

Lab #: 769312 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Parker 21-33 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 263245   
 Date Sampled: 7/10/2020 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0198			
Hydrogen -----	nd			
Argon -----	0.222			
Oxygen -----	4.99			
Nitrogen -----	17.15			
Carbon Dioxide -----	0.031			
Methane -----	64.74	-50.8	-252	
Ethane -----	7.41	-35.3		
Ethylene -----	nd			
Propane -----	3.83	-30.8		
Propylene -----	nd			
Iso-butane -----	0.407	-32.2		
N-butane -----	0.783	-29.3		
Iso-pentane -----	0.167	-28.4		
N-pentane -----	0.143	-28.1		
Hexanes + -----	0.106			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 942

Specific gravity, calculated: 0.753

Remarks: W762514

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 #: 769313 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: File 3A-32H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 452934   
 Date Sampled: 7/20/2200 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0503			
Hydrogen -----	nd			
Argon -----	0.0344			
Oxygen -----	0.33			
Nitrogen -----	3.00			
Carbon Dioxide -----	0.008			
Methane -----	94.82	-49.9	-242	
Ethane -----	1.72	-30.7		
Ethylene -----	nd			
Propane -----	0.0189	-28.1		
Propylene -----	nd			
Iso-butane -----	0.0018			
N-butane -----	0.0031			
Iso-pentane -----	0.0009			
N-pentane -----	nd			
Hexanes + -----	0.0087			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 993

Specific gravity, calculated: 0.577

Remarks: C82210

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 #: 769314 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Bearden 24-6 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 282845   
 Date Sampled: 8/10/2020 8:00 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0160			
Hydrogen -----	nd			
Argon -----	0.522			
Oxygen -----	13.01			
Nitrogen -----	45.09			
Carbon Dioxide -----	0.053	-11.5		
Methane -----	34.77	-51.2	-246	
Ethane -----	3.56	-33.9		
Ethylene -----	nd			
Propane -----	1.91	-29.8		
Propylene -----	nd			
Iso-butane -----	0.287	-31.8		
N-butane -----	0.499	-28.8		
Iso-pentane -----	0.121	-28.5		
N-pentane -----	0.104	-27.9		
Hexanes + -----	0.0538			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 501

Specific gravity, calculated: 0.870

Remarks: W34887

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 #: 769315 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Kiyota 4M-35H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 452881   
 Date Sampled: 7/28/2020 2:07 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.927			
Oxygen -----	21.45			
Nitrogen -----	77.54			
Carbon Dioxide -----	0.082	-12.3		
Methane -----	0.0008			
Ethane -----	nd			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0001			

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

Specific gravity, calculated: 1.001

Remarks: C10100

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 #: 769316 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Edith Ann 1 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 245038   
 Date Sampled: 7/13/2020 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0097			
Hydrogen -----	nd			
Argon -----	0.0341			
Oxygen -----	0.72			
Nitrogen -----	2.46			
Carbon Dioxide -----	1.63			
Methane -----	75.83			
Ethane -----	12.01			
Ethylene -----	nd			
Propane -----	4.87			
Propylene -----	nd			
Iso-butane -----	0.610			
N-butane -----	1.29			
Iso-pentane -----	0.248			
N-pentane -----	0.216			
Hexanes + -----	0.0716			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1191

Specific gravity, calculated: 0.728

Remarks: Sample compromised after compositional analysis  
W9648

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 #: 769317 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Kiyota 4N-35H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 452879   
 Date Sampled: 7/28/2020 14:10 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0203			
Hydrogen -----	nd			
Argon -----	0.349			
Oxygen -----	7.79			
Nitrogen -----	28.11			
Carbon Dioxide -----	0.030			
Methane -----	61.92	-49.8	-248	
Ethane -----	1.76	-33.1		
Ethylene -----	nd			
Propane -----	0.0228	-27.0		
Propylene -----	nd			
Iso-butane -----	0.0006			
N-butane -----	0.0009			
Iso-pentane -----	0.0002			
N-pentane -----	0.0002			
Hexanes + -----	0.0002			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 659

Specific gravity, calculated: 0.725

Remarks: C10101

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 #: 769318 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Cosslett 1E-22H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 456855   
 Date Sampled: 7/31/2020 7:55 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.888			
Oxygen -----	21.57			
Nitrogen -----	77.44			
Carbon Dioxide -----	0.087	-11.7		
Methane -----	0.0147			
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: C82273

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 #: 769319 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wooley Becky 2F-7H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434334   
 Date Sampled: 7/30/2020 8:39 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0249			
Hydrogen -----	nd			
Argon -----	0.233			
Oxygen -----	5.16			
Nitrogen -----	18.06			
Carbon Dioxide -----	0.026			
Methane -----	71.06	-48.5	-245	
Ethane -----	4.73	-32.2		
Ethylene -----	nd			
Propane -----	0.675	-27.7		
Propylene -----	nd			
Iso-butane -----	0.0186	-29.8		
N-butane -----	0.0092			
Iso-pentane -----	0.0012			
N-pentane -----	0.0008			
Hexanes + -----	0.0004			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 822

Specific gravity, calculated: 0.689

Remarks: C75032

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 #: 769320 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wooley Becky 2G-7H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 436733   
 Date Sampled: 7/30/2020 8:45 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.917			
Oxygen -----	21.15			
Nitrogen -----	77.84			
Carbon Dioxide -----	0.089	-11.9		
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: C75033

