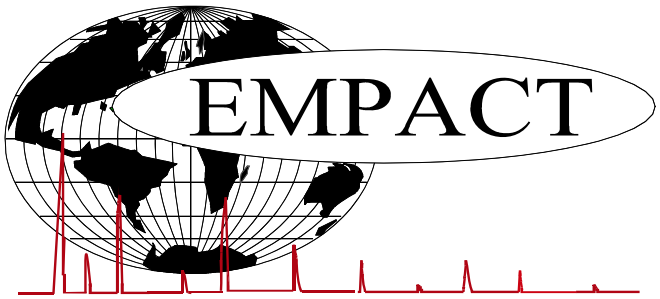
CRUDE OIL ASSAY

LEASE #:		NAME/DESCRIP :	**TIMBRO 2-34-10-59** **TANK BATTERY TK#134101**
PROJECT NO. :	**201506097**	ANALYSIS NO. :	**01**
COMPANY NAME :	**CARRIZO OIL & GAS, INC**	ANALYSIS DATE:	JUNE 29, 2015
OFFICE / BRANCH:	COLORADO	SAMPLE DATE :	JUNE 12, 2015 14:20
CUSTOMER REF:		TO:	
PRODUCER :		EFFECTIVE DATE:	
FIELD DATA			
SAMPLE CYCLE:		SAMPLE TYPE:	SPOT
SAMPLE PRES. :		CYLINDER NO. :	1L GLASS
LAB PRES:		SAMPLED BY :	GALE MCENDREE
SAMPLE TEMP. :	87	SAMPLING COMPANY:	EMPACT
AMBIENT TEMP.:			
FIELD COMMENTS:			
LAB COMMENTS:			

SPECIFICATION		TEST METHOD	DETECTION LIMIT	UNITS	RESULTS
API GRAVITY				API 60/60	35.0
RVP @100 DEG F		D323		PSIG	6.8
TOTAL SULFUR		D2622		Wt %	0.3770
VISUAL APPEARANCE					N/A
BS&W		D96			
Crude Oil				Vol %	N/A
Water				Vol %	N/A
Emulsion				Vol %	N/A
Sediment				Vol %	N/A
VISCOSITY		D445			
Average Centipoise	45° F			° F cP	N/A
Average Centipoise	65° F			° F cP	N/A
Average Centipoise	85° F			° F cP	N/A
Kinetic Viscosity	45° F			cSt (mm2/s)	N/A
Kinetic Viscosity	65° F			cSt (mm2/s)	N/A
Kinetic Viscosity	85° F			cSt (mm2/s)	N/A
FLASH POINT		D93	<40	° F	N/A
POUR POINT		D3227	<-110	° F	N/A
CLOUD POINT		D2500		° F	N/A
DISTILLATION:		D86			
Initial Point				° F	N/A
50%				° F	N/A
90%				° F	N/A
Final Boiling Point 100%				° F	N/A
PARAFFINS		Distillation		Wt %	N/A
ASPHALTENES		D6560 M	<0.02	Wt %	N/A
TOTAL CHLORIDE		D86/XFR	<0.001	Wt %	N/A
ORGANIC CHLORIDE		D4929	<0.0001	Vol %	N/A

BDL: BELOW DETECTION LIMIT

N/A: NO TEST PREFORMED FOR THIS PARAMETER



EXTENDED NATURAL GAS LIQUID ANALYSIS (*DHA)

MAIN PAGE

PROJECT NO. :	201506097	ANALYSIS NO. :	02
COMPANY NAME :	CARRIZO OIL & GAS, INC	ANALYSIS DATE:	JUNE 18, 2015 07:05
ACCOUNT NO. :		SAMPLE DATE :	JUNE 12, 2015 13:58
PRODUCER :		CYLINDER NO. :	4038
LEASE NO. :		SAMPLED BY :	GALE MCENDREE
NAME/DESCRIP :	TIMBRO 2-34-10-59 TREATER		EMPACT
FIELD DATA		SAMPLE TEMP. :	170
SAMPLE PRES. :	20	AMBIENT TEMP.:	
COMMENTS :	SPOT; NO PROBE		

COMPONENT	MOLE %	MASS %	VOL %
NITROGEN (AIR)	0.0630	0.0147	0.0136
CARBON DIOXIDE	0.0190	0.0070	0.0064
METHANE	0.0230	0.0031	0.0078
ETHANE	0.0960	0.0241	0.0507
PROPANE	0.8910	0.3283	0.4854
I-BUTANE	0.3850	0.1869	0.2489
N-BUTANE	1.6040	0.7788	0.9997
I-PENTANE	0.9403	0.5667	0.6808
N-PENTANE	1.4940	0.9005	1.0696
HEXANES PLUS	94.4847	97.1899	96.4371
TOTALS	100.0000	100.0000	100.0000

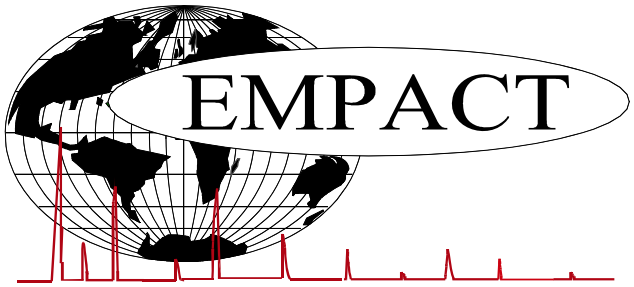
BTEX COMPONENTS	**MOLE%**	**MASS%**
BENZENE	1.1484	0.7494
TOLUENE	2.5140	1.9351
ETHYLBENZENE	0.8033	0.7125
XYLENE	2.2345	1.9819
TOTAL BTEX	6.7002	5.3789

