



303-637-0150

EXTENDED NATURAL GAS ANALYSIS (*DHA)

MAIN PAGE

PROJECT NO. :	201406057	ANALYSIS NO. :	08
COMPANY NAME :	EE3	ANALYSIS DATE:	JUNE 10, 2014
ACCOUNT NO. :		SAMPLE DATE :	
PRODUCER :		CYLINDER NO. :	0592
LEASE NO. :		SAMPLED BY :	
NAME/DESCRIP :	MUTUAL 02-30H		

FIELD DATA	SAMPLE TEMP. :
SAMPLE PRES. :	AMBIENT TEMP.:
VAPOR PRES. :	GRAVITY :
COMMENTS :	

<u>COMPONENT</u>	<u>MOLE %</u>	<u>MASS %</u>	<u>GPM @ 14.650</u>	<u>GPM @ 14.730</u>
ALCOHOLS	0.0013	0.0031		
GLYCOLS	0.0005	0.0030		
HELIUM	0.05	0.01	---	---
HYDROGEN	0.01	0.00	---	---
OXYGEN/ARGON	0.01	0.01	---	---
NITROGEN	0.77	0.86	---	---
CARBON DIOXIDE	2.83	4.97	---	---
METHANE	70.28280	45.00800	---	---
ETHANE	9.3414	11.2124	2.4956	2.5092
PROPANE	8.0045	14.0895	2.2032	2.2152
I-BUTANE	0.9151	2.1231	0.2994	0.3011
N-BUTANE	3.6653	8.5039	1.1547	1.1610
I-PENTANE	1.1356	3.2589	0.4056	0.4078
N-PENTANE	1.2537	3.6107	0.4537	0.4561
HEXANES PLUS	1.7298	6.3374	0.7078	0.7114
<u>TOTALS</u>	<u>100.00000</u>	<u>100.00000</u>	<u>7.7200</u>	<u>7.7618</u>

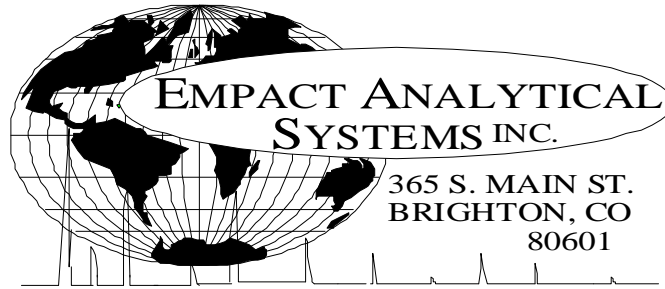
<u>BTEX COMPONENTS</u>	<u>MOLE%</u>	<u>WT%</u>		<u>BTU @ 14.650</u>	<u>14.730</u>
BENZENE	0.0491	0.1531	LOW NET DRY REAL :	1283.3 /scf	1290.4 /scf
TOLUENE	0.0320	0.1177	NET WET REAL :	1260.9 /scf	1267.9 /scf
ETHYLBENZENE	0.0024	0.0102	HIGH GROSS DRY REAL :	1408.4 /scf	1416.1 /scf
XYLENES	0.0067	0.0284	GROSS WET REAL :	1383.8 /scf	1391.5 /scf
<u>TOTAL BTEX</u>	<u>0.0902</u>	<u>0.3094</u>	NET DRY REAL :	19459.7 /lb	19566.0 /lb
			GROSS DRY REAL :	21366.3 /lb	21483.0 /lb

RELATIVE DENSITY (AIR=1):	0.8641
COMPRESSIBILITY FACTOR :	0.99544

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

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

THIS DATA HAS BEEN ACQUIRED THROUGH APPLICATION OF CURRENT STATE-OF-THE-ART ANALYTICAL TECHNIQUES.
THE USE OF THIS INFORMATION IS THE RESPONSIBILITY OF THE USER. IMPACT ANALYTICAL SYSTEMS, ASSUMES NO
RESPONSIBILITY FOR ACCURACY OF THE REPORTED INFORMATION NOR ANY CONSEQUENCES OF IT'S APPLICATION.



