ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	786827	Job #:	47244	IS-94649	Co. Job#:
Sample Name:	Boyd 3C-19H / Production Casing				Co. Lab#:
Company:	Crestone Peak Resources				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Bradenhead Testing				
Location:					
Formation:					
Sampling Point:	433814				
Date Sampled:	2/22/2021 8:48	Date Received:	3/23/2021	Date Reported:	4/28/2021

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	0.0317			
Hydrogen	0.725			
Argon	0.0056			
Oxygen	0.029			
Nitrogen	0.98			
Carbon Dioxide	0.22	-3.5		
Methane	84.63	-54.2	-255	
Ethane	9.41	-34.9		
Ethylene	0.0068			
Propane	3.17	-30.1		
Propylene	0.0003			
Iso-butane	0.240	-31.4		
N-butane	0.444	-28.3		
Iso-pentane	0.0389			
N-pentane	0.0335			
Hexanes +	0.0391			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1136
Specific gravity, calculated: 0.645

Remarks: C74874 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. %.

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	786828	Job #:	47244	IS-94649	Co. Job#:
Sample Name:	Boyd 3C-19H / Surface Casing				Co. Lab#:
Company:	Crestone Peak Resources				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Bradenhead Testing				
Location:					
Formation:					
Sampling Point:	433814				
Date Sampled:	2/22/2021 8:38	Date Received:	3/23/2021	Date Reported:	4/28/2021

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.225			
Oxygen	4.85			
Nitrogen	19.09			
Carbon Dioxide	0.034			
Methane	75.55	-52.7	-270	
Ethane	0.134	-34.5		
Ethylene	nd			
Propane	0.0548	-30.5		
Propylene	0.0001			
Iso-butane	0.0080			
N-butane	0.0316	-29.0		
Iso-pentane	0.0092			
N-pentane	0.0106			
Hexanes +	0.0067			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 772
Specific gravity, calculated: 0.664

Remarks: C74874 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. %.

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	786829	Job #:	47244	IS-94649	Co. Job#:
Sample Name:	Boyd 3C-19H / Intermediate Casing				Co. Lab#:
Company:	Crestone Peak Resources				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Bradenhead Testing				
Location:					
Formation:					
Sampling Point:	433814				
Date Sampled:	2/22/2021	8:44	Date Received:	3/23/2021	Date Reported: 4/28/2021

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.230			
Oxygen	5.02			
Nitrogen	19.12			
Carbon Dioxide	0.019			
Methane	75.27	-52.8	-267	
Ethane	0.159	-35.1		
Ethylene	0.0001			
Propane	0.109	-31.1		
Propylene	0.0002			
Iso-butane	0.0168			
N-butane	0.0324	-29.0		
Iso-pentane	0.0081			
N-pentane	0.0093			
Hexanes +	0.0049			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 771
Specific gravity, calculated: 0.666

Remarks: C74874 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. %.

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	786830	Job #:	47244	IS-94649	Co. Job#:
Sample Name:	Doniphan Shields 2 / Surface Casing				Co. Lab#:
Company:	Crestone Peak Resources				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Bradenhead Testing				
Location:					
Formation:					
Sampling Point:	206609				
Date Sampled:	2/08/2021	Date Received:	3/23/2021	Date Reported:	4/28/2021

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	0.0070			
Hydrogen	nd			
Argon	0.809			
Oxygen	18.12			
Nitrogen	68.18			
Carbon Dioxide	0.070	-10.9		
Methane	10.79	-53.0	-244	
Ethane	1.18	-34.0		
Ethylene	nd			
Propane	0.615	-30.0		
Propylene	nd			
Iso-butane	0.0636	-31.9		
N-butane	0.124	-28.9		
Iso-pentane	0.0186	-28.2		
N-pentane	0.0148	-27.7		
Hexanes +	0.0034			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 153
Specific gravity, calculated: 0.958

Remarks: W768300 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. %.

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	786831	Job #:	47244	IS-94649	Co. Job#:
Sample Name:	Doniphan Shields 2 / Production Casing				Co. Lab#:
Company:	Crestone Peak Resources				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Bradenhead Testing				
Location:					
Formation:					
Sampling Point:	206609				
Date Sampled:	2/08/2021	Date Received:	3/23/2021	Date Reported:	4/28/2021

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	0.0114			
Hydrogen	0.0922			
Argon	0.0350			
Oxygen	0.82			
Nitrogen	3.10			
Carbon Dioxide	1.93	2.6		
Methane	72.44	-49.1	-234	
Ethane	12.39	-32.1		
Ethylene	0.0005			
Propane	5.53	-28.8		
Propylene	nd			
Iso-butane	0.836	-30.8		
N-butane	1.90	-27.9		
Iso-pentane	0.455	-28.8		
N-pentane	0.398	-28.4		
Hexanes +	0.0589			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1223
Specific gravity, calculated: 0.761

Remarks: W768300 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. %.

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	786832	Job #:	47244	IS-94649	Co. Job#:
Sample Name:	Ione 1C-10H / Production Casing				Co. Lab#:
Company:	Crestone Peak Resources				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Bradenhead Testing				
Location:					
Formation:					
Sampling Point:	431792				
Date Sampled:	2/02/2021	Date Received:	3/23/2021	Date Reported:	4/28/2021

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	0.0124			
Hydrogen	3.66			
Argon	0.371			
Oxygen	8.35			
Nitrogen	32.40			
Carbon Dioxide	0.19	-2.3		
Methane	49.35	-51.9	-244	
Ethane	4.46	-31.7		
Ethylene	0.0044			
Propane	0.919	-28.5		
Propylene	nd			
Iso-butane	0.0811	-30.7		
N-butane	0.134	-27.3		
Iso-pentane	0.0238			
N-pentane	0.0208	-25.9		
Hexanes +	0.0187			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 624
Specific gravity, calculated: 0.756

Remarks: C72730 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. %.