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

	TOTAL SAMPLE	**C6+ FRACTION**	
Specific Gravity (H2O=1) =	0.7501	0.7561	60/60
API Gravity =	57.14	55.64	60/60
Molecular Weight =	119.70	123.876	
Absolute Density =	6.25	6.3	LBS/GAL
Heating Value Liq. Idl Gas=	126487	127890	BTU/GAL
Vapor/Liquid =	19.91	19.48	CUFT/GAL
Vapor Pressure =	6.57	1.46	PSIA @100 F

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

*****Calculated values may error depending on amount of unknown components in DHA, physical testing may be required.***



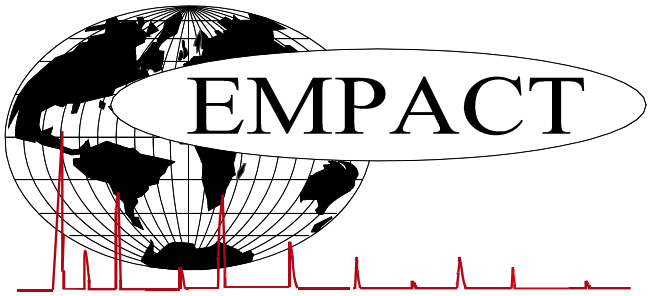
EXTENDED NATURAL GAS LIQUID ANALYSIS (*DHA)

E & P TANK / GLYCALC INFORMATION

PROJECT NO. :	201506097	ANALYSIS NO. :	02
COMPANY NAME :	CARRIZO OIL & GAS, INC	ANALYSIS DATE:	JUNE 18, 2015 07:05
ACCOUNT NO. :		SAMPLE DATE :	JUNE 12, 2015 13:58
PRODUCER :		CYLINDER NO. :	4038
LEASE NO. :		SAMPLED BY :	GALE MCENDREE
NAME/DESCRIP :	TIMBRO 2-34-10-59 TREATER		EMPACT
FIELD DATA		SAMPLE TEMP. :	170
SAMPLE PRES. :	20	AMBIENT TEMP.:	
COMMENTS :	SPOT; NO PROBE		

COMPONENT	Mole %		Wt %		LV %	
CARBON DIOXIDE	0.0190		0.0070		0.0064	
NITROGEN (AIR)	0.0630		0.0147		0.0136	
METHANE	0.0230		0.0031		0.0078	
ETHANE	0.0960		0.0241		0.0507	
PROPANE	0.8910		0.3283		0.4854	
I-BUTANE	0.3850		0.1869		0.2489	
N-BUTANE	1.6040		0.7788		0.9997	
I-PENTANE	0.9403		0.5667		0.6808	
N-PENTANE	1.4940		0.9005		1.0696	
CYCLOPENTANE (N-C5)	1.3096		0.7672		0.7566	
UNKNOWN C1-C5	0.0000		0.0000		0.0000	
N-HEXANE	5.9140		4.2574		4.8089	
CYCLOHEXANE (OTHER C6)	2.4056		1.6913		1.6184	
OTHER HEXANES	8.9785		6.3973		6.8425	
OTHER HEPTANES	12.1314		10.0960		10.6654	
METHYLCYCLOHEXANE (OTHER C7)	3.9936		3.2759		3.1701	
2,2,4 TRIMETHYLPENTANE	0.4046		0.3319		0.3302	
BENZENE	1.1484		0.7494		0.6363	
TOLUENE	2.5140		1.9351		1.6593	
ETHYLBENZENE	0.8033		0.7125		0.6109	
XYLENES	2.2345		1.9819		1.7025	
OTHER OCTANES	11.1119		10.5637		10.6926	
OCTANES PLUS	----	56.0896	----	68.0203	----	66.2796
NONANES	10.3515		10.9780		10.8966	
DECANES PLUS	31.1838		43.4523		42.0468	
TOTAL	100.0000		100.0000		100.0000	

API Gravity =	**57.14**	60/60
Vapor Pressure =	**6.57**	PSIA & 100 F
Average Molecular Weight of Decanes plus =	**166.80**	
Average Specific Gravity of Decanes plus =	**0.7750**	

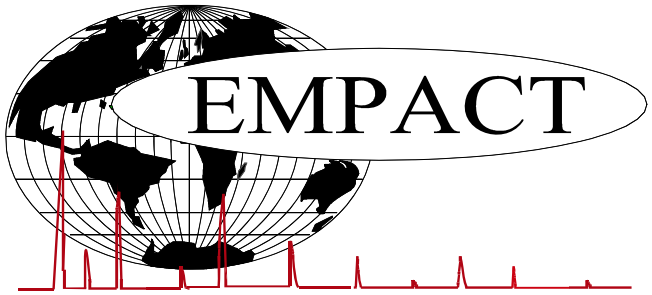


EXTENDED NATURAL GAS LIQUID ANALYSIS (*DHA)

BY CARBON NUMBER

PROJECT NO. :	201506097	ANALYSIS NO. :	02
COMPANY NAME :	CARRIZO OIL & GAS, INC	ANALYSIS DATE:	JUNE 18, 2015 07:05
ACCOUNT NO. :		SAMPLE DATE :	JUNE 12, 2015 13:58
PRODUCER :		CYLINDER NO. :	4038
LEASE NO. :		SAMPLED BY :	GALE MCENDREE
NAME/DESCRIP :	TIMBRO 2-34-10-59 TREATER		EMPACT
FIELD DATA		SAMPLE TEMP. :	170
SAMPLE PRES. :	20	AMBIENT TEMP.:	
COMMENTS :	SPOT; NO PROBE		