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GLYCALC INFORMATION

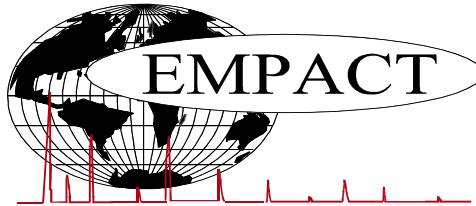
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COMPANY NAME :	EE3	ANALYSIS DATE:	JUNE 10, 2014
ACCOUNT NO. :		SAMPLE DATE :	
PRODUCER :		CYLINDER NO. :	0592
LEASE NO. :		SAMPLED BY :	
NAME/DESCRIP :	MUTUAL 02-30H		

FIELD DATA

SAMPLE PRES. :		SAMPLE TEMP. :	
VAPOR PRES. :		AMBIENT TEMP.:	
COMMENTS :		GRAVITY :	

<u>Componet</u>	<u>Mole %</u>	<u>Wt %</u>
Helium	0.05	0.01
Hydrogen	0.01	0.00
Carbon Dioxide	2.83	4.97
Nitrogen	0.77	0.86
Methane	70.28280	45.00800
Ethane	9.3414	11.2124
Propane	8.0045	14.0895
Isobutane	0.9151	2.1231
n-Butane	3.6653	8.5039
Isopentane	0.9906	2.8530
n-Pentane	1.2537	3.6107
Cyclopentane	0.1450	0.4059
n-Hexane	0.3124	1.0746
Cyclohexane	0.1139	0.3827
Other Hexanes	0.6320	2.1553
Heptanes	0.3055	1.2132
Methycyclohexane	0.1110	0.4351
2,2,4 Trimethylpentane	0.0004	0.0018
Benzene	0.0491	0.1531
Toluene	0.0320	0.1177
Ethylbenzene	0.0024	0.0102
Xylenes	0.0067	0.0284
C8+ Heavies	0.1644	0.7653
<u>Subtotal</u>	<u>99.98820</u>	<u>99.98390</u>
Oxygen/Argon	0.01	0.01
Alcohols	0.0013	0.0031
Glycols	0.0005	0.0030
Total	100.00000	100.00000

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EXTENDED NATURAL GAS ANALYSIS (*DHA)
DHA COMPONENT LIST

PROJECT NO. : 201406057
 COMPANY NAME : EE3
 ACCOUNT NO. :
 PRODUCER :
 LEASE NO. :
 NAME/DESCRIP : MUTUAL 02-30H

ANALYSIS NO. : 08
 ANALYSIS DATE: JUNE 10, 2014
 SAMPLE DATE :
 CYLINDER NO. : 0592
 SAMPLED BY :

FIELD DATA
 SAMPLE PRES. :
 VAPOR PRES. :
 COMMENTS :

SAMPLE TEMP. :
 AMBIENT TEMP. :
 GRAVITY :