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 #: 769321 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Cosslett 1D-22H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 456854   
 Date Sampled: 7/31/2020 7:57 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.885			
Oxygen -----	21.78			
Nitrogen -----	77.25			
Carbon Dioxide -----	0.089	-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: C82272

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 #: 769324 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wooley Becky 2C-7H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 436731   
 Date Sampled: 7/30/2020 8:35 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.909			
Oxygen -----	21.73			
Nitrogen -----	77.28			
Carbon Dioxide -----	0.085	-11.8		
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: C75029

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 #: 769325 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Cosslett 1C-22H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 456848   
 Date Sampled: 7/31/2020 8:00 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0194			
Hydrogen -----	0.0288			
Argon -----	0.0267			
Oxygen -----	0.27			
Nitrogen -----	2.26			
Carbon Dioxide -----	0.007			
Methane -----	92.76	-49.7	-244	
Ethane -----	4.36	-33.6		
Ethylene -----	nd			
Propane -----	0.266	-27.1		
Propylene -----	nd			
Iso-butane -----	0.0015			
N-butane -----	0.0001			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0001			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1025

Specific gravity, calculated: 0.589

Remarks: C82271

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 #: 769326 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wooley Becky 2H-7H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434340   
 Date Sampled: 7/30/2020 8:45 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0582			
Hydrogen -----	1.62			
Argon -----	0.243			
Oxygen -----	2.15			
Nitrogen -----	19.53			
Carbon Dioxide -----	0.014			
Methane -----	76.10	-50.7	-231	
Ethane -----	0.238	-33.9		
Ethylene -----	0.0010			
Propane -----	0.0376	-29.2		
Propylene -----	0.0002			
Iso-butane -----	0.0033			
N-butane -----	0.0053			
Iso-pentane -----	0.0010			
N-pentane -----	0.0009			
Hexanes + -----	0.0006			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 782

Specific gravity, calculated: 0.642

Remarks: C75034

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 #: 769327 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wooley Sosa 2C-7H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 436738   
 Date Sampled: 7/30/2020 8:18 Date Received: 9/01/2020 Date Reported: 10/07/2020

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 -----	20.36			
Nitrogen -----	78.70			
Carbon Dioxide -----	0.064	-11.2		
Methane -----	0.0017			
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: 0.999

Remarks: C77446

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 #: 769328 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wooley Sosa 2D-7H Production Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434335   
 Date Sampled: 7/30/2020 8:23 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.908			
Oxygen -----	21.31			
Nitrogen -----	77.69			
Carbon Dioxide -----	0.087	-11.5		
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: C77448

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 #: 769329 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Morgan Hills 1F-7H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 446289   
 Date Sampled: 7/29/2020 12:53 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0510			
Hydrogen -----	nd			
Argon -----	0.171			
Oxygen -----	3.67			
Nitrogen -----	13.10			
Carbon Dioxide -----	0.020			
Methane -----	78.56	-49.5	-243	
Ethane -----	4.34	-33.0		
Ethylene -----	nd			
Propane -----	0.0901	-27.1		
Propylene -----	nd			
Iso-butane -----	0.0010			
N-butane -----	0.0011			
Iso-pentane -----	0.0002			
N-pentane -----	0.0002			
Hexanes + -----	0.0003			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 876

Specific gravity, calculated: 0.652

Remarks: C81149

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 #: 769330 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wooley Becky 2B-7H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434338   
 Date Sampled: 7/30/2020 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.934			
Oxygen -----	21.27			
Nitrogen -----	77.71			
Carbon Dioxide -----	0.088	-11.4		
Methane -----	0.0010			
Ethane -----	0.0003			
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: C75028

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 #: 769331 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wooley Sosa 2E-7H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434339   
 Date Sampled: 7/30/2020 8:28 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.932			
Oxygen -----	21.40			
Nitrogen -----	77.58			
Carbon Dioxide -----	0.089	-11.3		
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: C77445

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 #: 769332 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Morgan Hills 1E-7H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 446282   
 Date Sampled: 7/29/2020 12:48 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0384			
Hydrogen -----	nd			
Argon -----	0.0695			
Oxygen -----	1.37			
Nitrogen -----	5.67			
Carbon Dioxide -----	0.009			
Methane -----	84.99	-48.9	-246	
Ethane -----	6.22	-33.0		
Ethylene -----	nd			
Propane -----	1.42	-28.9		
Propylene -----	nd			
Iso-butane -----	0.102	-31.2		
N-butane -----	0.113	-26.7		
Iso-pentane -----	0.0010			
N-pentane -----	0.0002			
Hexanes + -----	0.0002			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1016

Specific gravity, calculated: 0.632

Remarks: C81148

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 #: 769333 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Kiyota 4I-35H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 438720   
 Date Sampled: 7/28/2020 1:55 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0672			
Hydrogen -----	0.0214			
Argon -----	0.303			
Oxygen -----	2.19			
Nitrogen -----	24.59			
Carbon Dioxide -----	0.014			
Methane -----	72.54	-50.4	-242	
Ethane -----	0.235	-30.5		
Ethylene -----	0.0002			
Propane -----	0.0282	-28.8		
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	0.0041			
Iso-pentane -----	0.0008			
N-pentane -----	0.0010			
Hexanes + -----	0.0016			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 740

