EMPACT ANALYTICAL SYSTEMS INC.
365 S. MAIN ST.
BRIGHTON, CO
80601

303-637-0150

EXTENDED NATURAL GAS LIQUID ANALYSIS (*DHA)

MAIN PAGE

PROJECT NO. :	201110023	ANALYSIS NO. :	03
COMPANY NAME :	CARRIZO OIL & GAS	ANALYSIS DATE:	OCTOBER 6, 2011
ACCOUNT NO. :		SAMPLE DATE :	OCTOBER 4, 2011
PRODUCER :		CYLINDER NO. :	1L GLASS
LEASE NO. :		SAMPLED BY :	J. MOSER
NAME/DESCRIP :	WICKSTROM 7-11-5-60 @ 6:15 P.M. OIL TREATER		EMPACT
FIELD DATA		SAMPLE TEMP. :	136
SAMPLE PRES. :	26	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT		

COMPONENT	MOLE %	MASS %	VOL %
ALCOHOLS	0.0010	0.0005	0.0005
NITROGEN (AIR)	0.0000	0.0000	0.0000
CARBON DIOXIDE	0.0000	0.0000	0.0000
METHANE	0.0000	0.0000	0.0000
ETHANE	0.0000	0.0000	0.0000
PROPANE	0.0000	0.0000	0.0000
I-BUTANE	0.0000	0.0000	0.0000
N-BUTANE	0.0000	0.0000	0.0000
I-PENTANE	0.0051	0.0026	0.0033
N-PENTANE	0.0000	0.0000	0.0000
UNKNOWN C1-C5	0.0016	0.0008	0.0010
HEXANES PLUS	99.9923	99.9961	99.9952
TOTALS	100.0000	100.0000	100.0000

BTEX COMPONENTS	MOLE%	MASS%
BENZENE	1.0139	0.5495
TOLUENE	2.3893	1.5276
ETHYLBENZENE	0.9597	0.7070
XYLENE	2.0530	1.5125
TOTAL BTEX	6.4159	4.2966

(CALC: GPA STD 2145-94 & TP-17 @14.696 & 60 F)

	TOTAL SAMPLE	C6+ FRACTION	
Specific Gravity (H2O=1) =	0.7704	0.7706	60/60
API Gravity =	52.17	52.12	60/60
Molecular Weight =	144.11	144.645	
Absolute Density =	6.42	6.42	LBS/GAL
Heating Value Liq. Idl Gas=	127028	127148	BTU/GAL
Vapor/Liquid =	17.62	17.58	CUFT/GAL
Vapor Pressure =	1.01	1.05	PSIA @100 F

*(DETAILED HYDROCARBON ANALYSIS NJ 1993) ; ASTM D6730

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E & P TANK / GLYCALC INFORMATION

PROJECT NO. :	201110023	ANALYSIS NO. :	03
COMPANY NAME :	CARRIZO OIL & GAS	ANALYSIS DATE:	OCTOBER 6, 2011
ACCOUNT NO. :		SAMPLE DATE :	OCTOBER 4, 2011
PRODUCER :		CYLINDER NO. :	1L GLASS
LEASE NO. :		SAMPLED BY :	J. MOSER
NAME/DESCRIP :	WICKSTROM 7-11-5-60 @ 6:15 P.M. OIL TREATER		EMPACT
FIELD DATA		SAMPLE TEMP. :	136
SAMPLE PRES. :	26	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT		

COMPONENT	Mole %		Wt %		LV %	
CARBON DIOXIDE	0.0000		0.0000		0.0000	
NITROGEN (AIR)	0.0000		0.0000		0.0000	
METHANE	0.0000		0.0000		0.0000	
ETHANE	0.0000		0.0000		0.0000	
PROPANE	0.0000		0.0000		0.0000	
I-BUTANE	0.0000		0.0000		0.0000	
N-BUTANE	0.0000		0.0000		0.0000	
I-PENTANE	0.0051		0.0026		0.0033	
N-PENTANE	0.0000		0.0000		0.0000	
CYCLOPENTANE (N-C5)	0.7071		0.3441		0.3483	
UNKNOWN C1-C5	0.0016		0.0008		0.0010	
N-HEXANE	4.0113		2.3990		2.7812	
CYCLOHEXANE (OTHER C6)	1.8789		1.0973		1.0778	
OTHER HEXANES	6.4210		3.7993		4.1763	
OTHER HEPTANES	9.4331		6.5137		7.0513	
METHYLCYCLOHEXANE (OTHER C7)	3.1823		2.1683		2.1539	
2,2,4 TRIMETHYLPENTANE	0.5702		0.3885		0.3968	
BENZENE	1.0139		0.5495		0.4790	
TOLUENE	2.3893		1.5276		1.3446	
ETHYLBENZENE	0.9597		0.7070		0.6222	
XYLENES	2.0530		1.5125		1.3303	
OTHER OCTANES	9.3382		7.4052		7.7441	
OCTANES PLUS	----	70.9554	----	81.5973	----	80.5828
NONANES	11.8255		10.3925		10.4659	
DECANES PLUS	46.2088		61.1916		60.0235	
SUB TOTAL	99.9990		99.9995		99.9995	
ALCOHOLS	0.0010		0.0005		0.0005	
TOTAL	100.0000		100.0000		100.0000	

API Gravity	=	**52.17**	60/60
Vapor Pressure	=	**1.01**	PSIA & 100 F
Average Molecular Weight of Decanes plus	=	**190.84**	
Average Specific Gravity of Decanes plus	=	**0.7820**	

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BY CARBON NUMBER

PROJECT NO. :	201110023	ANALYSIS NO. :	03
COMPANY NAME :	CARRIZO OIL & GAS	ANALYSIS DATE:	OCTOBER 6, 2011
ACCOUNT NO. :		SAMPLE DATE :	OCTOBER 4, 2011
PRODUCER :		CYLINDER NO. :	1L GLASS
LEASE NO. :		SAMPLED BY :	J. MOSER
NAME/DESCRIP :	WICKSTROM 7-11-5-60 @ 6:15 P.M. OIL TREATER		EMPACT
FIELD DATA		SAMPLE TEMP. :	136
SAMPLE PRES. :	26	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT		

