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Isotech Gas Data

Job 51010

CoreTrac IS-107457

Isotech Lab No.	Sample Name	Sample Date	Sample Time	Field Name	Location	GC Date	He %	H_2 %	Ar %	O_2 %	CO_2 %	N_2 %	CO %	C_1 %	C_2 %	C_2H_4 %	C_3 %	C_3H_6 %	iC_4 %	nC_4 %	iC_5 %	nC_5 %	C_6+ %	Specific Gravity	BTU	Comments
828610	SVE01-0511-1130	5/11/2022	11:30	Williams 18-29, 36-20 Wellheads	Weld County	5/24/2022	nd	nd	0.961	15.51	3.13	80.40	nd	0.0004	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.010	0	
828611	SVE02-0511-1137	5/11/2022	11:37	Williams 18-29, 36-20 Wellheads	Weld County	5/24/2022	nd	nd	0.968	9.57	8.13	81.33	nd	0.0005	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.029	0	
828612	SVE03-0511-1145	5/11/2022	11:45	Williams 18-29, 36-20 Wellheads	Weld County	5/24/2022	nd	nd	0.988	7.61	7.65	83.75	nd	0.0004	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.024	0	
828613	SVE04-0511-1152	5/11/2022	11:52	Williams 18-29, 36-20 Wellheads	Weld County	5/25/2022	nd	nd	1.00	0.66	13.90	84.44	nd	0.0014	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.049	0	
828614	SVE05-0511-1200	5/11/2022	12:00	Williams 18-29, 36-20 Wellheads	Weld County	5/25/2022	nd	nd	0.945	15.88	4.31	78.86	nd	0.0008	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.017	0	
828615	SVE06-0511-1208	5/11/2022	12:08	Williams 18-29, 36-20 Wellheads	Weld County	5/25/2022	nd	nd	0.986	7.22	8.42	83.37	nd	0.0005	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.028	0	
828616	SVE07-0511-1215	5/11/2022	12:15	Williams 18-29, 36-20 Wellheads	Weld County	5/25/2022	nd	nd	1.01	0.46	13.69	84.84	nd	0.0010	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.048	0	
828617	SVE08-0511-1225	5/11/2022	12:25	Williams 18-29, 36-20 Wellheads	Weld County	5/28/2022	nd	nd	1.00	12.11	7.09	79.80	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.027	0	
828618	SVE09-0511-1234	5/11/2022	12:34	Williams 18-29, 36-20 Wellheads	Weld County	5/28/2022	nd	nd	0.975	17.13	3.93	77.97	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.017	0	
828619	SVE10-0511-1244	5/11/2022	12:44	Williams 18-29, 36-20 Wellheads	Weld County	5/28/2022	nd	nd	0.995	15.25	3.88	79.87	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.0001	1.014	0	
828620	SVE11-0511-1252	5/11/2022	12:52	Williams 18-29, 36-20 Wellheads	Weld County	5/28/2022	nd	nd	1.08	0.39	11.83	86.70	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.038	0	
828621	SVE12-0511-1300	5/11/2022	13:00	Williams 18-29, 36-20 Wellheads	Weld County	5/28/2022	nd	nd	1.08	0.44	11.01	87.45	nd	0.0244	0.0001	nd	nd	nd	nd	nd	nd	nd	0.0002	1.033	0	
828622	SVE13-0511-1307	5/11/2022	13:07	Williams 18-29, 36-20 Wellheads	Weld County	5/28/2022	nd	nd	0.973	18.38	2.87	77.78	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.012	0	
828623	SVE14-0511-1315	5/11/2022	13:15	Williams 18-29, 36-20 Wellheads	Weld County	5/28/2022	nd	nd	0.980	17.05	3.94	78.03	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.017	0	
828624	SVE15-0511-1322	5/11/2022	13:22	Williams 18-29, 36-20 Wellheads	Weld County	5/28/2022	nd	nd	0.949	17.32	3.27	78.46	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.013	0	
828625	SVE16-0511-1330	5/11/2022	13:30	Williams 18-29, 36-20 Wellheads	Weld County	5/28/2022	nd	nd	0.974	16.87	3.51	78.65	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.014	0	
828626	SVE17-0511-1337	5/11/2022	13:37	Williams 18-29, 36-20 Wellheads	Weld County	5/28/2022	nd	nd	0.990	16.99	2.27	79.75	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.007	0	