Specific gravity, calculated: 0.671

Remarks: C77978

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 #: 769334 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Waste Connections 3C-29H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434372   
 Date Sampled: 7/29/2020 9:55 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0357			
Hydrogen -----	nd			
Argon -----	0.0139			
Oxygen -----	0.22			
Nitrogen -----	2.22			
Carbon Dioxide -----	0.008			
Methane -----	92.32	-50.9	-243	
Ethane -----	4.36	-34.8		
Ethylene -----	nd			
Propane -----	0.790	-29.2		
Propylene -----	nd			
Iso-butane -----	0.0215	-29.6		
N-butane -----	0.0058			
Iso-pentane -----	0.0002			
N-pentane -----	0.0003			
Hexanes + -----	0.0003			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1035

Specific gravity, calculated: 0.594

Remarks: C73985

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 #: 769335 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wooley Sosa 2D-7H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434335   
 Date Sampled: 7/30/2020 8:21 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0527			
Hydrogen -----	nd			
Argon -----	0.430			
Oxygen -----	9.64			
Nitrogen -----	35.81			
Carbon Dioxide -----	0.047			
Methane -----	53.88	-50.4	-237	
Ethane -----	0.0854	-31.7		
Ethylene -----	0.0001			
Propane -----	0.0418	-28.4		
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	0.0108	-27.7		
Iso-pentane -----	0.0017			
N-pentane -----	0.0015			
Hexanes + -----	0.0007			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 549

Specific gravity, calculated: 0.760

Remarks: C77448

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 #: 769336 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Pratt 4E-29H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434529   
 Date Sampled: 7/29/2020 7:28 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.232			
Hydrogen -----	nd			
Argon -----	0.150			
Oxygen -----	0.42			
Nitrogen -----	17.91			
Carbon Dioxide -----	0.008			
Methane -----	81.25	-56.3	-216	
Ethane -----	0.0199			
Ethylene -----	nd			
Propane -----	0.0047			
Propylene -----	nd			
Iso-butane -----	0.0006			
N-butane -----	0.0012			
Iso-pentane -----	0.0003			
N-pentane -----	0.0003			
Hexanes + -----	0.0003			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 824

Specific gravity, calculated: 0.631

Remarks: C73992

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 #: 769337 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Kiyota 4L-35H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 438856   
 Date Sampled: 7/28/2020 2:04 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0469			
Hydrogen -----	nd			
Argon -----	0.124			
Oxygen -----	2.05			
Nitrogen -----	9.58			
Carbon Dioxide -----	0.008			
Methane -----	87.01	-50.0	-247	
Ethane -----	1.17	-32.7		
Ethylene -----	nd			
Propane -----	0.0049			
Propylene -----	nd			
Iso-butane -----	0.0003			
N-butane -----	0.0006			
Iso-pentane -----	0.0001			
N-pentane -----	0.0002			
Hexanes + -----	0.0006			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 903

Specific gravity, calculated: 0.611

Remarks: C77979

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 #: 769338 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Pratt 4G-29H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 434525   
 Date Sampled: 7/29/2020 7:36 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.146			
Hydrogen -----	nd			
Argon -----	0.128			
Oxygen -----	1.11			
Nitrogen -----	14.37			
Carbon Dioxide -----	0.011			
Methane -----	78.93	-53.5	-227	
Ethane -----	3.90	-32.1		
Ethylene -----	0.0004			
Propane -----	1.07	-29.0		
Propylene -----	0.0012			
Iso-butane -----	0.0860	-31.4		
N-butane -----	0.189	-28.2		
Iso-pentane -----	0.0230	-28.4		
N-pentane -----	0.0208	-27.4		
Hexanes + -----	0.0109			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 908

Specific gravity, calculated: 0.654

Remarks: C73994

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 #: 769339 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: East Rinn 23-15 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 275921   
 Date Sampled: 8/12/2020 9:36 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0710			
Hydrogen -----	nd			
Argon -----	0.0933			
Oxygen -----	1.51			
Nitrogen -----	7.55			
Carbon Dioxide -----	0.012			
Methane -----	78.82	-53.7	-240	
Ethane -----	6.65	-33.8		
Ethylene -----	nd			
Propane -----	3.58	-29.3		
Propylene -----	nd			
Iso-butane -----	0.541	-31.6		
N-butane -----	0.810	-27.9		
Iso-pentane -----	0.187	-28.3		
N-pentane -----	0.125	-27.9		
Hexanes + -----	0.0483			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1067

Specific gravity, calculated: 0.688

Remarks: W20698

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 #: 769340 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Rasmussen 4-6-19 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 419433   
 Date Sampled: 8/12/2020 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0192			
Hydrogen -----	nd			
Argon -----	0.0400			
Oxygen -----	0.76			
Nitrogen -----	3.08			
Carbon Dioxide -----	0.011			
Methane -----	82.57	-48.7	-245	
Ethane -----	8.47	-33.1		
Ethylene -----	nd			
Propane -----	3.11	-28.9		
Propylene -----	nd			
Iso-butane -----	0.385	-31.3		
N-butane -----	0.832	-27.6		
Iso-pentane -----	0.259	-28.5		
N-pentane -----	0.251	-27.6		
Hexanes + -----	0.208			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1138

Specific gravity, calculated: 0.675

Remarks: W69240

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 #: 769341 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wooley 11-7 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 421621   
 Date Sampled: 8/10/2020 11:39 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0224			
Hydrogen -----	0.0168			
Argon -----	0.0630			
Oxygen -----	1.29			
Nitrogen -----	4.89			
Carbon Dioxide -----	0.011			
Methane -----	77.78	-50.0	-250	
Ethane -----	8.96	-35.1		
Ethylene -----	nd			
Propane -----	4.49	-30.5		
Propylene -----	nd			
Iso-butane -----	0.544	-32.4		
N-butane -----	1.21	-29.0		
Iso-pentane -----	0.293	-28.8		
N-pentane -----	0.263	-28.7		
Hexanes + -----	0.166			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1150