COMPONENT / CARBON NUMBER		MOLE%	MASS %	VOLUME %
NITROGEN		0.0630	0.0147	0.0136
CARBON DIOXIDE		0.0190	0.0070	0.0064
	C1	0.0230	0.0031	0.0078
	C2	0.0960	0.0241	0.0507
	C3	0.8910	0.3283	0.4854
	C4	1.9890	0.9657	1.2486
	C5	3.7439	2.2344	2.5070
	C6	18.4465	13.0954	13.9061
	C7	18.6390	15.3070	15.4948
	C8	14.5543	13.5900	13.3362
	C9	10.3515	10.9780	10.8966
	C10	10.9856	12.6731	12.3269
	C11	5.8065	7.2275	6.8422
	C12	3.6097	4.8785	4.7390
	C13	2.8471	4.2697	4.1609
	C14	2.4863	4.1206	4.0470
	C15	2.3623	4.1920	4.0698
	C16	1.6034	3.0332	2.9257
	C17	0.9178	1.8438	1.7729
	C18	0.4721	1.0038	0.9625
	C19	0.0808	0.1813	0.1727
	C20	0.0115	0.0271	0.0256
	C21	0.0007	0.0017	0.0016
	C22	0.0000	0.0000	0.0000
	C23	0.0000	0.0000	0.0000
	C24	0.0000	0.0000	0.0000
	C25	0.0000	0.0000	0.0000
	C26	0.0000	0.0000	0.0000
	C27	0.0000	0.0000	0.0000
	C28	0.0000	0.0000	0.0000
	C29	0.0000	0.0000	0.0000
	C30+	0.0000	0.0000	0.0000
	Total	100.0000	100.0000	100.0000



EXTENDED NATURAL GAS LIQUID ANALYSIS (*DHA)

DHA COMPONENT LIST

PROJECT NO. :	201506097	ANALYSIS NO. :	02
COMPANY NAME :	CARRIZO OIL & GAS, INC	ANALYSIS DATE:	JUNE 18, 2015 07:05
ACCOUNT NO. :		SAMPLE DATE :	JUNE 12, 2015 13:58
PRODUCER :		CYLINDER NO. :	4038
LEASE NO. :		SAMPLED BY :	GALE MCENDREE
NAME/DESCRIP :	TIMBRO 2-34-10-59 TREATER		EMPACT
FIELD DATA		SAMPLE TEMP. :	170
SAMPLE PRES. :	20	AMBIENT TEMP.:	
COMMENTS :	SPOT; NO PROBE		

COMPONENT	PIANO #	MOLE %	MASS %	VOL %
Nitrogen	NHC	0.0630	0.0147	0.0136
Carbon Dioxide	NHC	0.0190	0.0070	0.0064
Methane	P1	0.0230	0.0031	0.0078
Ethane	P2	0.0960	0.0241	0.0507
Propane	P3	0.8910	0.3283	0.4854
i-Butane	I4	0.3850	0.1869	0.2489
n-Butane	P4	1.6040	0.7788	0.9997
2,2-Dimethylpropane	I5	0.0223	0.0134	0.0168
i-Pentane	I5	0.9180	0.5533	0.6640
n-Pentane	P5	1.4940	0.9005	1.0696
2,2-Dimethylbutane	I6	0.0269	0.0194	0.0222
Cyclopentane	N5	1.3096	0.7672	0.7566
2,3-Dimethylbutane	I6	0.2458	0.1770	0.1989
2-Methylpentane	I6	1.7623	1.2688	1.4461
3-Methylpentane	I6	2.9772	2.1434	2.4022
n-Hexane	P6	5.9140	4.2574	4.8089
2,2-Dimethylpentane	I7	0.0109	0.0091	0.0100
Methylcyclopentane	N6	3.9640	2.7870	2.7712
2,4-Dimethylpentane	I7	0.1741	0.1457	0.1615
2,2,3-Trimethylbutane	I7	0.0120	0.0100	0.0108
Benzene	A6	1.1484	0.7494	0.6363
3,3-Dimethylpentane	I7	0.0165	0.0138	0.0149
Cyclohexane	N6	2.4056	1.6913	1.6184
2-Methylhexane	I7	0.7186	0.6015	0.6608
2,3-Dimethylpentane	I7	0.8924	0.7470	0.7973
1,1-Dimethylcyclopentane	N7	0.3559	0.2919	0.2882
3-Methylhexane	I7	1.2350	1.0338	1.1187
1c,3-Dimethylcyclopentane	N7	0.5892	0.4833	0.4834
1t,3-Dimethylcyclopentane	N7	0.4046	0.3319	0.3302
3-Ethylpentane	I7	0.3623	0.3033	0.3229
1t,2-Dimethylcyclopentane	N7	1.6178	1.3271	1.3158
2,2,4-Trimethylpentane	I8	0.0739	0.0705	0.0756
UnknownC6s	U6	0.0023	0.0017	0.0019
n-Heptane	P7	4.3512	3.6423	3.9675
1c,2-Dimethylcyclopentane	N7	0.1404	0.1152	0.1111
Methylcyclohexane	N7	3.9936	3.2759	3.1701
2,2-Dimethylhexane	I8	0.2919	0.2786	0.2983
1,1,3-Trimethylcyclopentane	N7	0.0339	0.0318	0.0317
Ethylcyclopentane	N7	0.6008	0.4928	0.4791
2,5-Dimethylhexane	I8	0.1058	0.1010	0.1084
2,2,3-Trimethylpentane	I8	0.0165	0.0157	0.0163
2,4-Dimethylhexane	I8	0.2080	0.1985	0.2121
1c,2t,4-Trimethylcyclopentane	N8	0.4018	0.3766	0.3676
3,3-Dimethylhexane	I8	0.0316	0.0302	0.0317