COMPONENT / CARBON NUMBER	MOLE%	MASS %	VOLUME %
ALCOHOLS	0.0010	0.0005	0.0005
NITROGEN	0.0000	0.0000	0.0000
CARBON DIOXIDE	0.0000	0.0000	0.0000
C1	0.0000	0.0000	0.0000
C2	0.0000	0.0000	0.0000
C3	0.0000	0.0000	0.0000
C4	0.0000	0.0000	0.0000
C5	0.7138	0.3475	0.3526
C6	13.3251	7.8451	8.5143
C7	15.0047	10.2096	10.5498
C8	12.9211	10.0132	10.0934
C9	11.8255	10.3925	10.4659
C10	12.9074	12.2541	12.0195
C11	7.8465	8.1005	7.8057
C12	4.4821	5.0281	4.9997
C13	3.3305	4.1984	4.2186
C14	3.1024	4.2709	4.3058
C15	2.9453	4.3414	4.3266
C16	2.0777	3.2647	3.2324
C17	1.6146	2.6941	2.6593
C18	1.5952	2.8172	2.7727
C19	1.3034	2.4287	2.3751
C20	0.8873	1.7397	1.6920
C21	0.7742	1.5933	1.5417
C22	0.5481	1.1813	1.1391
C23	0.4443	1.0009	0.9624
C24	0.4143	0.9736	0.9337
C25	0.2967	0.7261	0.6962
C26	0.2916	0.7420	0.7067
C27	0.2259	0.5969	0.5682
C28	0.1667	0.4567	0.4338
C29	0.1829	0.5188	0.4917
C30+	0.7717	2.2642	2.1426
Total	100.0000	100.0000	100.0000

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EXTENDED NATURAL GAS LIQUID ANALYSIS (*DHA)

DHA COMPONENT LIST

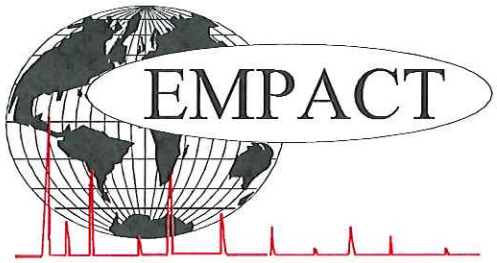
PROJECT NO. :	201110023	ANALYSIS NO. :	03
COMPANY NAME :	CARRIZO OIL & GAS	ANALYSIS DATE:	OCTOBER 6, 2011
ACCOUNT NO. :		SAMPLE DATE :	OCTOBER 4, 2011
PRODUCER :		CYLINDER NO. :	1L GLASS
LEASE NO. :		SAMPLED BY :	J. MOSER
NAME/DESCRIP :	WICKSTROM 7-11-5-60 @ 6:15 P.M. OIL TREATER		EMPACT
FIELD DATA		SAMPLE TEMP. :	136
SAMPLE PRES. :	26	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT		

COMPONENT	PIANO #	MOLE %	MASS %	VOL %
Nitrogen		0.0000	0.0000	0.0000
Carbon Dioxide		0.0000	0.0000	0.0000
Methane	P1	0.0000	0.0000	0.0000
Ethane	P2	0.0000	0.0000	0.0000
Propane	P3	0.0000	0.0000	0.0000
i-Butane	I4	0.0000	0.0000	0.0000
Methanol	X1	0.0000	0.0000	0.0000
i-Butylene	O4	0.0000	0.0000	0.0000
n-Butane	P4	0.0000	0.0000	0.0000
2,2-Dimethylpropane	I5	0.0051	0.0026	0.0033
Ethanol	X2	0.0000	0.0000	0.0000
Propanal	Z3	0.0000	0.0000	0.0000
i-Pentane	I5	0.0000	0.0000	0.0000
i-Propanol	X3	0.0000	0.0000	0.0000
n-Pentane	P5	0.0000	0.0000	0.0000
t-Butanol	X4	0.0010	0.0005	0.0005
2,2-Dimethylbutane	I6	0.0173	0.0103	0.0121
n-Propanol	X3	0.0000	0.0000	0.0000
Cyclopentane	N5	0.7071	0.3441	0.3483
2,3-Dimethylbutane	I6	0.2779	0.1662	0.1918
Butanal	Z4	0.0000	0.0000	0.0000
2-Methylpentane	I6	2.0069	1.2002	1.4042
3-Methylpentane	I6	1.2303	0.7357	0.8464
i-butanol	X4	0.0000	0.0000	0.0000
UnknownC5s	U5	0.0016	0.0008	0.0010
n-Hexane	P6	4.0113	2.3990	2.7812
2,2-Dimethylpentane	I7	0.0172	0.0120	0.0135
Methylcyclopentane	N6	2.8886	1.6869	1.7218
2,4-Dimethylpentane	I7	0.1350	0.0939	0.1068
2,2,3-Trimethylbutane	I7	0.0035	0.0024	0.0027
n-Butanol	X4	0.0000	0.0000	0.0000
Benzene	A6	1.0139	0.5495	0.4790
3,3-Dimethylpentane	I7	0.0146	0.0102	0.0113
Cyclohexane	N6	1.8789	1.0973	1.0778
2-Methylhexane	I7	0.9178	0.6381	0.7196
2,3-Dimethylpentane	I7	0.4580	0.3184	0.3489
1,1-Dimethylcyclopentane	N7	0.1821	0.1241	0.1258
3-Methylhexane	I7	1.2102	0.8414	0.9346
1c,3-Dimethylcyclopentane	N7	0.6086	0.4147	0.4258
1t,3-Dimethylcyclopentane	N7	0.5702	0.3885	0.3968
3-Ethylpentane	I7	0.0601	0.0418	0.0457
1t,2-Dimethylcyclopentane	N7	1.2642	0.8614	0.8767
2,2,4-Trimethylpentane	I8	0.0038	0.0030	0.0033
n-Heptane	P7	3.3757	2.3471	2.6244
1c,2-Dimethylcyclopentane	N7	0.0523	0.0356	0.0353
Methylcyclohexane	N7	3.1823	2.1683	2.1539
2,2-Dimethylhexane	I8	0.1943	0.1540	0.1693
Ethylcyclopentane	N7	0.5625	0.3833	0.3825
2,5-Dimethylhexane	I8	0.1063	0.0843	0.0929

