Isotech Gas Data

Job 10881

Carter Road

Isotech Lab No.	Sample Name	Location	Sampling Point	GC date	H_2S %	He %	H_2 %	Ar %	O_2 %	CO_2 %	N_2 %	CO %	C_1 %	C_2 %	C_2H_4 %	C_3 %	iC_4 %	nC_4 %	iC_5 %	nC_5 %	C_6+ %	MS date	$\delta^{13}C_1$ ‰	δDC_1 ‰	Specific Gravity	BTU
153882	G01120801	Dimock Twp	Sautner WW	1/15/2009	0	0.0245	0	0.404	8.26	0.27	33.47	0	56.47	1.06	0	0.0355	0	0.0019	0	0	0	1/15/2009	-30.66	-178.7	0.749	592
153883	G01130801	Dimock Twp	Gesford #3 - 20 casing"	1/15/2009	0	0.0345	0.166	0.0270	0.573	0	2.40	0	94.91	1.82	0	0.0666	0.0019	0.0048	0	0	0	1/15/2009	-31.20	-173.9	0.576	997
153884	G01130802	Dimock Twp	Gesford #3 - 13 3/8 casing"	1/15/2009	0	0.0237	0.107	0.375	8.36	0.015	31.86	0	58.07	1.14	0	0.0411	0.0015	0.0027	0	0	0	1/15/2009	-31.59	-175.3	0.740	610

Chemical analysis based on standards accurate to within 2%

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ANALYSIS REPORT

Lab #: 153882 Job #: 10881
Sample Name: G01120801 Co. Lab#:
Company: Penn. Dept. of Environmental Res.
Date Sampled: 1/12/2009
Container: Cali-5-Bond Bag
Field/Site Name: Carter Road
Location: Dimock Twp
Formation/Depth:
Sampling Point: Sautner WW
Date Received: 1/15/2009 Date Reported: 1/19/2009

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Hydrogen Sulfide	nd			
Helium	0.0245			
Hydrogen	nd			
Argon	0.404			
Oxygen	8.26			
Nitrogen	33.47			
Carbon Dioxide	0.27			
Methane	56.47	-30.66	-178.7	
Ethane	1.06			
Ethylene	na			
Propane	0.0355			
Iso-butane	nd			
N-butane	0.0019			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 592
Specific gravity, calculated: 0.749

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%

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ANALYSIS REPORT

Lab #: 153883 Job #: 10881
Sample Name: G01130801 Co. Lab#:
Company: Penn. Dept. of Environmental Res.
Date Sampled: 1/13/2009
Container: Cali-5-Bond Bag
Field/Site Name: Carter Road
Location: Dimock Twp
Formation/Depth:
Sampling Point: Gesford #3 - 20" casing
Date Received: 1/15/2009 Date Reported: 1/19/2009

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Hydrogen Sulfide	nd			
Helium	0.0345			
Hydrogen	0.166			
Argon	0.0270			
Oxygen	0.573			
Nitrogen	2.40			
Carbon Dioxide	nd			
Methane	94.91	-31.20	-173.9	
Ethane	1.82			
Ethylene	na			
Propane	0.0666			
Iso-butane	0.0019			
N-butane	0.0048			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 997
Specific gravity, calculated: 0.576

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%

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ANALYSIS REPORT

Lab #: 153884 Job #: 10881
Sample Name: G01130802 Co. Lab#:
Company: Penn. Dept. of Environmental Res.
Date Sampled: 1/13/2009
Container: Cali-5-Bond Bag
Field/Site Name: Carter Road
Location: Dimock Twp
Formation/Depth:
Sampling Point: Gesford #3 - 13 3/8" casing
Date Received: 1/15/2009 Date Reported: 1/19/2009

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Hydrogen Sulfide	nd			
Helium	0.0237			
Hydrogen	0.107			
Argon	0.375			
Oxygen	8.36			
Nitrogen	31.86			
Carbon Dioxide	0.015			
Methane	58.07	-31.59	-175.3	
Ethane	1.14			
Ethylene	na			
Propane	0.0411			
Iso-butane	0.0015			
N-butane	0.0027			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 610
Specific gravity, calculated: 0.740

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%