2,3,4-Trimethylpentane	I8	0.0497	0.0474	0.0491
2,3,3-Trimethylpentane	I8	0.0387	0.0369	0.0379
Toluene	A7	2.5140	1.9351	1.6593
2,3-Dimethylhexane	I8	0.1315	0.1255	0.1314
2-Methyl-3-ethylpentane	I8	0.1501	0.1432	0.1483
1,1,2-Trimethylcyclopentane	N8	0.0471	0.0442	0.0426
2-Methylheptane	I8	1.3257	1.2651	1.3480
4-Methylheptane	I8	0.2861	0.2730	0.2839
3-Methyl-3-ethylpentane	I8	0.1719	0.1640	0.1681
3,4-Dimethylhexane	I8	0.0270	0.0258	0.0267
1c,2c,4-Trimethylcyclopentane	N8	0.0178	0.0167	0.0161
1c,3-Dimethylcyclohexane	N8	0.0313	0.0293	0.0285
3-Methylheptane	I8	0.3024	0.2886	0.3049
1c,2t,3-Trimethylcyclopentane	N8	1.2649	1.1857	1.1470
3-Ethylhexane	I8	0.2249	0.2146	0.2243
1t,4-Dimethylcyclohexane	N8	0.4401	0.4126	0.4033
1,1-Dimethylcyclohexane	N8	0.1033	0.0968	0.0924
2,2,5-Trimethylhexane	I9	0.0150	0.0161	0.0169
3c-Ethylmethylcyclopentane	N8	0.0013	0.0012	0.0012
3t-Ethylmethylcyclopentane	N8	0.1962	0.1839	0.1788
2t-Ethylmethylcyclopentane	N8	0.1556	0.1459	0.1414
1,1-Methylethylcyclopentane	N8	0.5561	0.5213	0.4976
2,2,4-Trimethylhexane	I9	0.0362	0.0388	0.0404
1t,2-Dimethylcyclohexane	N8	0.5551	0.5204	0.5000
1c,2c,3-Trimethylcyclopentane	N8	0.0220	0.0206	0.0197
1t,3-Dimethylcyclohexane	N8	0.0015	0.0014	0.0013
UnknownC7s	U7	0.6158	0.5155	0.5615
n-Octane	P8	2.4630	2.3504	2.4925
1c,4-Dimethylcyclohexane	N8	0.8048	0.7544	0.7183
i-Propylcyclopentane	I8	0.0331	0.0310	0.0298
2,4,4-Trimethylhexane	I9	0.0031	0.0033	0.0034
2,2,3,4-Tetramethylpentane	I9	0.0191	0.0205	0.0212
2,3,4-Trimethylhexane	I9	0.0075	0.0080	0.0083
1c,2-Dimethylcyclohexane	N8	0.1617	0.1516	0.1420
2,3,5-Trimethylhexane	I9	0.0818	0.0877	0.0905
2,2-Dimethylheptane	I9	0.0061	0.0065	0.0068
1,1,4-Trimethylcyclohexane	N9	1.0583	1.1161	1.0779
2,2,3-Trimethylhexane	I9	0.3494	0.3744	0.3826
2,4-Dimethylheptane	I9	0.0087	0.0093	0.0097
4,4-Dimethylheptane	I9	0.0437	0.0468	0.0488
Ethylcyclohexane	N8	0.5574	0.5225	0.4945
n-Propylcyclopentane	N8	0.2378	0.2229	0.2139
1c,3c,5-Trimethylcyclohexane	N9	0.0247	0.0260	0.0251
2,5-Dimethylheptane	I9	0.0844	0.0904	0.0940
3,3-Dimethylheptane	I9	0.0766	0.0821	0.0854
3,5-Dimethylheptane	I9	0.0578	0.0619	0.0644
2,6-Dimethylheptane	I9	0.0316	0.0339	0.0356
1,1,3-Trimethylcyclohexane	N9	0.0124	0.0131	0.0127
Ethylbenzene	A8	0.8033	0.7125	0.6109
1c,2t,4t-Trimethylcyclohexane	N9	0.2484	0.2620	0.2482
2,3-Dimethylheptane	I9	0.0940	0.1007	0.1034
1,3-Dimethylbenzene (m-Xylene)	A8	0.7044	0.6248	0.5388
1,4-Dimethylbenzene (p-Xylene)	A8	0.8806	0.7810	0.6756
3,4-Dimethylheptane	I9	0.1729	0.1853	0.1889
3,4-Dimethylheptane (2)	I9	0.1108	0.1187	0.1210
4-Ethylheptane	I9	0.0170	0.0182	0.0190
4-Methyloctane	I9	0.3087	0.3308	0.3421
2-Methyloctane	I9	0.3136	0.3360	0.3510
1c,2t,4c-Trimethylcyclohexane	I9	0.0684	0.0733	0.0753
3-Ethylheptane	I9	0.1045	0.1120	0.1149
3-Methyloctane	I9	0.1508	0.1616	0.1671
3,3-Diethylpentane	I9	0.0361	0.0387	0.0382
1c,2t,3-Trimethylcyclohexane	N9	0.0767	0.0809	0.0766
1,1,2-Trimethylcyclohexane	N9	0.0371	0.0391	0.0370
1,2-Dimethylbenzene (o-Xylene)	A8	0.6495	0.5761	0.4881
i-Butylcyclopentane	N9	0.3029	0.3194	0.3049
UnknownC8s	U8	0.0289	0.0276	0.0293
n-Nonane	P9	2.0895	2.2389	2.3253
1,1-Methylethylcyclohexane	N9	0.4752	0.5092	0.5304
i-Propylbenzene	A9	0.2291	0.2300	0.1986
i-Propylcyclohexane	N9	0.0884	0.0932	0.0866
2,2-Dimethyloctane	I10	0.0974	0.1158	0.1167
2,4-Dimethyloctane	I10	0.0486	0.0578	0.0583
2,6-Dimethyloctane	I10	0.0129	0.0153	0.0159