Specific gravity, calculated: 0.709

Remarks: W69512

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 #: 769342 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Thomas 14-7 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 280826   
 Date Sampled: 8/07/2020 11:45 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0297			
Hydrogen -----	0.0104			
Argon -----	0.0236			
Oxygen -----	0.43			
Nitrogen -----	2.23			
Carbon Dioxide -----	0.009			
Methane -----	79.68	-50.8	-242	
Ethane -----	9.38	-34.1		
Ethylene -----	nd			
Propane -----	5.22	-29.9		
Propylene -----	nd			
Iso-butane -----	0.692	-31.8		
N-butane -----	1.46	-28.6		
Iso-pentane -----	0.345	-28.6		
N-pentane -----	0.321	-28.0		
Hexanes + -----	0.168			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1213

Specific gravity, calculated: 0.710

Remarks: W38704

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 #: 769343 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Coal Creek 6-4-19 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 297980   
 Date Sampled: 8/03/2020 8:10 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0241			
Hydrogen -----	nd			
Argon -----	0.199			
Oxygen -----	4.41			
Nitrogen -----	15.64			
Carbon Dioxide -----	0.022			
Methane -----	65.75	-50.4	-248	
Ethane -----	7.24	-34.0		
Ethylene -----	nd			
Propane -----	4.40	-30.2		
Propylene -----	nd			
Iso-butane -----	0.543	-31.9		
N-butane -----	1.18	-28.6		
Iso-pentane -----	0.251	-29.0		
N-pentane -----	0.236	-28.2		
Hexanes + -----	0.108			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 988

Specific gravity, calculated: 0.759

Remarks: W53200

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 #: 769344 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wiggitt 2-13 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 418158   
 Date Sampled: 8/11/2020 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0442			
Hydrogen -----	nd			
Argon -----	0.377			
Oxygen -----	8.93			
Nitrogen -----	31.39			
Carbon Dioxide -----	0.040			
Methane -----	48.10	-53.1	-239	
Ethane -----	4.85	-33.6		
Ethylene -----	nd			
Propane -----	3.50	-29.9		
Propylene -----	nd			
Iso-butane -----	0.582	-31.7		
N-butane -----	1.30	-28.5		
Iso-pentane -----	0.358	-28.6		
N-pentane -----	0.328	-27.8		
Hexanes + -----	0.201			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 761

Specific gravity, calculated: 0.839

Remarks: W64312

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 #: 769345 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wiggett 32-13 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 293220   
 Date Sampled: 8/11/2020 14:24 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.919			
Oxygen -----	21.79			
Nitrogen -----	77.21			
Carbon Dioxide -----	0.084	-11.3		
Methane -----	0.0005			
Ethane -----	nd			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0004			

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

Specific gravity, calculated: 1.002

Remarks: W43132

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 #: 769346 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wiggett 12-13 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 295239   
 Date Sampled: 8/11/2020 9:24 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0495			
Hydrogen -----	0.0157			
Argon -----	0.0865			
Oxygen -----	2.15			
Nitrogen -----	9.15			
Carbon Dioxide -----	0.012			
Methane -----	73.13	-52.2	-238	
Ethane -----	7.86	-33.6		
Ethylene -----	nd			
Propane -----	4.60	-29.6		
Propylene -----	nd			
Iso-butane -----	0.645	-31.6		
N-butane -----	1.37	-28.3		
Iso-pentane -----	0.354	-28.5		
N-pentane -----	0.339	-27.8		
Hexanes + -----	0.237			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1104

Specific gravity, calculated: 0.735

Remarks: W64313

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 #: 769347 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Bearden 0-6-6 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 427330   
 Date Sampled: 8/10/2020 8:15 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0177			
Hydrogen -----	nd			
Argon -----	0.0089			
Oxygen -----	0.20			
Nitrogen -----	0.95			
Carbon Dioxide -----	0.006			
Methane -----	80.39	-48.9	-249	
Ethane -----	11.14	-33.2		
Ethylene -----	nd			
Propane -----	4.86	-29.1		
Propylene -----	nd			
Iso-butane -----	0.573	-31.5		
N-butane -----	1.25	-27.7		
Iso-pentane -----	0.247	-28.4		
N-pentane -----	0.247	-27.7		
Hexanes + -----	0.115			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1222

Specific gravity, calculated: 0.699

Remarks: W72724

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 #: 769348 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wiggett 2-4-13 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 418147   
 Date Sampled: 8/11/2020 9:40 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0380			
Hydrogen -----	nd			
Argon -----	0.0631			
Oxygen -----	1.24			
Nitrogen -----	4.89			
Carbon Dioxide -----	0.012			
Methane -----	77.00	-50.6	-241	
Ethane -----	9.20	-33.7		
Ethylene -----	nd			
Propane -----	5.01	-29.6		
Propylene -----	nd			
Iso-butane -----	0.620	-31.8		
N-butane -----	1.29	-28.6		
Iso-pentane -----	0.280	-28.6		
N-pentane -----	0.242	-28.0		
Hexanes + -----	0.114			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1161