2,4-Dimethylhexane	I8	0.1706	0.1352	0.1483
1c,2t,4-Trimethylcyclopentane	N8	0.3232	0.2517	0.2522
3,3-Dimethylhexane	I8	0.0196	0.0155	0.0167
2,3,4-Trimethylpentane	I8	0.0943	0.0747	0.0794
2,3,3-Trimethylpentane	I8	0.0039	0.0031	0.0033
Toluene	A7	2.3893	1.5276	1.3446
2,3-Dimethylhexane	I8	0.2016	0.1598	0.1717
2-Methyl-3-ethylpentane	I8	0.1186	0.0940	0.0999
1,1,2-Trimethylcyclopentane	N8	0.0006	0.0005	0.0005
2-Methylheptane	I8	1.1820	0.9369	1.0247
4-Methylheptane	I8	0.3500	0.2774	0.2961
3-Methyl-3-ethylpentane	I8	0.0168	0.0133	0.0140
3,4-Dimethylhexane	I8	0.0386	0.0306	0.0325
1c,2c,4-Trimethylcyclopentane	N8	0.0233	0.0181	0.0180
1c,3-Dimethylcyclohexane	N8	0.0210	0.0163	0.0163
3-Methylheptane	I8	0.2110	0.1673	0.1814
1c,2t,3-Trimethylcyclopentane	N8	1.1076	0.8624	0.8564
3-Ethylhexane	I8	0.1235	0.0979	0.1050
1t,4-Dimethylcyclohexane	N8	0.2714	0.2113	0.2120
1,1-Dimethylcyclohexane	N8	0.0997	0.0776	0.0760
3c-Ethylmethylcyclopentane	N8	0.0014	0.0011	0.0011
3t-Ethylmethylcyclopentane	N8	0.2110	0.1643	0.1639
2t-Ethylmethylcyclopentane	N8	0.1918	0.1493	0.1486
1,1-Methylethylcyclopentane	N8	0.5945	0.4629	0.4536
2,2,4-Trimethylhexane	I9	0.0330	0.0294	0.0314
1t,2-Dimethylcyclohexane	N8	0.5121	0.3987	0.3932
1t,3-Dimethylcyclohexane	N8	0.0085	0.0066	0.0064
UnknownC7s	U7	0.0011	0.0008	0.0009
n-Octane	P8	2.7966	2.2167	2.4130
1c,4-Dimethylcyclohexane	N8	0.0300	0.0234	0.0229
i-Propylcyclopentane	I8	0.0391	0.0304	0.0300
2,4,4-Trimethylhexane	I9	0.0211	0.0188	0.0199
2,2,3,4-Tetramethylpentane	I9	0.0642	0.0571	0.0607
2,3,4-Trimethylhexane	I9	0.0150	0.0134	0.0142
1c,2-Dimethylcyclohexane	N8	0.0915	0.0712	0.0684
2,3,5-Trimethylhexane	I9	0.1831	0.1630	0.1727
2,2-Dimethylheptane	I9	0.0128	0.0114	0.0123
1,1,4-Trimethylcyclohexane	N9	1.0895	0.9544	0.9462
2,2,3-Trimethylhexane	I9	0.3677	0.3273	0.3434
2,4-Dimethylheptane	I9	0.0089	0.0079	0.0084
4,4-Dimethylheptane	I9	0.0230	0.0205	0.0219
Ethylcyclohexane	N8	0.5610	0.4368	0.4244
n-Propylcyclopentane	N8	0.1863	0.1451	0.1430
1c,3c,5-Trimethylcyclohexane	N9	0.0304	0.0266	0.0264
2,5-Dimethylheptane	I9	0.0796	0.0708	0.0756
3,3-Dimethylheptane	I9	0.0937	0.0834	0.0890
3,5-Dimethylheptane	I9	0.0646	0.0575	0.0614
2,6-Dimethylheptane	I9	0.0006	0.0005	0.0005
1,1,3-Trimethylcyclohexane	N9	0.0624	0.0547	0.0542
Ethylbenzene	A8	0.9597	0.7070	0.6222
1c,2t,4t-Trimethylcyclohexane	N9	0.2381	0.2086	0.2029
2,3-Dimethylheptane	I9	0.0044	0.0039	0.0041
1,3-Dimethylbenzene (m-Xylene)	A8	0.9587	0.7063	0.6252
1,4-Dimethylbenzene (p-Xylene)	A8	0.2897	0.2134	0.1895
3,4-Dimethylheptane	I9	0.6762	0.6018	0.6296
3,4-Dimethylheptane (2)	I9	0.1425	0.1268	0.1327
4-Ethylheptane	I9	0.0657	0.0585	0.0626
4-Methyloctane	I9	0.3348	0.2980	0.3164
2-Methyloctane	I9	0.4059	0.3613	0.3874
1c,2t,4c-Trimethylcyclohexane	I9	0.0078	0.0069	0.0073
3-Ethylheptane	I9	0.0612	0.0545	0.0574
3-Methyloctane	I9	0.5141	0.4575	0.4857
3,3-Diethylpentane	I9	0.0533	0.0474	0.0481
1c,2t,3-Trimethylcyclohexane	N9	0.0716	0.0627	0.0610
1,1,2-Trimethylcyclohexane	N9	0.0240	0.0210	0.0204
1,2-Dimethylbenzene (o-Xylene)	A8	0.8046	0.5928	0.5156
i-Butylcyclopentane	N9	0.3410	0.2987	0.2927
UnknownC8s	U8	0.0029	0.0023	0.0025
n-Nonane	P9	2.3580	2.0986	2.2374
1,1-Methylethylcyclohexane	N9	0.0318	0.0283	0.0303
i-Propylbenzene	A9	0.2912	0.2429	0.2153
i-Propylcyclohexane	N9	0.1387	0.1215	0.1159
2,2-Dimethyloctane	I10	0.0882	0.0871	0.0901
2,4-Dimethyloctane	I10	0.0779	0.0769	0.0796
2,6-Dimethyloctane	I10	0.0551	0.0544	0.0562
n-Butylcyclopentane	N9	0.4470	0.4351	0.4168
3,3-Dimethyloctane	I10	0.1061	0.1048	0.1085
n-Propylbenzene	A9	0.5062	0.4222	0.3742
3,6-Dimethyloctane	I10	0.3121	0.3081	0.3188
3-Methyl-5-ethylheptane	I10	0.6417	0.5711	0.6022
1,3-Methylethylbenzene	A9	0.5144	0.4290	0.3770