2,5-Dimethyloctane	I10	0.0454	0.0540	0.0544
n-Butylcyclopentane	N9	0.2682	0.3143	0.2933
3,3-Dimethyloctane	I10	0.1179	0.1401	0.1413
n-Propylbenzene	A9	0.1208	0.1213	0.1047
3,6-Dimethyloctane	I10	0.1956	0.2325	0.2344
3-Methyl-5-ethylheptane	I10	0.2657	0.2847	0.2924
1,3-Methylethylbenzene	A9	0.3117	0.3130	0.2680
1,4-Methylethylbenzene	A9	0.1397	0.1403	0.1201
1,3,5-Trimethylbenzene	A9	0.1542	0.1548	0.1335
2,3-Dimethyloctane	I10	0.0806	0.0958	0.0966
5-Methylnonane	I10	0.2654	0.3155	0.3211
1,2-Methylethylbenzene	A9	0.4193	0.4210	0.3586
2-Methylnonane	I10	0.1124	0.1336	0.1371
3-Ethyloctane	I10	0.0651	0.0774	0.0780
3-Methylnonane	I10	0.1639	0.1948	0.1980
1,2,4-Trimethylbenzene	A9	0.0180	0.0181	0.0154
t-Butylbenzene	A10	0.3301	0.3701	0.3187
i-Butylcyclohexane	N10	0.2441	0.2860	0.2627
1t-Methyl-2-n-propylcyclohexane	I10	0.0536	0.0574	0.0590
i-Butylbenzene	A10	0.0408	0.0457	0.0400
sec-Butylbenzene	A10	0.0529	0.0593	0.0513
UnknownC9s	U9	1.8505	1.9828	2.0593
n-Decane	P10	1.6864	2.0045	2.0468
1,2,3-Trimethylbenzene	A9	0.2286	0.2295	0.1915
1,3-Methyl-i-propylbenzene	A10	0.1160	0.1165	0.0992
1,4-Methyl-i-propylbenzene	A10	0.1257	0.1262	0.1075
Sec-Butylcyclohexane	N10	0.3722	0.4361	0.4001
1,2-Methyl-i-propylbenzene	A10	0.2030	0.2276	0.1937
3-Ethylnonane	I10	0.0453	0.0538	0.0552
1,3-Diethylbenzene	A10	0.1773	0.1988	0.1716
1,3-Methyl-n-propylbenzene	A10	0.0278	0.0312	0.0270
1,4-Diethylbenzene	A10	0.2126	0.2384	0.2063
1,4-Methyl-n-propylbenzene	A10	0.1173	0.1315	0.1142
n-Butylbenzene	A10	0.1125	0.1261	0.1092
1,3-Dimethyl-5-ethylbenzene	A10	0.1006	0.1128	0.0973
1,2-Diethylbenzene	A10	0.1722	0.1931	0.1638
1,2-Methyl-n-propylbenzene	A10	0.0210	0.0235	0.0201
1,4-Dimethyl-2-ethylbenzene	A10	0.0083	0.0093	0.0079
1,3-Dimethyl-4-ethylbenzene	A10	0.1252	0.1404	0.1195
1,2-Dimethyl-4-ethylbenzene	A10	0.1496	0.1677	0.1431
1,3-Dimethyl-2-ethylbenzene	A10	0.0522	0.0585	0.0490
1t,2c,4-Trimethylcyclopentane	A10	0.4610	0.4321	0.4309
1,2-Dimethyl-3-ethylbenzene	A10	0.1766	0.1980	0.1656
1,2-Ethyl-i-propylbenzene	A10	0.1997	0.2239	0.1905
1,4-Methyl-t-butylbenzene	A11	0.2038	0.2285	0.1944
UnknownC10s	U10	3.8250	4.5464	4.6424
n-Undecane	P11	1.3669	1.7849	1.7973
1,4-Ethyl-i-propylbenzene	A11	0.0700	0.0785	0.0668
1,2,4,5-Tetramethylbenzene	A11	0.1228	0.1377	0.1159
1,2-Methyl-n-butylbenzene	A11	0.0249	0.0279	0.0237
1,2,3,5-Tetramethylbenzene	A11	0.1055	0.1183	0.0991
1,2-Methyl-t-butylbenzene	A11	0.1218	0.1366	0.1162
5-Methylindan	A11	0.0252	0.0359	0.0358
4-Methylindan	A11	0.0141	0.0201	0.0200
1,2-Ethyl-n-propylbenzene	A11	0.1782	0.1998	0.1700
2-Methylindan	A11	0.0769	0.1094	0.1090
1,3-Methyl-n-butylbenzene	A11	0.0280	0.0314	0.0267
1,3-Di-i-propylbenzene	A11	0.1274	0.1429	0.1216
sec-Pentylbenzene	A11	0.1436	0.1610	0.1370
n-Pentylbenzene	A11	0.1142	0.1414	0.1228
1t-M-2-(4MP)cyclopentane	P12	0.0204	0.0290	0.0289
1,2-Di-n-propylbenzene	A11	0.2060	0.2310	0.1966
1,4-Di-i-propylbenzene	A11	0.1326	0.1487	0.1265
Tetrahydronaphthalene	A10	0.1150	0.1289	0.1097
t-Decahydronaphthalene	A10	0.1530	0.1716	0.1460
Naphthalene	A10	0.0377	0.0404	0.0344
1-t-Butyl-3,5-dimethylbenzene	A12	0.0637	0.0714	0.0608
1,4-Ethyl-t-butylbenzene	A11	0.1766	0.1980	0.1685
UnknownC11s	U11	2.0776	2.7130	2.7319
n-Dodecane	P12	1.1585	1.6486	1.6418
1,3-Di-n-propylbenzene	A12	0.0192	0.0215	0.0183
1,3,5-Triethylbenzene	A12	0.3872	0.3888	0.3351
1,2,4-Triethylbenzene	A12	0.0568	0.0570	0.0485
1,4-Methyl-n-pentylbenzene	A12	0.1226	0.1375	0.1170

