

EXTENDED NATURAL GAS ANALYSIS (*DHA)

MAIN PAGE

LEASE #: NAME/DESCRIP : CHESTNUT 21T-201
BRADEN HEAD GAS

PROJECT NO. : 201606065 ANALYSIS NO. : 01
COMPANY NAME : PDC ENERGY, LLC ANALYSIS DATE: JUNE 14, 2016 13:57
OFFICE / BRANCH: EVANS, CO SAMPLE DATE : JUNE 13, 2016 16:15
CUSTOMER REF: TO:
PRODUCER : EFFECTIVE DATE:

FIELD DATA

SAMPLE CYCLE: SAMPLE TYPE: SPOT
SAMPLE PRES. : 628.0 psig CYLINDER NO. : 1816
LAB PRES: psig SAMPLED BY : JOHN MOSER
SAMPLE TEMP. : 79.0 °f SAMPLING COMPANY: EMPACT
AMBIENT TEMP.: °f H2S BY STAIN TUBE: - ppm
H2O BY STAIN TUBE: - #/mmcf CO2 BY STAIN TUBE: - Mol %
FIELD COMMENTS: NO PROBE
LAB COMMENTS:

COMPONENT	MOLE %	MASS %	GPM @ 14.730	GPM @ 14.650
ALCOHOLS	0.0001	0.0003		
HELIUM	0.01	0.00	---	---
HYDROGEN	6.92	0.74	---	---
OXYGEN/ARGON	0.04	0.07	---	---
NITROGEN	2.9700	4.4200	---	---
CARBON DIOXIDE	0.01	0.02	---	---
METHANE	73.71220	62.80670	---	---
ETHANE	10.3035	16.4550	2.7617	2.7467
PROPANE	4.4400	10.3985	1.2261	1.2194
I-BUTANE	0.5541	1.7105	0.1819	0.1809
N-BUTANE	0.8326	2.5702	0.2633	0.2619
I-PENTANE	0.1147	0.4395	0.0422	0.0420
N-PENTANE	0.0786	0.3012	0.0281	0.0280
HEXANES PLUS	0.0142	0.0681	0.0040	0.0040
TOTALS	100.00000	100.00000	4.5073	4.4829

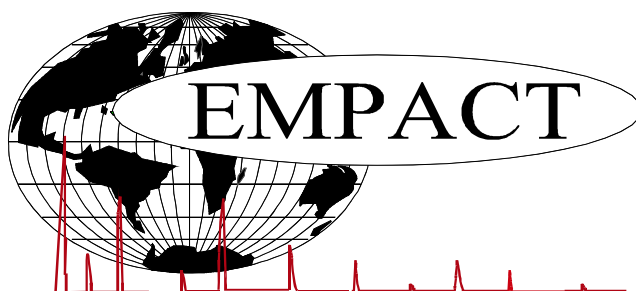
BTEX COMPONENTS	MOLE%	WT%	BTU @	14.730	14.650
BENZENE	0.0001	0.0004	LOW NET DRY REAL :	1013.1 /scf	1007.6 /scf
TOLUENE	0.0001	0.0005	NET WET REAL :	995.5 /scf	990.0 /scf
ETHYLBENZENE	0.0000	0.0000	HIGH GROSS DRY REAL :	1119.9 /scf	1113.8 /scf
XYLENES	0.0000	0.0000	GROSS WET REAL :	1100.4 /scf	1094.3 /scf
TOTAL BTEX	0.0002	0.0009	NET DRY REAL :	20424.3 /lb	20313.4 /lb
			GROSS DRY REAL :	22577.2 /lb	22454.6 /lb

(CALC: GPA STD 2145 & TP-17 @14.696 & 60 F)

*(DETAILED HYDROCARBON ANALYSIS/NJ 1993) ; ASTM D6730

RELATIVE DENSITY (AIR=1): 0.6501
COMPRESSIBILITY FACTOR : 0.99734

The data presented herein has been acquired by means of current analytical techniques and represents the judicious conclusion EMPACT Analytical Systems, Inc. Results of the analysis can be affected by the sampling conditions, therefore, are only warranted through proper lab protocol. EMPACT assumes no responsibility for interpretation or any consequences from application of the reported information and is the sole liability of the user. The reproduction in any media of this reported information may not be made, in portion or as a whole, without the written permission of EMPACT Analytical Systems, Inc.