1,4-Methylethylbenzene	A9	0.2411	0.2011	0.1767
1,3,5-Trimethylbenzene	A9	0.1677	0.1399	0.1238
2,3-Dimethyloctane	I10	0.0900	0.0889	0.0920
5-Methylnonane	I10	0.3616	0.3570	0.3729
1,2-Methylethylbenzene	A9	0.3704	0.3089	0.2701
2-Methylnonane	I10	0.0407	0.0402	0.0423
3-Ethyloctane	I10	0.1125	0.1111	0.1150
3-Methylnonane	I10	0.2396	0.2366	0.2469
1,2,4-Trimethylbenzene	A9	0.0741	0.0618	0.0540
t-Butylbenzene	A10	0.5405	0.5034	0.4449
i-Butylcyclohexane	N10	0.1460	0.1421	0.1340
1t-Methyl-2-n-propylcyclohexane	I10	0.2953	0.2628	0.2771
i-Butylbenzene	A10	0.1175	0.1094	0.0982
sec-Butylbenzene	A10	0.2148	0.2001	0.1778
UnknownC9s	U9	1.2315	1.0960	1.1685
n-Decane	P10	1.6859	1.6645	1.7447
1,2,3-Trimethylbenzene	A9	0.3632	0.3029	0.2594
1,3-Methyl-i-propylbenzene	A10	0.1965	0.1639	0.1433
1,4-Methyl-i-propylbenzene	A10	0.1363	0.1137	0.0994
Sec-Butylcyclohexane	N10	0.4781	0.4654	0.4383
1,2-Methyl-i-propylbenzene	A10	0.2475	0.2305	0.2013
3-Ethylnonane	I10	0.0683	0.0674	0.0710
1,3-Diethylbenzene	A10	0.2231	0.2078	0.1842
1,3-Methyl-n-propylbenzene	A10	0.0728	0.0678	0.0603
1,4-Diethylbenzene	A10	0.3167	0.2950	0.2621
1,4-Methyl-n-propylbenzene	A10	0.0970	0.0903	0.0805
n-Butylbenzene	A10	0.1973	0.1838	0.1633
1,3-Dimethyl-5-ethylbenzene	A10	0.1235	0.1150	0.1018
1,2-Diethylbenzene	A10	0.2417	0.2251	0.1960
1,2-Methyl-n-propylbenzene	A10	0.1707	0.1590	0.1394
1,4-Dimethyl-2-ethylbenzene	A10	0.3976	0.3703	0.3232
1,3-Dimethyl-4-ethylbenzene	A10	0.1504	0.1401	0.1224
1,2-Dimethyl-4-ethylbenzene	A10	0.2358	0.2196	0.1923
1,3-Dimethyl-2-ethylbenzene	A10	0.1318	0.1228	0.1056
1t,2c,4-Trimethylcyclopentane	A10	0.3861	0.3006	0.3077
1,2-Dimethyl-3-ethylbenzene	A10	0.2256	0.2101	0.1803
1,2-Ethyl-i-propylbenzene	A10	0.1586	0.1477	0.1290
1,4-Methyl-t-butylbenzene	A11	0.1701	0.1584	0.1384
UnknownC10s	U10	2.9592	2.9216	3.0624
n-Undecane	P11	1.5499	1.6811	1.7377
1,4-Ethyl-i-propylbenzene	A11	0.1780	0.1658	0.1448
1,2,4,5-Tetramethylbenzene	A11	0.1605	0.1495	0.1292
1,2-Methyl-n-butylbenzene	A11	0.3306	0.3079	0.2689
1,2,3,5-Tetramethylbenzene	A11	0.1900	0.1770	0.1523
1,2-Methyl-t-butylbenzene	A11	0.1394	0.1298	0.1134
5-Methylindan	A11	0.2247	0.2656	0.2716
4-Methylindan	A11	0.1222	0.1444	0.1476
1,2-Ethyl-n-propylbenzene	A11	0.1079	0.1005	0.0878
2-Methylindan	A11	0.0821	0.0970	0.0992
1,3-Methyl-n-butylbenzene	A11	0.1213	0.1130	0.0987
1,3-Di-i-propylbenzene	A11	0.1834	0.1708	0.1492
sec-Pentylbenzene	A11	0.1079	0.1005	0.0878
n-Pentylbenzene	A11	0.1227	0.1262	0.1125
1t-M-2-(4MP)cyclopentane	P12	0.1560	0.1844	0.1885
1,2-Di-n-propylbenzene	A11	0.2088	0.1945	0.1699
1,4-Di-i-propylbenzene	A11	0.2296	0.2138	0.1868
Tetrahydronaphthalene	A10	0.0463	0.0431	0.0376
t-Decahydronaphthalene	A10	0.2757	0.2568	0.2243
Naphthalene	A10	0.2453	0.2182	0.1906
1-t-Butyl-3,5-dimethylbenzene	A12	0.1081	0.1007	0.0880
1,4-Ethyl-t-butylbenzene	A11	0.1157	0.1078	0.0942
UnknownC11s	U11	2.4683	2.6772	2.7673
n-Dodecane	P12	1.2053	1.4247	1.4565
1,3-Di-n-propylbenzene	A12	0.0923	0.0860	0.0751
1,3,5-Triethylbenzene	A12	0.0794	0.0662	0.0586
1,2,4-Triethylbenzene	A12	0.3838	0.3201	0.2797
1,4-Methyl-n-pentylbenzene	A12	0.1867	0.1739	0.1519
n-Hexylbenzene	A12	0.2075	0.2336	0.2085
1,2,3,4,5-Pentamethylbenzene	A13	0.1791	0.1668	0.1457
2-Methylnaphthalene	A11	0.6841	0.6750	0.5896
1-Methylnaphthalene	A11	0.3493	0.3447	0.2588
UnknownC12s	U12	2.0630	2.4385	2.4929
n-Tridecane	P13	1.1123	1.4230	1.4376
UnknownC13s	U13	2.0391	2.6086	2.6353
n-Tetradecane	P14	0.9405	1.2947	1.3053
UnknownC14s	U14	2.1619	2.9762	3.0005

n-Pentadecane	P15	0.9111	1.3430	1.3384
UnknownC15s	U15	2.0342	2.9984	2.9882
n-Hexadecane	P16	0.6995	1.0991	1.0882
UnknownC16s	U16	1.3782	2.1656	2.1442
n-Heptadecane	P17	0.5956	0.9938	0.9810
UnknownC17s	U17	1.0190	1.7003	1.6783
n-Octadecane	P18	0.4779	0.8440	0.8307
UnknownC18s	U18	1.1173	1.9732	1.9420
n-Nonadecane	P19	0.4480	0.8348	0.8164
UnknownC19s	U19	0.8554	1.5939	1.5587
n-Eicosane	P20	0.3406	0.6678	0.6495
UnknownC20s	U20	0.5467	1.0719	1.0425
n-Heneicosane	P21	0.2897	0.5962	0.5769
UnknownC21s	U21	0.4845	0.9971	0.9648
n-Docosane	P22	0.2481	0.5347	0.5156
UnknownC22s	U22	0.3000	0.6466	0.6235
n-Tricosane	P23	0.2180	0.4911	0.4722
UnknownC23s	U23	0.2263	0.5098	0.4902
n-Tetracosane	P24	0.1965	0.4618	0.4429
UnknownC24s	U24	0.2178	0.5118	0.4908
n-Pentacosane	P25	0.1370	0.3353	0.3215
UnknownC25s	U25	0.1597	0.3908	0.3747
n-Hexacosane	P26	0.1270	0.3232	0.3078
UnknownC26s	U26	0.1646	0.4188	0.3989
n-Heptacosane	P27	0.0842	0.2225	0.2118
UnknownC27s	U27	0.1417	0.3744	0.3564
n-Octacosane	P28	0.0726	0.1989	0.1889
UnknownC28s	U28	0.0941	0.2578	0.2449
n-Nonacosane	P29	0.0646	0.1832	0.1736
UnknownC29s	U29	0.1183	0.3356	0.3181
n-Triacontane Plus	P30	0.7717	2.2642	2.1426
TOTAL		100.0000	100.0000	100.0000