n-Hexylbenzene	A12	0.1506	0.2042	0.1776
1,2,3,4,5-Pentamethylbenzene	A13	0.2753	0.3087	0.2627
2-Methylnaphthalene	A11	0.2561	0.3042	0.2589
1-Methylnaphthalene	A11	0.2343	0.2783	0.2035
UnknownC12s	U12	1.6307	2.3205	2.3110
n-Tridecane	P13	1.0143	1.5622	1.5374
UnknownC13s	U13	1.5575	2.3988	2.3608
n-Tetradecane	P14	0.9055	1.5007	1.4739
UnknownC14s	U14	1.5808	2.6199	2.5731
n-Pentadecane	P15	0.7748	1.3749	1.3348
UnknownC15s	U15	1.5875	2.8171	2.7350
n-Hexadecane	P16	0.5922	1.1203	1.0806
UnknownC16s	U16	1.0112	1.9129	1.8451
n-Heptadecane	P17	0.2484	0.4990	0.4798
UnknownC17s	U17	0.6694	1.3448	1.2931
n-Octadecane	P18	0.0346	0.0736	0.0706
UnknownC18s	U18	0.4375	0.9302	0.8919
n-Nonadecane	P19	0.0233	0.0523	0.0498
UnknownC19s	U19	0.0575	0.1290	0.1229
n-Eicosane	P20	0.0037	0.0087	0.0082
UnknownC20s	U20	0.0078	0.0184	0.0174
n-Heneicosane	P21	0.0007	0.0017	0.0016
TOTAL		100.0000	100.0000	100.0000

EXTENDED NATURAL GAS ANALYSIS (*DHA)

MAIN PAGE

LEASE #:		NAME/DESCRIP :	**TIMBRO 2-34-10-59 SALES GAS**
PROJECT NO. :	**201506097**	ANALYSIS NO. :	**03**
COMPANY NAME :	**CARRIZO OIL & GAS, INC**	ANALYSIS DATE:	JUNE 25, 2015 06:33
OFFICE / BRANCH:	COLORADO	SAMPLE DATE :	JUNE 12, 2015 14:05
CUSTOMER REF:		TO:	
PRODUCER :		EFFECTIVE DATE:	

*****FIELD DATA*****

SAMPLE CYCLE:			SAMPLE TYPE:	SPOT	
SAMPLE PRES. :	76	psig	CYLINDER NO. :	0365	
LAB PRES:		psig	SAMPLED BY :	GALE MCENDREE	
SAMPLE TEMP. :	74	ºf	SAMPLING COMPANY	EMPACT	
AMBIENT TEMP.:		ºf	H2S BY STAIN TUBE:	<1	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	0.0029	0.0038		
HELIUM	0.01	0.00	---	---
HYDROGEN	0.01	0.00	---	---
OXYGEN/ARGON	0.01	0.01	---	---
NITROGEN	0.6200	0.6600	---	---
CARBON DIOXIDE	2.68	4.48	---	---
METHANE	60.38500	36.75610	---	---
ETHANE	15.6498	17.8547	4.2075	4.1846
PROPANE	13.2445	22.1593	3.6673	3.6474
I-BUTANE	1.2021	2.6510	0.3950	0.3929
N-BUTANE	3.9008	8.6024	1.2365	1.2298
I-PENTANE	0.6976	1.9047	0.2519	0.2505
N-PENTANE	0.8108	2.2196	0.2953	0.2937
HEXANES PLUS	0.7765	2.6984	0.3100	0.3085
TOTALS	100.00000	100.00000	10.3635	10.3074

BTEX COMPONENTS	MOLE%	WT%
BENZENE	0.0265	0.0785
TOLUENE	0.0173	0.0605
ETHYLBENZENE	0.0013	0.0052
XYLENES	0.0026	0.0104
TOTAL BTEX	0.0477	0.1546

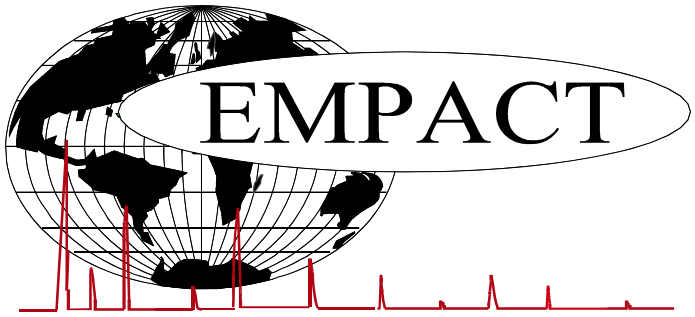
	BTU @	14.730	14.650
LOW	NET DRY REAL :	1363.7 **/scf**	1356.3 **/scf**
	NET WET REAL :	1340.0 **/scf**	1332.6 **/scf**
HIGH	GROSS DRY REAL :	1495.7 **/scf**	1487.6 **/scf**
	GROSS WET REAL :	1469.7 **/scf**	1461.6 **/scf**
	NET DRY REAL :	19656.5 **/lb**	19549.7 **/lb**
	GROSS DRY REAL :	21558.7 **/lb**	21441.7 **/lb**