nd = not detected, na = not analyzed

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Lab #:	828610	Job #:	51010	IS-107457	Co. Job#:
Sample Name:	SVE01-0511-1130				Co. Lab#:
Company:	Oxy USA Inc.				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20 Wellheads				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	5/11/2022 11:30	Date Received:	5/16/2022	Date Reported:	5/31/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.961			
Oxygen	15.51			
Nitrogen	80.40			
Carbon Dioxide	3.13			
Methane	0.0004			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

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

Specific gravity, calculated: 1.010

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	828611	Job #:	51010	IS-107457	Co. Job#:
Sample Name:	SVE02-0511-1137				Co. Lab#:
Company:	Oxy USA Inc.				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20 Wellheads				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	5/11/2022 11:37	Date Received:	5/16/2022	Date Reported:	5/31/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.968			
Oxygen	9.57			
Nitrogen	81.33			
Carbon Dioxide	8.13			
Methane	0.0005			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

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

Specific gravity, calculated: 1.029

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	828612	Job #:	51010	IS-107457	Co. Job#:
Sample Name:	SVE03-0511-1145				Co. Lab#:
Company:	Oxy USA Inc.				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20 Wellheads				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	5/11/2022 11:45	Date Received:	5/16/2022	Date Reported:	5/31/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.988			
Oxygen	7.61			
Nitrogen	83.75			
Carbon Dioxide	7.65			
Methane	0.0004			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

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

Specific gravity, calculated: 1.024

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	828613	Job #:	51010	IS-107457	Co. Job#:
Sample Name:	SVE04-0511-1152				Co. Lab#:
Company:	Oxy USA Inc.				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20 Wellheads				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	5/11/2022 11:52	Date Received:	5/16/2022	Date Reported:	5/31/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	1.00			
Oxygen	0.66			
Nitrogen	84.44			
Carbon Dioxide	13.90			
Methane	0.0014			
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: 1.049

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	828614	Job #:	51010	IS-107457	Co. Job#:
Sample Name:	SVE05-0511-1200				Co. Lab#:
Company:	Oxy USA Inc.				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20 Wellheads				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	5/11/2022 12:00	Date Received:	5/16/2022	Date Reported:	5/31/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.945			
Oxygen	15.88			
Nitrogen	78.86			
Carbon Dioxide	4.31			
Methane	0.0008			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0
Specific gravity, calculated: 1.017

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	828615	Job #:	51010	IS-107457	Co. Job#:
Sample Name:	SVE06-0511-1208				Co. Lab#:
Company:	Oxy USA Inc.				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20 Wellheads				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	5/11/2022 12:08	Date Received:	5/16/2022	Date Reported:	5/31/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.986			
Oxygen	7.22			
Nitrogen	83.37			
Carbon Dioxide	8.42			
Methane	0.0005			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

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

Specific gravity, calculated: 1.028

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	828616	Job #:	51010	IS-107457	Co. Job#:
Sample Name:	SVE07-0511-1215				Co. Lab#:
Company:	Oxy USA Inc.				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20 Wellheads				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	5/11/2022 12:15	Date Received:	5/16/2022	Date Reported:	5/31/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	1.01			
Oxygen	0.46			
Nitrogen	84.84			
Carbon Dioxide	13.69			
Methane	0.0010			
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: 1.048

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	828617	Job #:	51010	IS-107457	Co. Job#:
Sample Name:	SVE08-0511-1225				Co. Lab#:
Company:	Oxy USA Inc.				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20 Wellheads				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	5/11/2022 12:25	Date Received:	5/16/2022	Date Reported:	5/31/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	1.00			
Oxygen	12.11			
Nitrogen	79.80			
Carbon Dioxide	7.09			
Methane	nd			
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: 1.027