<u>COMPONENT</u>	<u>PIANO #</u>	<u>MOLE %</u>	<u>MASS %</u>	<u>GPM @ 14.650</u>	<u>GPM @ 14.730</u>
Helium	---	0.05	0.01	---	---
Hydrogen	---	0.01	0.00	---	---
Oxygen/Argon	---	0.01	0.01	---	---
Nitrogen	---	0.77	0.86	---	---
Carbon Dioxide	---	2.83	4.97	---	---
Methane	P1	70.28280	45.00800	---	---
Ethane	P2	9.3414	11.2124	2.496	2.509
Propane	P3	8.0045	14.0895	2.203	2.215
i-Butane	I4	0.9151	2.1231	0.299	0.301
n-Butane	P4	3.6653	8.5039	1.155	1.161
2,2-Dimethylpropane	I5	0.0022	0.0064	0.001	0.001
i-Pentane	I5	0.9884	2.8466	0.362	0.364
Acetone	X3	0.0012	0.0028	0.000	0.000
n-Pentane	P5	1.2536	3.6104	0.454	0.456
t-Butanol	X4	0.0001	0.0003	0.000	0.000
2,2-Dimethylbutane	I6	0.0028	0.0096	0.001	0.001
Cyclopentane	N5	0.1450	0.4059	0.043	0.043
2,3-Dimethylbutane	I6	0.0236	0.0812	0.010	0.010
2-Methylpentane	I6	0.2361	0.8122	0.098	0.099
3-Methylpentane	I6	0.1365	0.4695	0.056	0.056
UnknownC5s	U5	0.0001	0.0003	0.000	0.000
n-Hexane	P6	0.3124	1.0746	0.128	0.129
2,2-Dimethylpentane	I7	0.0010	0.0040	0.000	0.000
Methylcyclopentane	N6	0.2330	0.7828	0.082	0.083
2,4-Dimethylpentane	I7	0.0096	0.0384	0.004	0.004
2,2,3-Trimethylbutane	I7	0.0003	0.0012	0.000	0.000
Benzene	A6	0.0491	0.1531	0.014	0.014
3,3-Dimethylpentane	I7	0.0003	0.0012	0.000	0.000
Cyclohexane	N6	0.1139	0.3827	0.039	0.039
2-Methylhexane	I7	0.0297	0.1188	0.014	0.014
2,3-Dimethylpentane	I7	0.0144	0.0576	0.007	0.007
1,1-Dimethylcyclopentane	N7	0.0120	0.0470	0.005	0.005
3-Methylhexane	I7	0.0386	0.1544	0.018	0.018
1c,3-Dimethylcyclopentane	N7	0.0231	0.0905	0.011	0.011
1t,3-Dimethylcyclopentane	N7	0.0200	0.0784	0.009	0.009
3-Ethylpentane	I7	0.0034	0.0136	0.002	0.002
1t,2-Dimethylcyclopentane	N7	0.0406	0.1592	0.019	0.019
2,2,4-Trimethylpentane	I8	0.0004	0.0018	0.000	0.000