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

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

RELATIVE DENSITY (AIR=1): 0.9089

COMPRESSIBILITY FACTOR : 0.99458

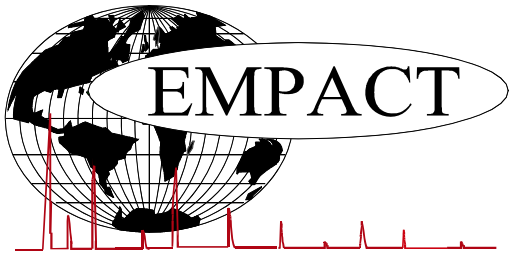


EXTENDED NATURAL GAS ANALYSIS (*DHA)

GLYCALC INFORMATION

PROJECT NO. :	201506097	ANALYSIS NO. :	03
COMPANY NAME :	CARRIZO OIL & GAS, INC	ANALYSIS DATE:	JUNE 25, 2015 06:33
ACCOUNT NO. :		SAMPLE DATE :	JUNE 12, 2015 14:05
PRODUCER :		CYLINDER NO. :	0365
LEASE NO. :		SAMPLED BY :	GALE MCENDREE
NAME/DESCRIP :	TIMBRO 2-34-10-59 SALES GAS		
FIELD DATA		SAMPLE TEMP. :	74
SAMPLE PRES. :	76	AMBIENT TEMP.:	
COMMENTS :	SPOT; NO PROBE		

Componet	Mole %	Wt %
Helium	0.01	0.00
Hydrogen	0.01	0.00
Carbon Dioxide	2.68	4.48
Nitrogen	0.62	0.66
Methane	60.38500	36.75610
Ethane	15.6498	17.8547
Propane	13.2445	22.1593
Isobutane	1.2021	2.6510
n-Butane	3.9008	8.6024
Isopentane	0.6326	1.7317
n-Pentane	0.8108	2.2196
Cyclopentane	0.0650	0.1730
n-Hexane	0.1610	0.5264
Cyclohexane	0.0418	0.1335
Other Hexanes	0.2856	0.9268
Heptanes	0.1347	0.5088
Methycyclohexane	0.0335	0.1248
2,2,4 Trimethylpentane	0.0030	0.0130
Benzene	0.0265	0.0785
Toluene	0.0173	0.0605
Ethylbenzene	0.0013	0.0052
Xylenes	0.0026	0.0104
C8+ Heavies	0.0692	0.3105
Subtotal	99.98710	99.98620
Oxygen/Argon	0.01	0.01
Alcohols	0.0029	0.0038
Total	100.00000	100.00000



EXTENDED NATURAL GAS ANALYSIS (*DHA)

DHA COMPONENT LIST

PROJECT NO. :	201506097	ANALYSIS NO. :	03
COMPANY NAME :	CARRIZO OIL & GAS, INC	ANALYSIS DATE:	JUNE 25, 2015 06:33
ACCOUNT NO. :		SAMPLE DATE :	JUNE 12, 2015 14:05
PRODUCER :		CYLINDER NO. :	0365
LEASE NO. :		SAMPLED BY :	GALE MCENDREE
NAME/DESCRIP :	TIMBRO 2-34-10-59 SALES GAS		
FIELD DATA		SAMPLE TEMP. :	74
SAMPLE PRES. :	76	AMBIENT TEMP.:	
COMMENTS :	SPOT; NO PROBE		

COMPONENT	PIANO #	MOLE %	MASS %	GPM @ 14.730	GPM @ 14.650
Helium	---	0.01	0.00	---	---
Hydrogen	---	0.01	0.00	---	---
Oxygen/Argon	---	0.01	0.01	---	---
Nitrogen	---	0.62	0.66	---	---
Carbon Dioxide	---	2.68	4.48	---	---
Methane	P1	60.38500	36.75610	---	---
Ethane	P2	15.6498	17.8547	4.208	4.185
Propane	P3	13.2445	22.1593	3.667	3.647
i-Butane	I4	1.2021	2.6510	0.395	0.393
Methanol	X1	0.0027	0.0033	0.000	0.000
n-Butane	P4	3.9008	8.6024	1.237	1.230
2,2-Dimethylpropane	I5	0.0033	0.0090	0.001	0.001
i-Pentane	I5	0.6293	1.7227	0.232	0.231
i-Propanol	X3	0.0002	0.0005	0.000	0.000
n-Pentane	P5	0.8107	2.2193	0.295	0.294
2,2-Dimethylbutane	I6	0.0018	0.0059	0.001	0.001
Cyclopentane	N5	0.0650	0.1730	0.019	0.019
2,3-Dimethylbutane	I6	0.0105	0.0343	0.004	0.004
2-Methylpentane	I6	0.1185	0.3875	0.049	0.049
3-Methylpentane	I6	0.0611	0.1998	0.025	0.025
UnknownC5s	U5	0.0001	0.0003	0.000	0.000
n-Hexane	P6	0.1610	0.5264	0.067	0.066
Methylcyclopentane	N6	0.0934	0.2983	0.033	0.033
2,4-Dimethylpentane	I7	0.0037	0.0141	0.002	0.002
2,2,3-Trimethylbutane	I7	0.0001	0.0004	0.000	0.000
Benzene	A6	0.0265	0.0785	0.007	0.007
3,3-Dimethylpentane	I7	0.0001	0.0004	0.000	0.000
Cyclohexane	N6	0.0418	0.1335	0.014	0.014
2-Methylhexane	I7	0.0111	0.0422	0.005	0.005
2,3-Dimethylpentane	I7	0.0087	0.0331	0.004	0.004
1,1-Dimethylcyclopentane	N7	0.0081	0.0302	0.003	0.003
3-Methylhexane	I7	0.0145	0.0551	0.007	0.007
1c,3-Dimethylcyclopentane	N7	0.0067	0.0250	0.003	0.003
1t,3-Dimethylcyclopentane	N7	0.0105	0.0391	0.005	0.005
3-Ethylpentane	I7	0.0025	0.0095	0.001	0.001
1t,2-Dimethylcyclopentane	N7	0.0177	0.0659	0.008	0.008
2,2,4-Trimethylpentane	I8	0.0030	0.0130	0.002	0.002