Specific gravity, calculated: 0.715

Remarks: W64317

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 #: 769349 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wiggett 1-0-13 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 298777   
 Date Sampled: 8/11/2020 9:42 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0552			
Hydrogen -----	nd			
Argon -----	0.0847			
Oxygen -----	1.48			
Nitrogen -----	7.74			
Carbon Dioxide -----	0.011			
Methane -----	76.57	-53.5	-237	
Ethane -----	7.53	-33.3		
Ethylene -----	nd			
Propane -----	4.49	-29.6		
Propylene -----	nd			
Iso-butane -----	0.577	-31.4		
N-butane -----	1.02	-28.4		
Iso-pentane -----	0.205	-28.2		
N-pentane -----	0.164	-27.6		
Hexanes + -----	0.0743			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1095

Specific gravity, calculated: 0.707

Remarks: W64316

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 #: 769350 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Crandell 0-8-26 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 417898   
 Date Sampled: 8/03/2020 1:53 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0140			
Hydrogen -----	nd			
Argon -----	0.247			
Oxygen -----	5.57			
Nitrogen -----	19.38			
Carbon Dioxide -----	0.030			
Methane -----	60.81	-49.5	-251	
Ethane -----	7.57	-33.8		
Ethylene -----	nd			
Propane -----	4.16	-29.9		
Propylene -----	nd			
Iso-butane -----	0.547	-32.2		
N-butane -----	1.07	-29.0		
Iso-pentane -----	0.223	-28.5		
N-pentane -----	0.201	-28.6		
Hexanes + -----	0.181			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 935

Specific gravity, calculated: 0.780

Remarks: W66731

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 #: 769351 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Johnson 11-12 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 300269   
 Date Sampled: 8/07/2020 1:16 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.953			
Oxygen -----	18.33			
Nitrogen -----	80.62			
Carbon Dioxide -----	0.092	-11.4		
Methane -----	0.0007			
Ethane -----	nd			
Ethylene -----	nd			
Propane -----	0.0001			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0006			

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

Specific gravity, calculated: 0.997

Remarks: W49309

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 #: 769352 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: lone 4-2-10 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 419518   
 Date Sampled: 8/06/2020 10:41 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0167			
Hydrogen -----	0.0186			
Argon -----	0.0452			
Oxygen -----	0.91			
Nitrogen -----	3.59			
Carbon Dioxide -----	0.011			
Methane -----	79.87	-50.2	-249	
Ethane -----	9.40	-35.3		
Ethylene -----	nd			
Propane -----	4.11	-30.6		
Propylene -----	nd			
Iso-butane -----	0.477	-32.1		
N-butane -----	0.970	-28.9		
Iso-pentane -----	0.220	-28.7		
N-pentane -----	0.188	-28.4		
Hexanes + -----	0.176			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1154

Specific gravity, calculated: 0.693

Remarks: W66666

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 #: 769353 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wiggett 13-2 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 206613   
 Date Sampled: 8/11/2020 8:29 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0462			
Hydrogen -----	nd			
Argon -----	0.163			
Oxygen -----	3.51			
Nitrogen -----	13.09			
Carbon Dioxide -----	0.084	-1.4		
Methane -----	70.20	-51.9	-236	
Ethane -----	7.03	-33.2		
Ethylene -----	0.0001			
Propane -----	3.86	-29.7		
Propylene -----	nd			
Iso-butane -----	0.469	-31.7		
N-butane -----	0.949	-28.2		
Iso-pentane -----	0.252	-28.5		
N-pentane -----	0.234	-27.7		
Hexanes + -----	0.113			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1006

Specific gravity, calculated: 0.734

Remarks: W768304

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 #: 769354 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Haley G unit 1 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 206608   
 Date Sampled: 8/04/2020 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0548			
Hydrogen -----	nd			
Argon -----	0.0499			
Oxygen -----	0.94			
Nitrogen -----	4.52			
Carbon Dioxide -----	0.015			
Methane -----	79.25	-52.6	-244	
Ethane -----	7.70	-34.7		
Ethylene -----	nd			
Propane -----	5.51	-30.8		
Propylene -----	nd			
Iso-butane -----	0.637	-31.9		
N-butane -----	1.03	-29.1		
Iso-pentane -----	0.141	-28.5		
N-pentane -----	0.108	-28.5		
Hexanes + -----	0.0467			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1148

Specific gravity, calculated: 0.699

Remarks: W768427

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 #: 769355 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wiggett 22-13 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 418149   
 Date Sampled: 8/11/2020 9:35 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0688			
Hydrogen -----	0.0494			
Argon -----	0.103			
Oxygen -----	1.90			
Nitrogen -----	8.79			
Carbon Dioxide -----	0.013			
Methane -----	75.58	-53.9	-231	
Ethane -----	6.69	-33.5		
Ethylene -----	nd			
Propane -----	4.35	-29.9		
Propylene -----	nd			
Iso-butane -----	0.610	-31.9		
N-butane -----	1.20	-28.7		
Iso-pentane -----	0.280	-28.4		
N-pentane -----	0.249	-28.0		
Hexanes + -----	0.116			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1082

Specific gravity, calculated: 0.715

Remarks: W64314

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 #: 769356 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Bury Crandell 6-0-23 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 423158   
 Date Sampled: 8/03/2020 4:05 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0282			
Hydrogen -----	nd			
Argon -----	0.0791			
Oxygen -----	1.40			
Nitrogen -----	6.26			
Carbon Dioxide -----	0.015			
Methane -----	76.18	-52.4	-244	
Ethane -----	6.66	-35.5		
Ethylene -----	nd			
Propane -----	6.02	-31.1		
Propylene -----	nd			
Iso-butane -----	0.875	-32.2		
N-butane -----	1.63	-29.7		
Iso-pentane -----	0.374	-28.6		
N-pentane -----	0.300	-28.9		
Hexanes + -----	0.183			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1162