n-Heptane	P7	0.0981	0.3924	0.045	0.045
1c,2-Dimethylcyclopentane	N7	0.0037	0.0145	0.002	0.002
Methylcyclohexane	N7	0.1110	0.4351	0.045	0.045
2,2-Dimethylhexane	I8	0.0109	0.0497	0.005	0.005
Ethylcyclopentane	N7	0.0095	0.0372	0.004	0.004
2,5-Dimethylhexane	I8	0.0015	0.0068	0.001	0.001
2,2,3-Trimethylpentane	I8	0.0010	0.0046	0.001	0.001
2,4-Dimethylhexane	I8	0.0040	0.0182	0.002	0.002
1c,2t,4-Trimethylcyclopentane	N8	0.0079	0.0354	0.004	0.004
3,3-Dimethylhexane	I8	0.0005	0.0023	0.000	0.000
1t,2c,4-Trimethylcyclopentane	N8	0.0089	0.0399	0.004	0.004
2,3,4-Trimethylpentane	I8	0.0014	0.0064	0.001	0.001
2,3,3-Trimethylpentane	I8	0.0001	0.0004	0.000	0.000
Toluene	A7	0.0320	0.1177	0.011	0.011
2,3-Dimethylhexane	I8	0.0034	0.0155	0.002	0.002
2-Methyl-3-ethylpentane	I8	0.0017	0.0077	0.001	0.001
1,1,2-Trimethylcyclopentane	N8	0.0001	0.0004	0.000	0.000
2-Methylheptane	I8	0.0154	0.0702	0.008	0.008
4-Methylheptane	I8	0.0038	0.0173	0.002	0.002
3-Methyl-3-ethylpentane	I8	0.0007	0.0032	0.000	0.000
3,4-Dimethylhexane	I8	0.0008	0.0036	0.000	0.000
1c,2c,4-Trimethylcyclopentane	N8	0.0003	0.0014	0.000	0.000
1c,3-Dimethylcyclohexane	N8	0.0003	0.0014	0.000	0.000
3-Methylheptane	I8	0.0062	0.0283	0.003	0.003
1c,2t,3-Trimethylcyclopentane	N8	0.0128	0.0573	0.007	0.007
3-Ethylhexane	I8	0.0025	0.0114	0.001	0.001
1t,4-Dimethylcyclohexane	N8	0.0049	0.0220	0.003	0.003
1,1-Dimethylcyclohexane	N8	0.0014	0.0063	0.001	0.001
3t-Ethylmethylcyclopentane	N8	0.0018	0.0081	0.001	0.001
2t-Ethylmethylcyclopentane	N8	0.0014	0.0063	0.001	0.001
1,1-Methylethylcyclopentane	N8	0.0052	0.0233	0.003	0.003
2,2,4-Trimethylhexane	I9	0.0005	0.0026	0.000	0.000
1t,2-Dimethylcyclohexane	N8	0.0071	0.0318	0.004	0.004
UnknownC7s	U7	0.0012	0.0048	0.001	0.001
n-Octane	P8	0.0136	0.0620	0.007	0.007
1c,4-Dimethylcyclohexane	N8	0.0068	0.0305	0.003	0.003
i-Propylcyclopentane	I8	0.0002	0.0009	0.000	0.000
2,4,4-Trimethylhexane	I9	0.0002	0.0010	0.000	0.000
2,3,5-Trimethylhexane	I9	0.0004	0.0020	0.000	0.000
2,2,3,4-Tetramethylpentane	I9	0.0001	0.0005	0.000	0.000
2,3,4-Trimethylhexane	I9	0.0002	0.0010	0.000	0.000
1c,2-Dimethylcyclohexane	N8	0.0010	0.0045	0.001	0.001
2,2-Dimethylheptane	I9	0.0001	0.0005	0.000	0.000
1,1,4-Trimethylcyclohexane	N9	0.0058	0.0292	0.003	0.003
2,2,3-Trimethylhexane	I9	0.0016	0.0082	0.001	0.001
2,4-Dimethylheptane	I9	0.0005	0.0026	0.000	0.000
4,4-Dimethylheptane	I9	0.0002	0.0010	0.000	0.000
Ethylcyclohexane	N8	0.0027	0.0121	0.001	0.001
n-Propylcyclopentane	N8	0.0010	0.0045	0.000	0.000
1c,3c,5-Trimethylcyclohexane	N9	0.0001	0.0005	0.000	0.000
2,5-Dimethylheptane	I9	0.0004	0.0020	0.000	0.000
3,3-Dimethylheptane	I9	0.0004	0.0020	0.000	0.000
3,5-Dimethylheptane	I9	0.0003	0.0015	0.000	0.000
2,6-Dimethylheptane	I9	0.0002	0.0010	0.000	0.000
1,1,3-Trimethylcyclohexane	N9	0.0003	0.0015	0.000	0.000
Ethylbenzene	I8	0.0024	0.0102	0.001	0.001
1c,2t,4t-Trimethylcyclohexane	N9	0.0010	0.0050	0.001	0.001
2,3-Dimethylheptane	I9	0.0006	0.0031	0.000	0.000
1,3-Dimethylbenzene (m-Xylene)	A8	0.0029	0.0123	0.001	0.001
1,4-Dimethylbenzene (p-Xylene)	A8	0.0022	0.0093	0.001	0.001
3,4-Dimethylheptane	I9	0.0002	0.0010	0.000	0.000

