane -----	3.93	-29.7		
Propylene -----	0.0003			
Iso-butane -----	0.526	-31.6		
N-butane -----	0.906	-28.4		
Iso-pentane -----	0.181	-28.3		
N-pentane -----	0.153	-27.4		
Hexanes + -----	0.0764			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1143

Specific gravity, calculated: 0.672

Remarks: W46967 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 #: 778218 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Salisbury 2-4-11 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 418434   
 Date Sampled: 11/03/2020 9:19 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0224			
Hydrogen -----	0.0273			
Argon -----	0.0319			
Oxygen -----	0.75			
Nitrogen -----	2.96			
Carbon Dioxide -----	0.011			
Methane -----	78.11	-50.7	-249	
Ethane -----	10.82	-33.4		
Ethylene -----	nd			
Propane -----	4.90	-28.9		
Propylene -----	nd			
Iso-butane -----	0.584	-31.4		
N-butane -----	1.19	-28.1		
Iso-pentane -----	0.262	-28.3		
N-pentane -----	0.219	-27.7		
Hexanes + -----	0.114			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1192

Specific gravity, calculated: 0.708

Remarks: W65841 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 #: 778219 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Deason G Unit 1 Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 206628   
 Date Sampled: 11/05/2020 10:45 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0137			
Hydrogen -----	0.337			
Argon -----	0.0113			
Oxygen -----	0.19			
Nitrogen -----	0.78			
Carbon Dioxide -----	0.92	-0.8		
Methane -----	73.59	-50.2	-242	
Ethane -----	13.29	-32.9		
Ethylene -----	0.0001			
Propane -----	6.15	-29.2		
Propylene -----	nd			
Iso-butane -----	0.915	-31.5		
N-butane -----	2.25	-28.1		
Iso-pentane -----	0.631	-28.3		
N-pentane -----	0.676	-27.9		
Hexanes + -----	0.241			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1309

Specific gravity, calculated: 0.767

Remarks: W768314 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 #: 778220 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Ruegge 3O-4H Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 454445   
 Date Sampled: 11/06/2020 7:50 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.964			
Oxygen -----	21.70			
Nitrogen -----	77.25			
Carbon Dioxide -----	0.084	-11.4		
Methane -----	0.0008			
Ethane -----	nd			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0

Specific gravity, calculated: 1.002

Remarks: C10127 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 #: 778221 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Vessel Minerals A Unit 1 Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 250888   
 Date Sampled: 11/03/2020 4:05 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.957			
Oxygen -----	21.45			
Nitrogen -----	77.51			
Carbon Dioxide -----	0.083	-11.7		
Methane -----	0.0009			
Ethane -----	nd			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0

Specific gravity, calculated: 1.001

Remarks: W46967 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 #: 778222 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Lumry 32-24 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 329   
 Date Sampled: 11/05/2020 2:45 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.966			
Oxygen -----	21.71			
Nitrogen -----	77.25			
Carbon Dioxide -----	0.077	-12.3		
Methane -----	0.0006			
Ethane -----	nd			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0

Specific gravity, calculated: 1.002

Remarks: W43434 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 #: 778223 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Libsack 4-8-27 Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 292016   
 Date Sampled: 11/06/2020 5:00 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.959			
Oxygen -----	21.43			
Nitrogen -----	77.53			
Carbon Dioxide -----	0.078	-11.7		
Methane -----	0.0007			
Ethane -----	nd			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0

Specific gravity, calculated: 1.001

Remarks: W41325 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 #: 778224 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Billings 2F-18H Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 431279   
 Date Sampled: 11/05/2020 7:25 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0320			
Hydrogen -----	0.822			
Argon -----	0.0152			
Oxygen -----	0.15			
Nitrogen -----	1.37			
Carbon Dioxide -----	0.26	-5.2		
Methane -----	91.21	-53.3	-259	
Ethane -----	5.53	-34.8		
Ethylene -----	0.0095			
Propane -----	0.563	-30.3		
Propylene -----	nd			
Iso-butane -----	0.0130	-28.4		
N-butane -----	0.0165	-27.9		
Iso-pentane -----	0.0032			
N-pentane -----	0.0041			
Hexanes + -----	0.0055			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1042

Specific gravity, calculated: 0.592

Remarks: C74106 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 #: 778225 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Deason 4-0-35 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 300633   
 Date Sampled: 11/05/2020 10:19 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0545			
Hydrogen -----	nd			
Argon -----	0.0464			
Oxygen -----	0.99			
Nitrogen -----	5.13			
Carbon Dioxide -----	0.010			
Methane -----	82.73	-55.6	-237	
Ethane -----	5.75	-35.2		
Ethylene -----	nd			
Propane -----	3.87	-31.4		
Propylene -----	nd			
Iso-butane -----	0.473	-32.1		
N-butane -----	0.711	-29.6		
Iso-pentane -----	0.112	-28.2		
N-pentane -----	0.0825	-28.2		
Hexanes + -----	0.0360			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1088

Specific gravity, calculated: 0.668

Remarks: W59249 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 #: 778226 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: State 1E-16H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 431904   
 Date Sampled: 11/05/2020 8:45 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.870			
Oxygen -----	19.14			
Nitrogen -----	79.93			
Carbon Dioxide -----	0.058	-13.0		
Methane -----	0.0007			
Ethane -----	nd			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0002			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0

Specific gravity, calculated: 0.997

Remarks: C72626 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 #: 778227 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Lumry 32-24 Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 329   
 Date Sampled: 11/05/2020 2:45 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.948			
Oxygen -----	21.32			
Nitrogen -----	77.65			
Carbon Dioxide -----	0.086	-11.4		
Methane -----	0.0007			
Ethane -----	nd			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0