Specific gravity, calculated: 0.733

Remarks: W68259

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 #: 769357 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Giest 2-4-32 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 276694   
 Date Sampled: 8/07/2020 2:49 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0339			
Hydrogen -----	0.0185			
Argon -----	0.0197			
Oxygen -----	0.29			
Nitrogen -----	2.36			
Carbon Dioxide -----	0.006			
Methane -----	79.58	-52.0	-251	
Ethane -----	10.19	-34.6		
Ethylene -----	nd			
Propane -----	5.08	-30.7		
Propylene -----	nd			
Iso-butane -----	0.557	-32.1		
N-butane -----	1.24	-29.0		
Iso-pentane -----	0.240	-28.5		
N-pentane -----	0.240	-28.2		
Hexanes + -----	0.140			

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

Specific gravity, calculated: 0.703

Remarks: W17664

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 #: 769358 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wooley 4-0-7 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 421635   
 Date Sampled: 8/10/2020 11:36 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0235			
Hydrogen -----	nd			
Argon -----	0.0225			
Oxygen -----	0.45			
Nitrogen -----	1.94			
Carbon Dioxide -----	0.008			
Methane -----	80.52	-49.3	-246	
Ethane -----	10.10	-33.4		
Ethylene -----	nd			
Propane -----	4.57	-29.1		
Propylene -----	nd			
Iso-butane -----	0.565	-31.6		
N-butane -----	1.21	-27.8		
Iso-pentane -----	0.259	-28.4		
N-pentane -----	0.226	-27.8		
Hexanes + -----	0.111			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1196

Specific gravity, calculated: 0.696

Remarks: W69472

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 #: 769359 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Ogren 1 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 206563   
 Date Sampled: 8/04/2020 10:50 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0365			
Hydrogen -----	nd			
Argon -----	0.0160			
Oxygen -----	0.27			
Nitrogen -----	1.86			
Carbon Dioxide -----	0.008			
Methane -----	79.51	-52.5	-237	
Ethane -----	9.84	-34.0		
Ethylene -----	nd			
Propane -----	6.38	-29.9		
Propylene -----	nd			
Iso-butane -----	0.711	-31.6		
N-butane -----	1.09	-27.8		
Iso-pentane -----	0.139	-28.0		
N-pentane -----	0.0884	-26.4		
Hexanes + -----	0.0484			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1214

Specific gravity, calculated: 0.704

Remarks: W768238

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 #: 769360 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: William Peltier 1A-20H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 422535   
 Date Sampled: 8/10/2020 4:21 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0197			
Hydrogen -----	0.0477			
Argon -----	0.0434			
Oxygen -----	0.73			
Nitrogen -----	3.51			
Carbon Dioxide -----	0.008			
Methane -----	79.00	-48.8	-243	
Ethane -----	9.93	-32.4		
Ethylene -----	0.0002			
Propane -----	4.53	-28.9		
Propylene -----	0.0001			
Iso-butane -----	0.561	-31.5		
N-butane -----	1.11	-27.8		
Iso-pentane -----	0.225	-28.2		
N-pentane -----	0.191	-27.3		
Hexanes + -----	0.0901			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1169

Specific gravity, calculated: 0.699

Remarks: C64715

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 #: 769361 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wise F unit 1 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 206709   
 Date Sampled: 8/04/2020 12:30 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.114			
Hydrogen -----	nd			
Argon -----	0.239			
Oxygen -----	5.02			
Nitrogen -----	20.95			
Carbon Dioxide -----	0.022			
Methane -----	69.95	-59.7	-214	
Ethane -----	1.78	-32.9		
Ethylene -----	nd			
Propane -----	1.25	-30.1		
Propylene -----	nd			
Iso-butane -----	0.189	-31.4		
N-butane -----	0.252	-28.1		
Iso-pentane -----	0.0697	-28.3		
N-pentane -----	0.0745	-27.4		
Hexanes + -----	0.0865			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 797

Specific gravity, calculated: 0.702

Remarks: W768320

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 #: 769362 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Allan H unit 23-12 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 286686   
 Date Sampled: 8/10/2020 2:03 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0351			
Hydrogen -----	0.0202			
Argon -----	0.151			
Oxygen -----	3.02			
Nitrogen -----	11.73			
Carbon Dioxide -----	0.028			
Methane -----	69.93	-51.8	-244	
Ethane -----	7.85	-33.8		
Ethylene -----	nd			
Propane -----	4.75	-30.1		
Propylene -----	nd			
Iso-butane -----	0.587	-31.8		
N-butane -----	1.23	-28.7		
Iso-pentane -----	0.269	-28.4		
N-pentane -----	0.252	-28.0		
Hexanes + -----	0.144			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1057

Specific gravity, calculated: 0.744

Remarks: W43125

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 #: 769363 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Bearden 14-6 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 277971   
 Date Sampled: 8/10/2020 8:10 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0155			
Hydrogen -----	nd			
Argon -----	0.365			
Oxygen -----	8.61			
Nitrogen -----	29.43			
Carbon Dioxide -----	0.037			
Methane -----	50.90	-49.3	-250	
Ethane -----	6.40	-33.0		
Ethylene -----	nd			
Propane -----	2.81	-29.1		
Propylene -----	nd			
Iso-butane -----	0.355	-31.4		
N-butane -----	0.733	-28.1		
Iso-pentane -----	0.150	-28.4		
N-pentane -----	0.139	-27.5		
Hexanes + -----	0.0602			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 751