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	828618	Job #:	51010	IS-107457	Co. Job#:
Sample Name:	SVE09-0511-1234				Co. Lab#:
Company:	Oxy USA Inc.				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20 Wellheads				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	5/11/2022 12:34	Date Received:	5/16/2022	Date Reported:	5/31/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.975			
Oxygen	17.13			
Nitrogen	77.97			
Carbon Dioxide	3.93			
Methane	nd			
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: 1.017

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	828619	Job #:	51010	IS-107457	Co. Job#:
Sample Name:	SVE10-0511-1244				Co. Lab#:
Company:	Oxy USA Inc.				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20 Wellheads				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	5/11/2022 12:44	Date Received:	5/16/2022	Date Reported:	5/31/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.995			
Oxygen	15.25			
Nitrogen	79.87			
Carbon Dioxide	3.88			
Methane	nd			
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: 1.014

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	828620	Job #:	51010	IS-107457	Co. Job#:
Sample Name:	SVE11-0511-1252				Co. Lab#:
Company:	Oxy USA Inc.				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20 Wellheads				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	5/11/2022 12:52	Date Received:	5/16/2022	Date Reported:	5/31/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	1.08			
Oxygen	0.39			
Nitrogen	86.70			
Carbon Dioxide	11.83			
Methane	nd			
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: 1.038

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	828621	Job #:	51010	IS-107457	Co. Job#:
Sample Name:	SVE12-0511-1300				Co. Lab#:
Company:	Oxy USA Inc.				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20 Wellheads				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	5/11/2022 13:00	Date Received:	5/16/2022	Date Reported:	5/31/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	1.08			
Oxygen	0.44			
Nitrogen	87.45			
Carbon Dioxide	11.01			
Methane	0.0244			
Ethane	0.0001			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	0.0002			

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

Specific gravity, calculated: 1.033

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	828622	Job #:	51010	IS-107457	Co. Job#:
Sample Name:	SVE13-0511-1307				Co. Lab#:
Company:	Oxy USA Inc.				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20 Wellheads				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	5/11/2022 13:07	Date Received:	5/16/2022	Date Reported:	5/31/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.973			
Oxygen	18.38			
Nitrogen	77.78			
Carbon Dioxide	2.87			
Methane	nd			
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: 1.012

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	828623	Job #:	51010	IS-107457	Co. Job#:
Sample Name:	SVE14-0511-1315				Co. Lab#:
Company:	Oxy USA Inc.				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20 Wellheads				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	5/11/2022 13:15	Date Received:	5/16/2022	Date Reported:	5/31/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.980			
Oxygen	17.05			
Nitrogen	78.03			
Carbon Dioxide	3.94			
Methane	nd			
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: 1.017

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	828624	Job #:	51010	IS-107457	Co. Job#:
Sample Name:	SVE15-0511-1322				Co. Lab#:
Company:	Oxy USA Inc.				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20 Wellheads				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	5/11/2022 13:22	Date Received:	5/16/2022	Date Reported:	5/31/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.949			
Oxygen	17.32			
Nitrogen	78.46			
Carbon Dioxide	3.27			
Methane	nd			
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: 1.013

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	828625	Job #:	51010	IS-107457	Co. Job#:
Sample Name:	SVE16-0511-1330				Co. Lab#:
Company:	Oxy USA Inc.				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20 Wellheads				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	5/11/2022 13:30	Date Received:	5/16/2022	Date Reported:	5/31/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.974			
Oxygen	16.87			
Nitrogen	78.65			
Carbon Dioxide	3.51			
Methane	nd			
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: 1.014

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	828626	Job #:	51010	IS-107457	Co. Job#:
Sample Name:	SVE17-0511-1337				Co. Lab#:
Company:	Oxy USA Inc.				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20 Wellheads				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	5/11/2022 13:37	Date Received:	5/16/2022	Date Reported:	5/31/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.990			
Oxygen	16.99			
Nitrogen	79.75			
Carbon Dioxide	2.27			
Methane	nd			
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: 1.007