Specific gravity, calculated: 1.001

Remarks: W43434 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 #: 778228 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Libsack 4-8-27 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 292016   
 Date Sampled: 11/06/2020 5:00 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.948			
Oxygen -----	21.28			
Nitrogen -----	77.70			
Carbon Dioxide -----	0.070	-12.5		
Methane -----	0.0004			
Ethane -----	nd			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0

Specific gravity, calculated: 1.001

Remarks: W41325 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 #: 778229 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Bearden 23-6 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 272014   
 Date Sampled: 11/05/2020 1:30 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.947			
Oxygen -----	21.28			
Nitrogen -----	77.70			
Carbon Dioxide -----	0.071	-12.5		
Methane -----	0.0003			
Ethane -----	nd			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0

Specific gravity, calculated: 1.001

Remarks: W16179 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 #: 778230 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: State 1E-16H Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 431904   
 Date Sampled: 11/05/2020 8:45 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0131			
Hydrogen -----	0.0138			
Argon -----	0.0066			
Oxygen -----	0.12			
Nitrogen -----	0.72			
Carbon Dioxide -----	1.68	2.0		
Methane -----	79.47	-51.0	-258	
Ethane -----	12.48	-34.3		
Ethylene -----	0.0005			
Propane -----	4.28	-30.3		
Propylene -----	nd			
Iso-butane -----	0.323	-31.9		
N-butane -----	0.707	-28.7		
Iso-pentane -----	0.0840	-27.9		
N-pentane -----	0.0785	-28.3		
Hexanes + -----	0.0257			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1179

Specific gravity, calculated: 0.694

Remarks: C72626 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 #: 778231 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Billings 2F-18H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 431279   
 Date Sampled: 11/05/2020 7:25 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.936			
Oxygen -----	21.09			
Nitrogen -----	77.88			
Carbon Dioxide -----	0.087	-11.7		
Methane -----	0.0012			
Ethane -----	0.0005			
Ethylene -----	nd			
Propane -----	0.0004			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	0.0002			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0002			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0

Specific gravity, calculated: 1.001

Remarks: C74106 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 #: 778232 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Dier 8-4-8 Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 413057   
 Date Sampled: 11/06/2020 8:30 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.938			
Oxygen -----	20.90			
Nitrogen -----	78.08			
Carbon Dioxide -----	0.078	-11.0		
Methane -----	0.0005			
Ethane -----	nd			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0

Specific gravity, calculated: 1.000

Remarks: W57881 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 #: 778233 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Grant Hurt 1E-14H Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434317   
 Date Sampled: 11/05/2020 4:27 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.947			
Oxygen -----	21.29			
Nitrogen -----	77.68			
Carbon Dioxide -----	0.087	-11.5		
Methane -----	0.0005			
Ethane -----	nd			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0

Specific gravity, calculated: 1.001

Remarks: C74458 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 #: 778234 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Deason G Unit 1 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 206628   
 Date Sampled: 11/05/2020 10:45 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0271			
Hydrogen -----	nd			
Argon -----	0.494			
Oxygen -----	11.13			
Nitrogen -----	39.68			
Carbon Dioxide -----	0.053	-9.8		
Methane -----	40.34	-51.9	-243	
Ethane -----	5.10	-33.1		
Ethylene -----	nd			
Propane -----	2.15	-29.5		
Propylene -----	nd			
Iso-butane -----	0.260	-31.6		
N-butane -----	0.535	-28.3		
Iso-pentane -----	0.0931	-28.3		
N-pentane -----	0.0908	-28.1		
Hexanes + -----	0.0454			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 589

Specific gravity, calculated: 0.845

Remarks: W768314 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 #: 778235 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Bearden 23-6 Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 272014   
 Date Sampled: 11/05/2020 1:30 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0260			
Hydrogen -----	nd			
Argon -----	0.0096			
Oxygen -----	0.18			
Nitrogen -----	1.13			
Carbon Dioxide -----	2.62	-1.2		
Methane -----	87.03	-48.1	-207	
Ethane -----	5.91	-30.9		
Ethylene -----	nd			
Propane -----	1.67	-27.7		
Propylene -----	nd			
Iso-butane -----	0.309	-27.6		
N-butane -----	0.410	-26.7		
Iso-pentane -----	0.313	-26.7		
N-pentane -----	0.157	-26.5		
Hexanes + -----	0.232			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1084

Specific gravity, calculated: 0.655

Remarks: W16179 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 #: 778236 Job #: 46463 IS-94649 Co. Job#:   
 Sample Name: Kats 8-2-34 Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 339   
 Date Sampled: 11/02/2020 9:04 Date Received: 12/03/2020 Date Reported: 1/11/2021

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0071			
Hydrogen -----	0.0126			
Argon -----	0.652			
Oxygen -----	14.67			
Nitrogen -----	52.78			
Carbon Dioxide -----	0.76	1.7		
Methane -----	25.61	-47.6	-233	
Ethane -----	3.57	-31.0		
Ethylene -----	nd			
Propane -----	1.16	-27.7		
Propylene -----	nd			
Iso-butane -----	0.180	-29.5		
N-butane -----	0.349	-27.5		
Iso-pentane -----	0.107	-27.8		
N-pentane -----	0.0990	-27.4		
Hexanes + -----	0.0435			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 380

Specific gravity, calculated: 0.907

Remarks: 16192933.1 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. %.