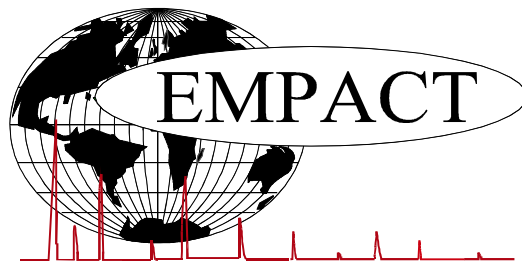
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GLYCALC INFORMATION

PROJECT NO. :	201606065	ANALYSIS NO. :	01
COMPANY NAME :	PDC ENERGY, LLC	ANALYSIS DATE:	JUNE 14, 2016 13:57
ACCOUNT NO. :		SAMPLE DATE :	JUNE 13, 2016 16:15
PRODUCER :		CYLINDER NO. :	1816
LEASE NO. :		SAMPLED BY :	JOHN MOSER
NAME/DESCRIP :	CHESTNUT 21T-201 BRADEN HEAD GAS		
FIELD DATA		SAMPLE TEMP. :	79.0
SAMPLE PRES. :	628.0	AMBIENT TEMP.:	
COMMENTS :	NO PROBE SPOT		

Componet	Mole %	Wt %
Helium	0.01	0.00
Hydrogen	6.92	0.74
Carbon Dioxide	0.01	0.02
Nitrogen	2.97	4.42
Methane	73.71220	62.80670
Ethane	10.3035	16.4550
Propane	4.4400	10.3985
Isobutane	0.5541	1.7105
n-Butane	0.8326	2.5702
Isopentane	0.1146	0.4391
n-Pentane	0.0786	0.3012
Cyclopentane	0.0001	0.0004
n-Hexane	0.0031	0.0142
Cyclohexane	0.0002	0.0009
Other Hexanes	0.0092	0.0421
Heptanes	0.0009	0.0048
Methycyclohexane	0.0002	0.0011
2,2,4 Trimethylpentane	0.0000	0.0000
Benzene	0.0001	0.0004
Toluene	0.0001	0.0005
Ethylbenzene	0.0000	0.0000
Xylenes	0.0000	0.0000
C8+ Heavies	0.0004	0.0041
Subtotal	99.95990	99.92970
Oxygen/Argon	0.04	0.07
Alcohols	0.0001	0.0003
Total	100.00000	100.00000

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DHA COMPONENT LIST

PROJECT NO. : 201606065
 COMPANY NAME : PDC ENERGY, LLC
 ACCOUNT NO. :
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 NAME/DESCRIP : CHESTNUT 21T-201
 BRADEN HEAD GAS

ANALYSIS NO. : 01
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 SAMPLE DATE : JUNE 13, 2016 16:15
 CYLINDER NO. : 1816
 SAMPLED BY : JOHN MOSER

FIELD DATA

SAMPLE PRES. : 628.0
 COMMENTS : NO PROBE
 SPOT

SAMPLE TEMP. : 79.0
 AMBIENT TEMP.:

COMPONENT	PIANO #	MOLE %	MASS %	GPM @ 14.730	GPM @ 14.650
Helium	---	0.01	0.00	---	---
Hydrogen	---	6.92	0.74	---	---
Oxygen/Argon	---	0.04	0.07	---	---
Nitrogen	---	2.97	4.42	---	---
Carbon Dioxide	---	0.01	0.02	---	---
Methane	P1	73.71220	62.80670	---	---
Ethane	P2	10.3035	16.4550	2.762	2.747
Propane	P3	4.4400	10.3985	1.226	1.219
i-Butane	I4	0.5541	1.7105	0.182	0.181
n-Butane	P4	0.8322	2.5690	0.263	0.262
2,2-Dimethylpropane	I5	0.0028	0.0107	0.001	0.001
i-Pentane	I5	0.1118	0.4284	0.041	0.041
Acetone	X3	0.0001	0.0003	0.000	0.000
UnknownC4s	U4	0.0004	0.0012	0.000	0.000
n-Pentane	P5	0.0786	0.3012	0.028	0.028
2,2-Dimethylbutane	I6	0.0006	0.0028	0.000	0.000
Cyclopentane	N5	0.0001	0.0004	0.000	0.000
2,3-Dimethylbutane	I6	0.0007	0.0032	0.000	0.000
2-Methylpentane	I6	0.0059	0.0270	0.002	0.002
3-Methylpentane	I6	0.0017	0.0078	0.001	0.001
n-Hexane	P6	0.0031	0.0142	0.001	0.001
Methylcyclopentane	N6	0.0003	0.0013	0.000	0.000
2,4-Dimethylpentane	I7	0.0001	0.0005	0.000	0.000
Benzene	A6	0.0001	0.0004	0.000	0.000
Cyclohexane	N6	0.0002	0.0009	0.000	0.000
2-Methylhexane	I7	0.0002	0.0011	0.000	0.000
3-Methylhexane	I7	0.0002	0.0011	0.000	0.000
1t,2-Dimethylcyclopentane	N7	0.0001	0.0005	0.000	0.000
n-Heptane	P7	0.0003	0.0016	0.000	0.000
Methylcyclohexane	N7	0.0002	0.0011	0.000	0.000
Toluene	A7	0.0001	0.0005	0.000	0.000
n-Octane	P8	0.0001	0.0006	0.000	0.000

n-Tetradecane	P14	0.0001	0.0011	0.000	0.000
n-Hexadecane	P16	0.0001	0.0012	0.000	0.000
UnknownC16s	U16	0.0001	0.0012	0.000	0.000
TOTAL		<u>100.00000</u>	<u>100.00000</u>	<u>4.5073</u>	<u>4.4829</u>

BTEX COMPONENTS	MOLE%	WT%	BTU @	14.730	14.650
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