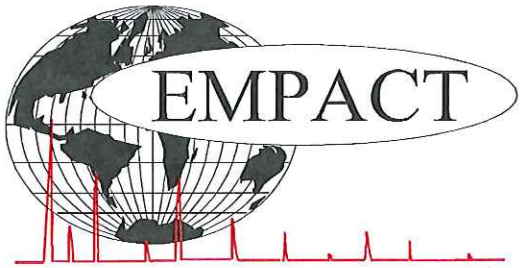
PROJECT NO: 201110023
COMPANY NAME: CARRIZO OIL & GAS

COMMENTS: 1L GLASS
SPOT
BLACK

ANALYSIS NO.: 03
ANALYSIS DATE: OCTOBER 6, 2011
SAMPLE DATE: OCTOBER 4, 2011
SAMPLED BY: J. MOSER
EMPACT

TEST PROCEDURE / METHOD: API GRAVITY

DESCRIPTION:	API GRAVITY @ 60/60
WICKSTROM 7-11-5-60 @ 6:15 P.M. OIL TREATER TRACES OF H2O 136 DEGREES	33.6



PROJECT NO:	201110023	ANALYSIS NO.:	03
COMPANY NAME:	CARRIZO OIL & GAS	ANALYSIS DATE:	OCTOBER 6, 2011
		SAMPLE DATE:	OCTOBER 4, 2011
COMMENTS:	1L GLASS	SAMPLED BY:	J. MOSER
	SPOT		EMPACT
	BLACK		

TEST PROCEDURE / METHOD: REID VAPOR PRESSURE (ASTM D-323)

DESCRIPTION:	REID VAPOR PRESSURE
WICKSTROM 7-11-5-60 @ 6:15 P.M. OIL TREATER TRACES OF H2O 136 DEGREES	3.4

EMPACT ANALYTICAL SYSTEMS INC.
365 S. MAIN ST.
BRIGHTON, CO
80601

303-637-0150

EXTENDED NATURAL GAS ANALYSIS (*DHA)

MAIN PAGE

PROJECT NO. :	201110023	ANALYSIS NO. :	04
COMPANY NAME :	CARRIZO OIL & GAS	ANALYSIS DATE:	OCTOBER 6, 2011
ACCOUNT NO. :		SAMPLE DATE :	OCTOBER 4, 2011
PRODUCER :		CYLINDER NO. :	623
LEASE NO. :		SAMPLED BY :	JOHN MOSER
NAME/DESCRIP :	N. ORCHARD @ 6:25 P.M. WICKSTROM 7-11-5-60; SALES GAS SCRUBBER		
FIELD DATA		SAMPLE TEMP. :	136
SAMPLE PRES. :	80	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; NO PROBE POSSIBLE MOISTURE IN SAMPLE		

COMPONENT	MOLE %	MASS %	GPM @ 14.650	GPM @ 14.730
ALCOHOLS	0.0049	0.0087		
HELIUM	0.02	0.00	---	---
HYDROGEN	0.02	0.00	---	---
OXYGEN/ARGON	0.01	0.01	---	---
NITROGEN	0.84	0.88	---	---
CARBON DIOXIDE	2.38	3.92	---	---
METHANE	63.86230	38.38960	---	---
ETHANE	12.1510	13.6908	3.2480	3.2658
PROPANE	10.7583	17.7762	2.9624	2.9786
I-BUTANE	1.2738	2.7742	0.4169	0.4192
N-BUTANE	4.4370	9.6634	1.3980	1.4057
I-PENTANE	1.1111	2.9943	0.3969	0.3990
N-PENTANE	1.3149	3.5549	0.4760	0.4786
HEXANES PLUS	1.8167	6.3379	0.7441	0.7482
TOTALS	100.00000	100.00000	9.6423	9.6951

BTEX COMPONENTS	MOLE%	WT%
BENZENE	0.0735	0.2151
TOLUENE	0.0491	0.1695
ETHYLBENZENE	0.0066	0.0263
XYLENES	0.0154	0.0612
TOTAL BTEX	0.1446	0.4721

	BTU @	14.650	14.730
LOW	NET DRY REAL :	1374.9 /scf	1382.4 /scf
	NET WET REAL :	1350.9 /scf	1358.4 /scf
HIGH	GROSS DRY REAL :	1507.2 /scf	1515.4 /scf
	GROSS WET REAL :	1480.9 /scf	1489.1 /scf
	NET DRY REAL :	19582.0 /lb	19689.0 /lb
	GROSS DRY REAL :	21467.7 /lb	21584.9 /lb
	RELATIVE DENSITY (AIR=1):		0.9202
	COMPRESSIBILITY FACTOR :		0.99471

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

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

EMPACT ANALYTICAL SYSTEMS INC.
365 S. MAIN ST.
BRIGHTON, CO
80601

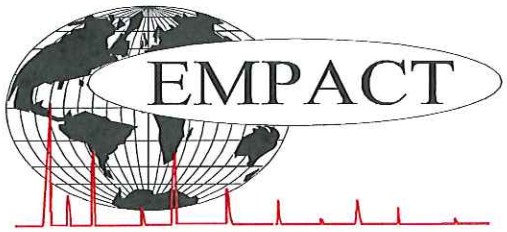
303-637-0150

EXTENDED NATURAL GAS ANALYSIS (*DHA)

GLYCALC INFORMATION

PROJECT NO. :	201110023	ANALYSIS NO. :	04
COMPANY NAME :	CARRIZO OIL & GAS	ANALYSIS DATE:	OCTOBER 6, 2011
ACCOUNT NO. :		SAMPLE DATE :	OCTOBER 4, 2011
PRODUCER :		CYLINDER NO. :	623
LEASE NO. :		SAMPLED BY :	JOHN MOSER
NAME/DESCRIP :	N. ORCHARD @ 6:25 P.M. WICKSTROM 7-11-5-60; SALES GAS SCRUBBER		
FIELD DATA		SAMPLE TEMP. :	136
SAMPLE PRES. :	80	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; NO PROBE POSSIBLE MOISTURE IN SAMPLE		