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Isotech Gas Data

Job 50401

CoreTrac IS-107457

Isotech Lab No.	Sample Name	Sample Date	Sample Time	Field Name	Location	GC Date	He %	H_2 %	Ar %	O_2 %	CO_2 %	N_2 %	CO %	C_1 %	C_2 %	C_2H_4 %	C_3 %	C_3H_6 %	iC_4 %	nC_4 %	iC_5 %	nC_5 %	C_6+ %	Specific Gravity	BTU	Comments
821567	SVE01-0314-1331	3/14/2022	13:31	Williams 18-29, 36-20	Weld County	3/22/2022	nd	nd	0.950	17.60	1.08	80.37	nd	0.0003	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.001	0	
821568	SVE02-0314-1149	3/14/2022	11:49	Williams 18-29, 36-20	Weld County	3/22/2022	nd	nd	0.983	5.77	9.64	83.60	nd	0.0050	0.0006	nd	nd	nd	nd	nd	nd	nd	0.0001	1.032	0	
821569	SVE03-0314-1359	3/14/2022	13:59	Williams 18-29, 36-20	Weld County	3/22/2022	nd	nd	0.992	9.37	6.06	83.58	nd	0.0014	0.0001	nd	nd	nd	nd	nd	nd	nd	0.0001	1.018	0	
821570	SVE04-0314-1215	3/14/2022	12:15	Williams 18-29, 36-20	Weld County	3/24/2022	nd	nd	1.06	1.01	9.89	88.04	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.028	0	
821571	SVE05-0314-1136	3/14/2022	11:36	Williams 18-29, 36-20	Weld County	3/24/2022	nd	nd	0.968	17.47	2.46	79.10	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.009	0	
821572	SVE06-0314-1228	3/14/2022	12:28	Williams 18-29, 36-20	Weld County	3/24/2022	nd	nd	1.00	14.03	2.53	82.44	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.005	0	
821573	SVE07-0314-1240	3/14/2022	12:40	Williams 18-29, 36-20	Weld County	3/24/2022	nd	nd	1.06	4.68	6.69	87.57	nd	0.0009	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.015	0	
821574	SVE08-0315-1308	3/15/2022	13:08	Williams 18-29, 36-20	Weld County	3/24/2022	nd	nd	0.971	15.32	4.37	79.34	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.016	0	
821575	SVE09-0315-1318	3/15/2022	13:18	Williams 18-29, 36-20	Weld County	3/25/2022	nd	nd	0.959	18.43	2.83	77.78	nd	0.0002	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.012	0	
821576	SVE10-0315-1257	3/15/2022	12:57	Williams 18-29, 36-20	Weld County	3/25/2022	nd	nd	0.984	16.12	2.49	80.41	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.007	0	
821577	SVE11-0314-1252	3/14/2022	12:52	Williams 18-29, 36-20	Weld County	3/25/2022	nd	nd	1.12	0.27	7.48	91.13	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.014	0	
821578	SVE12-0314-1202	3/14/2022	12:02	Williams 18-29, 36-20	Weld County	3/25/2022	nd	nd	1.05	6.29	5.81	86.85	nd	0.0002	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.012	0	
821579	SVE13-0315-1349	3/15/2022	13:49	Williams 18-29, 36-20	Weld County	3/25/2022	nd	nd	0.961	19.09	1.78	78.17	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.007	0	
821580	SVE14-0315-1338	3/15/2022	13:38	Williams 18-29, 36-20	Weld County	3/25/2022	nd	nd	0.968	18.41	2.18	78.44	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.009	0	
821581	SVE15-0315-1328	3/15/2022	13:28	Williams 18-29, 36-20	Weld County	3/25/2022	nd	nd	0.950	19.01	2.05	77.97	nd	0.0123	nd	nd	nd	nd	nd	nd	nd	nd	0.0044	1.009	0	
821582	SVE16-0314-1317	3/14/2022	13:17	Williams 18-29, 36-20	Weld County	3/25/2022	nd	nd	0.957	17.25	1.94	79.85	nd	0.0018	nd	nd	nd	nd	nd	nd	nd	nd	0.0042	1.006	0	
821583	SVE17-0314-1303	3/14/2022	13:03	Williams 18-29, 36-20	Weld County	3/25/2022	nd	nd	0.923	18.99	0.83	79.26	nd	0.0008	nd	nd	nd	nd	nd	nd	nd	nd	0.0003	1.002	0	