Specific gravity, calculated: 0.807

Remarks: W19969

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 #: 769364 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Dowdy 4-2-10 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 430088   
 Date Sampled: 8/17/2020 3:40 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0151			
Hydrogen -----	nd			
Argon -----	0.187			
Oxygen -----	4.08			
Nitrogen -----	14.22			
Carbon Dioxide -----	0.024			
Methane -----	66.08	-49.8	-251	
Ethane -----	8.34	-35.3		
Ethylene -----	nd			
Propane -----	4.34	-30.9		
Propylene -----	nd			
Iso-butane -----	0.563	-32.5		
N-butane -----	1.23	-29.3		
Iso-pentane -----	0.340	-28.8		
N-pentane -----	0.314	-28.9		
Hexanes + -----	0.266			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1026

Specific gravity, calculated: 0.764

Remarks: W71692

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 #: 769365 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Ione 6-8-4 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 417112   
 Date Sampled: 8/17/2020 12:44 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0166			
Hydrogen -----	nd			
Argon -----	0.0666			
Oxygen -----	1.33			
Nitrogen -----	5.46			
Carbon Dioxide -----	0.010			
Methane -----	73.90	-50.4	-248	
Ethane -----	9.55	-35.1		
Ethylene -----	nd			
Propane -----	6.06	-30.6		
Propylene -----	nd			
Iso-butane -----	0.859	-32.3		
N-butane -----	1.72	-29.0		
Iso-pentane -----	0.423	-28.7		
N-pentane -----	0.351	-28.2		
Hexanes + -----	0.254			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1201

Specific gravity, calculated: 0.748

Remarks: W58481

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 #: 769366 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Kiyota 33-35 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 258610   
 Date Sampled: 8/17/2020 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0305			
Hydrogen -----	nd			
Argon -----	0.110			
Oxygen -----	2.18			
Nitrogen -----	8.36			
Carbon Dioxide -----	0.62	-9.0		
Methane -----	71.75	-52.1	-248	
Ethane -----	7.38	-36.2		
Ethylene -----	nd			
Propane -----	5.89	-31.4		
Propylene -----	nd			
Iso-butane -----	0.859	-32.6		
N-butane -----	1.69	-29.9		
Iso-pentane -----	0.470	-28.8		
N-pentane -----	0.397	-29.2		
Hexanes + -----	0.267			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1140

Specific gravity, calculated: 0.760

Remarks: W9660

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 #: 769367 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Pratt 4-2-29 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 420035   
 Date Sampled: 8/17/2020 8:05 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	nd			
Hydrogen -----	nd			
Argon -----	0.0210			
Oxygen -----	0.39			
Nitrogen -----	1.64			
Carbon Dioxide -----	0.010			
Methane -----	74.92	-50.0	-250	
Ethane -----	13.12	-34.1		
Ethylene -----	nd			
Propane -----	6.92	-29.6		
Propylene -----	nd			
Iso-butane -----	0.796	-31.7		
N-butane -----	1.57	-28.2		
Iso-pentane -----	0.268	-28.2		
N-pentane -----	0.225	-27.7		
Hexanes + -----	0.119			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1273

Specific gravity, calculated: 0.741

Remarks: W69767

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 #: 769368 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Kiyota 4G-35H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 438721   
 Date Sampled: 7/28/2020 1:50 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0376			
Hydrogen -----	0.0358			
Argon -----	0.176			
Oxygen -----	1.45			
Nitrogen -----	11.55			
Carbon Dioxide -----	0.012			
Methane -----	86.05	-49.5	-242	
Ethane -----	0.660	-30.3		
Ethylene -----	0.0002			
Propane -----	0.0198	-28.9		
Propylene -----	nd			
Iso-butane -----	0.0001			
N-butane -----	0.0043			
Iso-pentane -----	0.0011			
N-pentane -----	0.0012			
Hexanes + -----	0.0023			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 885

Specific gravity, calculated: 0.614

Remarks: C77976

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 #: 769369 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Herren 1D-33H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 457036   
 Date Sampled: 7/28/2020 8:16 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0556			
Hydrogen -----	10.44			
Argon -----	0.112			
Oxygen -----	1.73			
Nitrogen -----	9.11			
Carbon Dioxide -----	0.018			
Methane -----	72.60	-51.2	-245	
Ethane -----	4.66	-34.2		
Ethylene -----	0.0083			
Propane -----	1.11	-30.1		
Propylene -----	nd			
Iso-butane -----	0.0710	-31.4		
N-butane -----	0.0733	-28.0		
Iso-pentane -----	0.0042			
N-pentane -----	0.0019			
Hexanes + -----	0.0010			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 886

Specific gravity, calculated: 0.587

Remarks: C82292

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 #: 769370 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Herren 1H-33H Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 457038   
 Date Sampled: 7/28/2020 10:26 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0280			
Hydrogen -----	0.936			
Argon -----	0.239			
Oxygen -----	5.25			
Nitrogen -----	18.85			
Carbon Dioxide -----	0.023			
Methane -----	67.64	-50.7	-252	
Ethane -----	5.27	-34.5		
Ethylene -----	0.0088			
Propane -----	1.48	-30.2		
Propylene -----	nd			
Iso-butane -----	0.109	-31.7		
N-butane -----	0.136	-28.4		
Iso-pentane -----	0.0153	-27.8		
N-pentane -----	0.0096			
Hexanes + -----	0.0016			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 829