Componet	Mole %	Wt %
Helium	0.02	0.00
Hydrogen	0.02	0.00
Carbon Dioxide	2.38	3.92
Nitrogen	0.84	0.88
Methane	63.86230	38.38960
Ethane	12.1510	13.6908
Propane	10.7583	17.7762
Isobutane	1.2738	2.7742
n-Butane	4.4370	9.6634
Isopentane	0.9845	2.6616
n-Pentane	1.3149	3.5549
Cyclopentane	0.1266	0.3327
n-Hexane	0.3469	1.1202
Cyclohexane	0.0969	0.3056
Other Hexanes	0.6025	1.9299
Heptanes	0.3346	1.2478
Methycyclohexane	0.0788	0.2899
2,2,4 Trimethylpentane	0.0001	0.0004
Benzene	0.0735	0.2151
Toluene	0.0491	0.1695
Ethylbenzene	0.0066	0.0263
Xylenes	0.0154	0.0612
C8+ Heavies	0.2123	0.9720
Subtotal	99.98510	99.98130
Oxygen/Argon	0.01	0.01
Alcohols	0.0049	0.0087
Total	100.00000	100.00000



EXTENDED NATURAL GAS ANALYSIS (*DHA)

DHA COMPONENT LIST

PROJECT NO. :	201110023	ANALYSIS NO. :	04
COMPANY NAME :	CARRIZO OIL & GAS	ANALYSIS DATE:	OCTOBER 6, 2011
ACCOUNT NO. :		SAMPLE DATE :	OCTOBER 4, 2011
PRODUCER :		CYLINDER NO. :	623
LEASE NO. :		SAMPLED BY :	JOHN MOSER
NAME/DESCRIP :	N. ORCHARD @ 6:25 P.M. WICKSTROM 7-11-5-60; SALES GAS SCRUBBER		
FIELD DATA		SAMPLE TEMP. :	136
SAMPLE PRES. :	80	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; NO PROBE POSSIBLE MOISTURE IN SAMPLE		

COMPONENT	PIANO #	MOLE %	MASS %	GPM @ 14.650	GPM @ 14.730
Helium	---	0.02	0.00	---	---
Hydrogen	---	0.02	0.00	---	---
Oxygen/Argon	---	0.01	0.01	---	---
Nitrogen	---	0.84	0.88	---	---
Carbon Dioxide	---	2.38	3.92	---	---
Methane	P1	63.86230	38.38960	---	---
Ethane	P2	12.1510	13.6908	3.248	3.266
Propane	P3	10.7583	17.7762	2.962	2.979
i-Butane	I4	1.2738	2.7742	0.417	0.419
n-Butane	P4	4.4370	9.6634	1.398	1.406
2,2-Dimethylpropane	I5	0.0034	0.0092	0.001	0.001
Ethanol	X2	0.0046	0.0079	0.001	0.001
i-Pentane	I5	0.9811	2.6524	0.359	0.361
i-Propanol	X3	0.0001	0.0002	0.000	0.000
n-Pentane	P5	1.3148	3.5546	0.476	0.479
t-Butanol	X4	0.0002	0.0006	0.000	0.000
2,2-Dimethylbutane	I6	0.0033	0.0106	0.001	0.001
Cyclopentane	N5	0.1266	0.3327	0.037	0.037
2,3-Dimethylbutane	I6	0.0228	0.0736	0.009	0.009
2-Methylpentane	I6	0.2427	0.7837	0.100	0.101
3-Methylpentane	I6	0.1271	0.4104	0.052	0.052
UnknownC5s	U5	0.0001	0.0003	0.000	0.000
n-Hexane	P6	0.3469	1.1202	0.142	0.143
2,2-Dimethylpentane	I7	0.0012	0.0045	0.001	0.001
Methylcyclopentane	N6	0.2066	0.6516	0.073	0.074
2,4-Dimethylpentane	I7	0.0089	0.0334	0.004	0.004
2,2,3-Trimethylbutane	I7	0.0002	0.0008	0.000	0.000
Benzene	A6	0.0735	0.2151	0.021	0.021
3,3-Dimethylpentane	I7	0.0008	0.0030	0.000	0.000
Cyclohexane	N6	0.0969	0.3056	0.033	0.033
2-Methylhexane	I7	0.0406	0.1524	0.019	0.019
2,3-Dimethylpentane	I7	0.0185	0.0695	0.008	0.008
1,1-Dimethylcyclopentane	N7	0.0084	0.0309	0.003	0.003
3-Methylhexane	I7	0.0465	0.1746	0.021	0.021
1c,3-Dimethylcyclopentane	N7	0.0238	0.0876	0.011	0.011
1t,3-Dimethylcyclopentane	N7	0.0215	0.0791	0.010	0.010