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	786833	Job #:	47244	IS-94649	Co. Job#:
Sample Name:	Ione 1F-10H / Surface Casing				Co. Lab#:
Company:	Crestone Peak Resources				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Bradenhead Testing				
Location:					
Formation:					
Sampling Point:	431791				
Date Sampled:	2/02/2021 11:55	Date Received:	3/23/2021	Date Reported:	4/28/2021

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	0.0419			
Hydrogen	0.0307			
Argon	0.0546			
Oxygen	1.02			
Nitrogen	5.71			
Carbon Dioxide	0.011			
Methane	78.38	-54.3	-240	
Ethane	8.08	-33.3		
Ethylene	nd			
Propane	4.17	-28.8		
Propylene	nd			
Iso-butane	0.639	-31.4		
N-butane	1.16	-27.9		
Iso-pentane	0.329	-29.0		
N-pentane	0.245	-28.2		
Hexanes +	0.128			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1133
Specific gravity, calculated: 0.703

Remarks: C72733 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. %.

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	786834	Job #:	47244	IS-94649	Co. Job#:
Sample Name:	Ione 1F-10H / Production Casing				Co. Lab#:
Company:	Crestone Peak Resources				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Bradenhead Testing				
Location:					
Formation:					
Sampling Point:	431791				
Date Sampled:	2/02/2021 12:05	Date Received:	3/23/2021	Date Reported:	4/28/2021

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	0.0214			
Hydrogen	4.53			
Argon	0.0131			
Oxygen	0.26			
Nitrogen	1.14			
Carbon Dioxide	0.60	0.2		
Methane	80.45	-53.5	-238	
Ethane	9.42	-32.7		
Ethylene	0.0141			
Propane	2.69	-28.1		
Propylene	0.0002			
Iso-butane	0.256	-30.6		
N-butane	0.434	-27.2		
Iso-pentane	0.0659	-27.7		
N-pentane	0.0620	-26.3		
Hexanes +	0.0418			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1096
Specific gravity, calculated: 0.629

Remarks: C72733 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. %.

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	786835	Job #:	47244	IS-94649	Co. Job#:
Sample Name:	State 3G-16H / Surface Casing				Co. Lab#:
Company:	Crestone Peak Resources				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Bradenhead Testing				
Location:					
Formation:					
Sampling Point:	433169				
Date Sampled:	2/25/2021	8:22	Date Received:	3/23/2021	Date Reported: 4/28/2021

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	0.0386			
Hydrogen	nd			
Argon	0.0105			
Oxygen	0.052			
Nitrogen	1.45			
Carbon Dioxide	nd			
Methane	83.02	-52.7	-252	
Ethane	10.16	-34.7		
Ethylene	nd			
Propane	3.91	-30.6		
Propylene	nd			
Iso-butane	0.374	-31.7		
N-butane	0.752	-29.0		
Iso-pentane	0.110	-28.6		
N-pentane	0.0954	-28.9		
Hexanes +	0.0274			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1169
Specific gravity, calculated: 0.668

Remarks: C72567 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. %.

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	786836	Job #:	47244	IS-94649	Co. Job#:
Sample Name:	State 3G-16H / Production Casing				Co. Lab#:
Company:	Crestone Peak Resources				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Bradenhead Testing				
Location:					
Formation:					
Sampling Point:	433169				
Date Sampled:	2/25/2021 8:28	Date Received:	3/23/2021	Date Reported:	4/28/2021

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.928			
Oxygen	20.74			
Nitrogen	78.25			
Carbon Dioxide	0.079			
Methane	0.0030			
Ethane	0.0013			
Ethylene	nd			
Propane	0.0011			
Propylene	nd			
Iso-butane	0.0002			
N-butane	0.0004			
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: C72567 8503
Insufficient concentrations for hydrocarbon analysis.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. All gas component carbon isotope values are reported on a scale defined by a two point calibration of LSVEC and NBS 19. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
a Stratum Reservoir brand
www.isotechlabs.com

Lab #:	786837	Job #:	47244	IS-94649	Co. Job#:
Sample Name:	State 3G-16H / Intermediate Casing				Co. Lab#:
Company:	Crestone Peak Resources				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Bradenhead Testing				
Location:					
Formation:					
Sampling Point:	433169				
Date Sampled:	2/25/2021	8:25	Date Received:	3/23/2021	Date Reported: 4/28/2021

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.0100			
Oxygen	0.058			
Nitrogen	0.69			
Carbon Dioxide	0.005			
Methane	90.47	-50.0	-300	
Ethane	4.35	-34.2		
Ethylene	0.0002			
Propane	2.09	-29.8		
Propylene	0.0006			
Iso-butane	0.371	-31.9		
N-butane	1.11	-29.1		
Iso-pentane	0.314	-29.0		
N-pentane	0.334	-29.0		
Hexanes +	0.200			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1132
Specific gravity, calculated: 0.637

Remarks: C72567 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. %.