nd = not detected, na = not analyzed

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Lab #:	821567	Job #:	50401	IS-107457	Co. Job#:
Sample Name:	SVE01-0314-1331				Co. Lab#:
Company:	Anadarko				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	3/14/2022 13:31	Date Received:	3/17/2022	Date Reported:	3/29/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.950			
Oxygen	17.60			
Nitrogen	80.37			
Carbon Dioxide	1.08			
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

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	821568	Job #:	50401	IS-107457	Co. Job#:
Sample Name:	SVE02-0314-1149				Co. Lab#:
Company:	Anadarko				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	3/14/2022 11:49	Date Received:	3/17/2022	Date Reported:	3/29/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.983			
Oxygen	5.77			
Nitrogen	83.60			
Carbon Dioxide	9.64			
Methane	0.0050			
Ethane	0.0006			
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: 1.032

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	821569	Job #:	50401	IS-107457	Co. Job#:
Sample Name:	SVE03-0314-1359				Co. Lab#:
Company:	Anadarko				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	3/14/2022 13:59	Date Received:	3/17/2022	Date Reported:	3/29/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.992			
Oxygen	9.37			
Nitrogen	83.58			
Carbon Dioxide	6.06			
Methane	0.0014			
Ethane	0.0001			
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: 1.018

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	821570	Job #:	50401	IS-107457	Co. Job#:
Sample Name:	SVE04-0314-1215				Co. Lab#:
Company:	Anadarko				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	3/14/2022 12:15	Date Received:	3/17/2022	Date Reported:	3/29/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	1.06			
Oxygen	1.01			
Nitrogen	88.04			
Carbon Dioxide	9.89			
Methane	nd			
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: 1.028

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	821571	Job #:	50401	IS-107457	Co. Job#:
Sample Name:	SVE05-0314-1136				Co. Lab#:
Company:	Anadarko				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	3/14/2022 11:36	Date Received:	3/17/2022	Date Reported:	3/29/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.968			
Oxygen	17.47			
Nitrogen	79.10			
Carbon Dioxide	2.46			
Methane	nd			
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: 1.009

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	821572	Job #:	50401	IS-107457	Co. Job#:
Sample Name:	SVE06-0314-1228				Co. Lab#:
Company:	Anadarko				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	3/14/2022 12:28	Date Received:	3/17/2022	Date Reported:	3/29/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	1.00			
Oxygen	14.03			
Nitrogen	82.44			
Carbon Dioxide	2.53			
Methane	nd			
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: 1.005

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	821573	Job #:	50401	IS-107457	Co. Job#:
Sample Name:	SVE07-0314-1240				Co. Lab#:
Company:	Anadarko				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	3/14/2022 12:40	Date Received:	3/17/2022	Date Reported:	3/29/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	1.06			
Oxygen	4.68			
Nitrogen	87.57			
Carbon Dioxide	6.69			
Methane	0.0009			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

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

Specific gravity, calculated: 1.015

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	821574	Job #:	50401	IS-107457	Co. Job#:
Sample Name:	SVE08-0315-1308				Co. Lab#:
Company:	Anadarko				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	3/15/2022 13:08	Date Received:	3/17/2022	Date Reported:	3/29/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.971			
Oxygen	15.32			
Nitrogen	79.34			
Carbon Dioxide	4.37			
Methane	nd			
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: 1.016