Specific gravity, calculated: 0.702

Remarks: C82296

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 #: 769371 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Wooley 33-8 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 267688   
 Date Sampled: 8/18/2020 11:02 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0163			
Hydrogen -----	0.0307			
Argon -----	0.124			
Oxygen -----	2.61			
Nitrogen -----	9.20			
Carbon Dioxide -----	0.018			
Methane -----	70.79	-48.0	-245	
Ethane -----	9.97	-32.4		
Ethylene -----	nd			
Propane -----	4.44	-28.2		
Propylene -----	nd			
Iso-butane -----	0.636	-30.9		
N-butane -----	1.31	-27.0		
Iso-pentane -----	0.360	-28.0		
N-pentane -----	0.286	-26.6		
Hexanes + -----	0.211			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1108

Specific gravity, calculated: 0.745

Remarks: W17666

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 #: 769372 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Vessels 14-30 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 285990   
 Date Sampled: 8/18/2020 9:43 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0122			
Hydrogen -----	nd			
Argon -----	0.512			
Oxygen -----	12.86			
Nitrogen -----	44.62			
Carbon Dioxide -----	0.057	-10.9		
Methane -----	34.35	-49.6	-243	
Ethane -----	4.48	-32.4		
Ethylene -----	nd			
Propane -----	2.01	-29.1		
Propylene -----	nd			
Iso-butane -----	0.255	-31.5		
N-butane -----	0.544	-28.1		
Iso-pentane -----	0.113	-28.4		
N-pentane -----	0.114	-28.0		
Hexanes + -----	0.0737			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 517

Specific gravity, calculated: 0.873

Remarks: W36074

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 #: 769373 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Alcorn 1 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 206562   
 Date Sampled: 8/18/2020 7:52 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0454			
Hydrogen -----	nd			
Argon -----	0.0798			
Oxygen -----	1.56			
Nitrogen -----	6.51			
Carbon Dioxide -----	0.010			
Methane -----	79.24	-51.6	-242	
Ethane -----	7.95	-33.9		
Ethylene -----	nd			
Propane -----	3.45	-30.2		
Propylene -----	nd			
Iso-butane -----	0.319	-31.7		
N-butane -----	0.598	-28.6		
Iso-pentane -----	0.100	-28.2		
N-pentane -----	0.0944	-27.9		
Hexanes + -----	0.0465			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1073

Specific gravity, calculated: 0.680

Remarks: W768286

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 #: 769374 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Alcorn 32-10 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 294745   
 Date Sampled: 8/18/2020 8:22 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0598			
Hydrogen -----	nd			
Argon -----	0.391			
Oxygen -----	9.16			
Nitrogen -----	32.97			
Carbon Dioxide -----	0.061	-5.9		
Methane -----	53.31	-56.2	-222	
Ethane -----	2.03	-34.4		
Ethylene -----	nd			
Propane -----	1.33	-30.7		
Propylene -----	nd			
Iso-butane -----	0.181	-31.7		
N-butane -----	0.306	-29.0		
Iso-pentane -----	0.0676	-28.3		
N-pentane -----	0.0624	-28.1		
Hexanes + -----	0.0680			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 634

Specific gravity, calculated: 0.778

Remarks: W46835

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 #: 769375 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: Libsack 43-27 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 270165   
 Date Sampled: 8/17/2020 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0164			
Hydrogen -----	0.0537			
Argon -----	0.0188			
Oxygen -----	0.34			
Nitrogen -----	1.77			
Carbon Dioxide -----	0.011			
Methane -----	79.46	-49.1	-236	
Ethane -----	9.03	-33.1		
Ethylene -----	nd			
Propane -----	5.81	-29.1		
Propylene -----	nd			
Iso-butane -----	0.878	-30.9		
N-butane -----	1.51	-27.3		
Iso-pentane -----	0.463	-28.2		
N-pentane -----	0.371	-26.7		
Hexanes + -----	0.267			

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

Specific gravity, calculated: 0.720

Remarks: W10351

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 #: 769376 Job #: 45677 IS-94649 Co. Job#:   
 Sample Name: lone 4-4-2 Surface Casing Co. Lab#:   
 Company: Crestone Peak Resources   
 API/Well:   
 Container: IsoTube®   
 Field/Site Name: Bradenhead Testing   
 Location:   
 Formation:   
 Sampling Point: 416445   
 Date Sampled: 8/01/7220 1:48 Date Received: 9/01/2020 Date Reported: 10/07/2020

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	$\delta\text{D}$ ‰	$\delta^{15}\text{N}$ ‰
Carbon Monoxide -----	nd			
Helium -----	0.0134			
Hydrogen -----	nd			
Argon -----	0.276			
Oxygen -----	6.32			
Nitrogen -----	21.90			
Carbon Dioxide -----	0.031			
Methane -----	59.01	-49.2	-248	
Ethane -----	7.07	-34.8		
Ethylene -----	nd			
Propane -----	3.52	-30.6		
Propylene -----	nd			
Iso-butane -----	0.454	-32.2		
N-butane -----	0.885	-29.1		
Iso-pentane -----	0.226	-28.9		
N-pentane -----	0.184	-28.4		
Hexanes + -----	0.106			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 878

Specific gravity, calculated: 0.780

Remarks: W72058

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. %.