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3-Ethylpentane	I7	0.0035	0.0132	0.002	0.002
1t,2-Dimethylcyclopentane	N7	0.0448	0.1648	0.021	0.021
2,2,4-Trimethylpentane	I8	0.0001	0.0004	0.000	0.000
n-Heptane	P7	0.1000	0.3755	0.046	0.046
1c,2-Dimethylcyclopentane	N7	0.0031	0.0114	0.001	0.001
Methylcyclohexane	N7	0.0788	0.2899	0.032	0.032
2,2-Dimethylhexane	I8	0.0050	0.0214	0.002	0.002
Ethylcyclopentane	N7	0.0128	0.0471	0.005	0.005
2,5-Dimethylhexane	I8	0.0022	0.0094	0.001	0.001
2,2,3-Trimethylpentane	I8	0.0002	0.0009	0.000	0.000
2,4-Dimethylhexane	I8	0.0036	0.0154	0.002	0.002
1c,2t,4-Trimethylcyclopentane	N8	0.0065	0.0273	0.003	0.003
3,3-Dimethylhexane	I8	0.0004	0.0017	0.000	0.000
1t,2c,4-Trimethylcyclopentane	N8	0.0073	0.0307	0.003	0.003
2,3,4-Trimethylpentane	I8	0.0016	0.0069	0.001	0.001
2,3,3-Trimethylpentane	I8	0.0001	0.0004	0.000	0.000
Toluene	A7	0.0491	0.1695	0.016	0.016
2,3-Dimethylhexane	I8	0.0031	0.0133	0.002	0.002
2-Methyl-3-ethylpentane	I8	0.0019	0.0081	0.001	0.001
1,1,2-Trimethylcyclopentane	N8	0.0001	0.0004	0.000	0.000
2-Methylheptane	I8	0.0176	0.0753	0.009	0.009
4-Methylheptane	I8	0.0052	0.0223	0.003	0.003
3-Methyl-3-ethylpentane	I8	0.0004	0.0017	0.000	0.000
3,4-Dimethylhexane	I8	0.0003	0.0013	0.000	0.000
1c,2c,4-Trimethylcyclopentane	N8	0.0004	0.0017	0.000	0.000
1c,3-Dimethylcyclohexane	N8	0.0003	0.0013	0.000	0.000
3-Methylheptane	I8	0.0083	0.0355	0.004	0.004
1c,2t,3-Trimethylcyclopentane	N8	0.0103	0.0433	0.005	0.005
3-Ethylhexane	I8	0.0010	0.0043	0.001	0.001
1t,4-Dimethylcyclohexane	N8	0.0036	0.0151	0.002	0.002
1,1-Dimethylcyclohexane	N8	0.0013	0.0055	0.001	0.001
3c-Ethylmethylcyclopentane	N8	0.0001	0.0004	0.000	0.000
3t-Ethylmethylcyclopentane	N8	0.0026	0.0109	0.001	0.001
2t-Ethylmethylcyclopentane	N8	0.0023	0.0097	0.001	0.001
1,1-Methylethylcyclopentane	N8	0.0072	0.0303	0.004	0.004
2,2,4-Trimethylhexane	I9	0.0004	0.0019	0.000	0.000
1t,2-Dimethylcyclohexane	N8	0.0056	0.0235	0.003	0.003
n-Octane	P8	0.0264	0.1130	0.013	0.013
1c,4-Dimethylcyclohexane	N8	0.0021	0.0088	0.001	0.001
i-Propylcyclopentane	I8	0.0006	0.0025	0.000	0.000
2,4,4-Trimethylhexane	I9	0.0002	0.0010	0.000	0.000
2,3,5-Trimethylhexane	I9	0.0004	0.0019	0.000	0.000
2,2,3,4-Tetramethylpentane	I9	0.0002	0.0010	0.000	0.000
2,3,4-Trimethylhexane	I9	0.0005	0.0024	0.000	0.000
1c,2-Dimethylcyclohexane	N8	0.0019	0.0080	0.001	0.001
2,2-Dimethylheptane	I9	0.0001	0.0005	0.000	0.000
1,1,4-Trimethylcyclohexane	N9	0.0077	0.0364	0.004	0.004
2,2,3-Trimethylhexane	I9	0.0030	0.0144	0.002	0.002
2,4-Dimethylheptane	I9	0.0005	0.0024	0.000	0.000
4,4-Dimethylheptane	I9	0.0002	0.0010	0.000	0.000
Ethylcyclohexane	N8	0.0040	0.0168	0.002	0.002
n-Propylcyclopentane	N8	0.0016	0.0067	0.001	0.001
1c,3c,5-Trimethylcyclohexane	N9	0.0003	0.0014	0.000	0.000
2,5-Dimethylheptane	I9	0.0006	0.0029	0.000	0.000
3,3-Dimethylheptane	I9	0.0006	0.0029	0.000	0.000
3,5-Dimethylheptane	I9	0.0004	0.0019	0.000	0.000
2,6-Dimethylheptane	I9	0.0005	0.0024	0.000	0.000
1,1,3-Trimethylcyclohexane	N9	0.0015	0.0071	0.001	0.001
Ethylbenzene	I8	0.0066	0.0263	0.003	0.003
1c,2t,4t-Trimethylcyclohexane	N9	0.0003	0.0014	0.000	0.000

2,3-Dimethylheptane	I9	0.0001	0.0005	0.000	0.000
1,3-Dimethylbenzene (m-Xylene)	A8	0.0097	0.0386	0.004	0.004
1,4-Dimethylbenzene (p-Xylene)	A8	0.0020	0.0079	0.001	0.001
3,4-Dimethylheptane	I9	0.0001	0.0005	0.000	0.000
3,4-Dimethylheptane (2)	I9	0.0008	0.0039	0.000	0.000
4-Ethylheptane	I9	0.0001	0.0005	0.000	0.000
4-Methyloctane	I9	0.0017	0.0082	0.001	0.001
2-Methyloctane	I9	0.0022	0.0106	0.001	0.001
1c,2t,3-Trimethylcyclohexane	N9	0.0005	0.0024	0.000	0.000
3-Ethylheptane	I9	0.0004	0.0019	0.000	0.000
3-Methyloctane	I9	0.0023	0.0111	0.001	0.001
1,1,2-Trimethylcyclohexane	N9	0.0003	0.0014	0.000	0.000
1,2-Dimethylbenzene (o-Xylene)	A8	0.0037	0.0147	0.001	0.001
i-Butylcyclopentane	N9	0.0013	0.0061	0.001	0.001
n-Nonane	P9	0.0069	0.0332	0.004	0.004
1,1-Methylethylcyclohexane	N9	0.0010	0.0047	0.001	0.001
i-Propylbenzene	A9	0.0019	0.0085	0.001	0.001
i-Propylcyclohexane	N9	0.0004	0.0019	0.000	0.000
2,2-Dimethyloctane	I10	0.0003	0.0016	0.000	0.000
2,4-Dimethyloctane	I10	0.0003	0.0016	0.000	0.000
2,5-Dimethyloctane	I10	0.0002	0.0011	0.000	0.000
n-Butylcyclopentane	N9	0.0014	0.0066	0.001	0.001
3,3-Dimethyloctane	I10	0.0003	0.0016	0.000	0.000
n-Propylbenzene	A9	0.0013	0.0058	0.001	0.001
3,6-Dimethyloctane	I10	0.0009	0.0048	0.001	0.001
3-Methyl-5-ethylheptane	I10	0.0014	0.0075	0.001	0.001
1,3-Methylethylbenzene	A9	0.0011	0.0050	0.001	0.001
1,4-Methylethylbenzene	A9	0.0008	0.0036	0.000	0.000
1,3,5-Trimethylbenzene	A9	0.0004	0.0018	0.000	0.000
2,3-Dimethyloctane	I10	0.0002	0.0011	0.000	0.000
5-Methylnonane	I10	0.0006	0.0032	0.000	0.000
1,2-Methylethylbenzene	A9	0.0015	0.0067	0.001	0.001
2-Methylnonane	I10	0.0001	0.0005	0.000	0.000
3-Ethyloctane	I10	0.0002	0.0011	0.000	0.000
3-Methylnonane	I10	0.0005	0.0027	0.000	0.000
1,2,4-Trimethylbenzene	A9	0.0001	0.0005	0.000	0.000
t-Butylbenzene	A10	0.0010	0.0050	0.000	0.000
i-Butylcyclohexane	N10	0.0004	0.0021	0.000	0.000
1t-Methyl-2-n-propylcyclohexane	I10	0.0001	0.0005	0.000	0.000
i-Butylbenzene	A10	0.0001	0.0005	0.000	0.000
sec-Butylbenzene	A10	0.0001	0.0005	0.000	0.000
UnknownC9s	U9	0.0051	0.0245	0.003	0.003
n-Decane	P10	0.0020	0.0107	0.001	0.001
1,2,3-Trimethylbenzene	A9	0.0005	0.0023	0.000	0.000
1,3-Methyl-i-propylbenzene	A10	0.0003	0.0015	0.000	0.000
1,4-Methyl-i-propylbenzene	A10	0.0001	0.0005	0.000	0.000
Sec-Butylcyclohexane	A10	0.0004	0.0021	0.000	0.000
1,2-Methyl-i-propylbenzene	A10	0.0003	0.0015	0.000	0.000
3-Ethylnonane	I10	0.0001	0.0006	0.000	0.000
1,3-Diethylbenzene	A10	0.0002	0.0010	0.000	0.000
1,3-Methyl-n-propylbenzene	A10	0.0001	0.0005	0.000	0.000
1,4-Diethylbenzene	A10	0.0004	0.0020	0.000	0.000
n-Butylbenzene	A10	0.0001	0.0005	0.000	0.000
1,3-Dimethyl-5-ethylbenzene	A10	0.0001	0.0005	0.000	0.000
1,2-Diethylbenzene	A10	0.0001	0.0005	0.000	0.000
t-Decahydronaphthalene	A9	0.0002	0.0012	0.000	0.000
1,2-Methyl-n-propylbenzene	A10	0.0001	0.0005	0.000	0.000
1,4-Dimethyl-2-ethylbenzene	A10	0.0002	0.0010	0.000	0.000
1,2-Dimethyl-4-ethylbenzene	A10	0.0003	0.0015	0.000	0.000
1,3-Dimethyl-2-ethylbenzene	A10	0.0002	0.0010	0.000	0.000