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	821575	Job #:	50401	IS-107457	Co. Job#:
Sample Name:	SVE09-0315-1318				Co. Lab#:
Company:	Anadarko				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	3/15/2022 13:18	Date Received:	3/17/2022	Date Reported:	3/29/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.959			
Oxygen	18.43			
Nitrogen	77.78			
Carbon Dioxide	2.83			
Methane	0.0002			
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: 1.012

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	821576	Job #:	50401	IS-107457	Co. Job#:
Sample Name:	SVE10-0315-1257				Co. Lab#:
Company:	Anadarko				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	3/15/2022 12:57	Date Received:	3/17/2022	Date Reported:	3/29/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.984			
Oxygen	16.12			
Nitrogen	80.41			
Carbon Dioxide	2.49			
Methane	nd			
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: 1.007

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	821577	Job #:	50401	IS-107457	Co. Job#:
Sample Name:	SVE11-0314-1252				Co. Lab#:
Company:	Anadarko				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	3/14/2022 12:52	Date Received:	3/17/2022	Date Reported:	3/29/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	1.12			
Oxygen	0.27			
Nitrogen	91.13			
Carbon Dioxide	7.48			
Methane	nd			
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: 1.014

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	821578	Job #:	50401	IS-107457	Co. Job#:
Sample Name:	SVE12-0314-1202				Co. Lab#:
Company:	Anadarko				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	3/14/2022 12:02	Date Received:	3/17/2022	Date Reported:	3/29/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	1.05			
Oxygen	6.29			
Nitrogen	86.85			
Carbon Dioxide	5.81			
Methane	0.0002			
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: 1.012

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	821579	Job #:	50401	IS-107457	Co. Job#:
Sample Name:	SVE13-0315-1349				Co. Lab#:
Company:	Anadarko				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	3/15/2022 13:49	Date Received:	3/17/2022	Date Reported:	3/29/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.961			
Oxygen	19.09			
Nitrogen	78.17			
Carbon Dioxide	1.78			
Methane	nd			
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: 1.007

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	821580	Job #:	50401	IS-107457	Co. Job#:
Sample Name:	SVE14-0315-1338				Co. Lab#:
Company:	Anadarko				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	3/15/2022 13:38	Date Received:	3/17/2022	Date Reported:	3/29/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.968			
Oxygen	18.41			
Nitrogen	78.44			
Carbon Dioxide	2.18			
Methane	nd			
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: 1.009

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	821581	Job #:	50401	IS-107457	Co. Job#:
Sample Name:	SVE15-0315-1328				Co. Lab#:
Company:	Anadarko				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	3/15/2022 13:28	Date Received:	3/17/2022	Date Reported:	3/29/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.950			
Oxygen	19.01			
Nitrogen	77.97			
Carbon Dioxide	2.05			
Methane	0.0123			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	0.0044			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0
Specific gravity, calculated: 1.009

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	821582	Job #:	50401	IS-107457	Co. Job#:
Sample Name:	SVE16-0314-1317				Co. Lab#:
Company:	Anadarko				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	3/14/2022 13:17	Date Received:	3/17/2022	Date Reported:	3/29/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.957			
Oxygen	17.25			
Nitrogen	79.85			
Carbon Dioxide	1.94			
Methane	0.0018			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	0.0042			

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

Specific gravity, calculated: 1.006

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Lab #:	821583	Job #:	50401	IS-107457	Co. Job#:
Sample Name:	SVE17-0314-1303				Co. Lab#:
Company:	Anadarko				
API/Well:					
Container:	IsoTube®				
Field/Site Name:	Williams 18-29, 36-20				
Location:	Weld County				
Formation:					
Sampling Point:					
Date Sampled:	3/14/2022 13:03	Date Received:	3/17/2022	Date Reported:	3/29/2022

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.923			
Oxygen	18.99			
Nitrogen	79.26			
Carbon Dioxide	0.83			
Methane	0.0008			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	0.0003			

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

Specific gravity, calculated: 1.002

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.