3,4-Dimethylheptane (2)	I9	0.0007	0.0036	0.000	0.000
4-Ethylheptane	I9	0.0002	0.0010	0.000	0.000
4-Methyloctane	I9	0.0007	0.0036	0.000	0.000
2-Methyloctane	I9	0.0009	0.0046	0.001	0.001
1c,2t,3-Trimethylcyclohexane	N9	0.0002	0.0010	0.000	0.000
3-Ethylheptane	I9	0.0002	0.0010	0.000	0.000
3-Methyloctane	I9	0.0011	0.0056	0.001	0.001
1,1,2-Trimethylcyclohexane	N9	0.0001	0.0005	0.000	0.000
3,3-Diethylpentane	I9	0.0001	0.0005	0.000	0.000
1,2-Dimethylbenzene (o-Xylene)	A8	0.0016	0.0068	0.001	0.001
i-Butylcyclopentane	N9	0.0009	0.0046	0.000	0.000
UnknownC8s	U8	0.0003	0.0014	0.000	0.000
n-Nonane	P9	0.0025	0.0128	0.001	0.001
1,1-Methylethylcyclohexane	N9	0.0005	0.0025	0.000	0.000
i-Propylbenzene	A9	0.0009	0.0043	0.000	0.000
i-Propylcyclohexane	N9	0.0002	0.0010	0.000	0.000
2,2-Dimethyloctane	I10	0.0001	0.0006	0.000	0.000
2,4-Dimethyloctane	I10	0.0001	0.0006	0.000	0.000
2,5-Dimethyloctane	I10	0.0001	0.0006	0.000	0.000
n-Butylcyclopentane	N9	0.0006	0.0030	0.000	0.000
3,3-Dimethyloctane	I10	0.0001	0.0006	0.000	0.000
n-Propylbenzene	A9	0.0003	0.0014	0.000	0.000
3,6-Dimethyloctane	I10	0.0003	0.0017	0.000	0.000
3-Methyl-5-ethylheptane	I10	0.0003	0.0017	0.000	0.000
1,3-Methylethylbenzene	A9	0.0003	0.0014	0.000	0.000
1,4-Methylethylbenzene	A9	0.0001	0.0005	0.000	0.000
1,3,5-Trimethylbenzene	A9	0.0002	0.0010	0.000	0.000
5-Methylnonane	I10	0.0002	0.0011	0.000	0.000
1,2-Methylethylbenzene	A9	0.0003	0.0014	0.000	0.000
3-Ethylcane	I10	0.0001	0.0006	0.000	0.000
3-Methylnonane	I10	0.0001	0.0006	0.000	0.000
t-Butylbenzene	A10	0.0003	0.0016	0.000	0.000
i-Butylcyclohexane	N10	0.0001	0.0006	0.000	0.000
UnknownC9s	U9	0.0038	0.0194	0.002	0.002
n-Decane	P10	0.0003	0.0017	0.000	0.000
1,2,3-Trimethylbenzene	A9	0.0001	0.0005	0.000	0.000
Sec-Butylcyclohexane	A10	0.0001	0.0006	0.000	0.000
1,2-Methyl-i-propylbenzene	A10	0.0001	0.0005	0.000	0.000
UnknownC10s	U10	0.0014	0.0079	0.001	0.001
1,2-Di-n-propylbenzene	A11	0.0001	0.0006	0.000	0.000
Naphthalene	A10	0.0002	0.0010	0.000	0.000
Triethylene Glycol	GL6	0.0005	0.0030	0.000	0.000
n-Dodecane	P12	0.0001	0.0007	0.000	0.000
2-Methylnaphthalene	A11	0.0001	0.0006	0.000	0.000
UnknownC12s	U12	0.0001	0.0006	0.000	0.000
n-Tetradecane	P14	0.0001	0.0008	0.000	0.000
n-Pentadecane	P15	0.0001	0.0008	0.000	0.000
UnknownC15s	U15	0.0001	0.0008	0.000	0.000
n-Hexadecane	P16	0.0001	0.0009	0.000	0.000
n-Heptadecane	P17	0.0001	0.0010	0.000	0.000
TOTAL		100.00000	100.00000	7.7200	7.7618

BTEX COMPONENTS	MOLE%	WT%	BTU @	14.650	14.730
BENZENE	0.0491	0.1531	LOW NET DRY REAL :	1283.3 /scf	1290.4 /scf
TOLUENE	0.0320	0.1177	NET WET REAL :	1260.9 /scf	1267.9 /scf
ETHYLBENZENE	0.0024	0.0102	HIGH GROSS DRY REAL :	1408.4 /scf	1416.1 /scf
XYLENES	0.0067	0.0284	GROSS WET REAL :	1383.8 /scf	1391.5 /scf
TOTAL BTEX	0.0902	0.3094	NET DRY REAL :	19459.7 /lb	19566.0 /lb
			GROSS DRY REAL :	21366.3 /lb	21483.0 /lb

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RELATIVE DENSITY (AIR=1): 0.8641
 COMPRESSIBILITY FACTOR : 0.99544