1,2-Dimethyl-3-ethylbenzene	A10	0.0001	0.0005	0.000	0.000
1,2-Ethyl-i-propylbenzene	A10	0.0002	0.0011	0.000	0.000
1,4-Methyl-t-butylbenzene	A11	0.0001	0.0006	0.000	0.000
UnknownC10s	U10	0.0039	0.0208	0.002	0.002
n-Undecane	P11	0.0009	0.0053	0.001	0.001
1,2,4,5-Tetramethylbenzene	A11	0.0001	0.0005	0.000	0.000
1,2-Methyl-n-butylbenzene	A11	0.0001	0.0006	0.000	0.000
1,2,3,5-Tetramethylbenzene	A11	0.0001	0.0005	0.000	0.000
1,2-Methyl-t-butylbenzene	A11	0.0001	0.0006	0.000	0.000
5-Methylindan	A11	0.0001	0.0005	0.000	0.000
4-Methylindan	A11	0.0001	0.0005	0.000	0.000
1,2-Ethyl-n-propylbenzene	A11	0.0001	0.0006	0.000	0.000
2-Methylindan	A11	0.0001	0.0005	0.000	0.000
1,3-Methyl-n-butylbenzene	A11	0.0001	0.0006	0.000	0.000
1,3-Di-i-propylbenzene	A11	0.0001	0.0006	0.000	0.000
1t-M-2-(4MP)cyclopentane	P12	0.0001	0.0006	0.000	0.000
1,2-Di-n-propylbenzene	A11	0.0001	0.0006	0.000	0.000
1,4-Di-i-propylbenzene	A11	0.0002	0.0012	0.000	0.000
Naphthalene	A10	0.0001	0.0005	0.000	0.000
1,3-Di-n-propylbenzene	A12	0.0001	0.0006	0.000	0.000
UnknownC11s	U11	0.0013	0.0076	0.001	0.001
n-Dodecane	P12	0.0006	0.0038	0.000	0.000
1,2,4-Triethylbenzene	A12	0.0002	0.0012	0.000	0.000
1,4-Methyl-n-pentylbenzene	A12	0.0001	0.0006	0.000	0.000
n-Hexylbenzene	A12	0.0001	0.0006	0.000	0.000
1,2,3,4,5-Pentamethylbenzene	A13	0.0001	0.0006	0.000	0.000
2-Methylnaphthalene	A11	0.0001	0.0005	0.000	0.000
1-Methylnaphthalene	A11	0.0002	0.0011	0.000	0.000
UnknownC12s	U12	0.0009	0.0053	0.001	0.001
n-Tridecane	P13	0.0005	0.0035	0.000	0.000
UnknownC13s	U13	0.0005	0.0035	0.000	0.000
n-Tetradecane	P14	0.0005	0.0037	0.000	0.000
UnknownC14s	U14	0.0007	0.0052	0.001	0.001
n-Pentadecane	P15	0.0006	0.0048	0.001	0.001
UnknownC15s	U15	0.0008	0.0064	0.001	0.001
n-Hexadecane	P16	0.0004	0.0034	0.000	0.000
UnknownC16s	U16	0.0006	0.0051	0.001	0.001
n-Heptadecane	P17	0.0003	0.0027	0.000	0.000
UnknownC17s	U17	0.0001	0.0009	0.000	0.000
n-Octadecane	P18	0.0001	0.0009	0.000	0.000
UnknownC18s	U18	0.0002	0.0019	0.000	0.000
TOTAL		100.00000	100.00000	9.6433	9.6961

BTEX COMPONENTS	MOLE%	WT%
BENZENE	0.0735	0.2151
TOLUENE	0.0491	0.1695
ETHYLBENZENE	0.0066	0.0263
XYLENES	0.0154	0.0612
TOTAL BTEX	0.1446	0.4721

	BTU @	14.650	14.730
LOW	NET DRY REAL :	1374.9 /scf	1382.4 /scf
	NET WET REAL :	1350.9 /scf	1358.4 /scf
HIGH	GROSS DRY REAL :	1507.2 /scf	1515.4 /scf
	GROSS WET REAL :	1480.9 /scf	1489.1 /scf
	NET DRY REAL :	19582.0 /lb	19689.0 /lb
	GROSS DRY REAL :	21467.7 /lb	21584.9 /lb

RELATIVE DENSITY (AIR=1): 0.9202

COMPRESSIBILITY FACTOR : 0.99471

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

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

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