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UnknownC6s	U6	0.0003	0.0010	0.000	0.000
n-Heptane	P7	0.0399	0.1517	0.018	0.018
1c,2-Dimethylcyclopentane	N7	0.0010	0.0037	0.000	0.000
Methylcyclohexane	N7	0.0335	0.1248	0.013	0.013
2,2-Dimethylhexane	I8	0.0023	0.0100	0.001	0.001
1,1,3-Trimethylcyclopentane	N7	0.0007	0.0030	0.000	0.000
Ethylcyclopentane	N7	0.0052	0.0194	0.002	0.002
2,5-Dimethylhexane	I8	0.0006	0.0026	0.000	0.000
2,2,3-Trimethylpentane	I8	0.0009	0.0039	0.000	0.000
2,4-Dimethylhexane	I8	0.0007	0.0030	0.000	0.000
1c,2t,4-Trimethylcyclopentane	N8	0.0029	0.0123	0.001	0.001
3,3-Dimethylhexane	I8	0.0002	0.0009	0.000	0.000
1t,2c,4-Trimethylcyclopentane	N8	0.0025	0.0107	0.001	0.001
2,3,4-Trimethylpentane	I8	0.0004	0.0017	0.000	0.000
2,3,3-Trimethylpentane	I8	0.0002	0.0009	0.000	0.000
Toluene	A7	0.0173	0.0605	0.006	0.006
2,3-Dimethylhexane	I8	0.0007	0.0030	0.000	0.000
2-Methyl-3-ethylpentane	I8	0.0006	0.0026	0.000	0.000
1,1,2-Trimethylcyclopentane	N8	0.0001	0.0004	0.000	0.000
2-Methylheptane	I8	0.0052	0.0225	0.003	0.003
4-Methylheptane	I8	0.0015	0.0065	0.001	0.001
3-Methyl-3-ethylpentane	I8	0.0007	0.0030	0.000	0.000
3,4-Dimethylhexane	I8	0.0006	0.0026	0.000	0.000
1c,2c,4-Trimethylcyclopentane	N8	0.0004	0.0017	0.000	0.000
1c,3-Dimethylcyclohexane	N8	0.0001	0.0004	0.000	0.000
3-Methylheptane	I8	0.0023	0.0100	0.001	0.001
1c,2t,3-Trimethylcyclopentane	N8	0.0025	0.0107	0.001	0.001
3-Ethylhexane	I8	0.0012	0.0052	0.001	0.001
1t,4-Dimethylcyclohexane	N8	0.0027	0.0115	0.001	0.001
1,1-Dimethylcyclohexane	N8	0.0004	0.0017	0.000	0.000
2,2,5-Trimethylhexane	I9	0.0002	0.0010	0.000	0.000
3t-Ethylmethylcyclopentane	N8	0.0010	0.0042	0.001	0.001
2t-Ethylmethylcyclopentane	N8	0.0016	0.0068	0.001	0.001
1,1-Methylethylcyclopentane	N8	0.0011	0.0047	0.001	0.001
2,2,4-Trimethylhexane	I9	0.0002	0.0010	0.000	0.000
1t,2-Dimethylcyclohexane	N8	0.0016	0.0068	0.001	0.001
1c,2c,3-Trimethylcyclopentane	N8	0.0006	0.0025	0.000	0.000
UnknownC7s	U7	0.0042	0.0160	0.002	0.002
n-Octane	P8	0.0055	0.0238	0.003	0.003
1c,4-Dimethylcyclohexane	N8	0.0037	0.0157	0.002	0.002
i-Propylcyclopentane	I8	0.0001	0.0004	0.000	0.000
2,4,4-Trimethylhexane	I9	0.0001	0.0005	0.000	0.000
2,3,5-Trimethylhexane	I9	0.0001	0.0005	0.000	0.000
2,2,3,4-Tetramethylpentane	I9	0.0002	0.0010	0.000	0.000
2,3,4-Trimethylhexane	I9	0.0001	0.0005	0.000	0.000
1c,2-Dimethylcyclohexane	N8	0.0002	0.0008	0.000	0.000
2,2-Dimethylheptane	I9	0.0001	0.0005	0.000	0.000
1,1,4-Trimethylcyclohexane	N9	0.0021	0.0100	0.001	0.001
2,2,3-Trimethylhexane	I9	0.0001	0.0005	0.000	0.000
2,4-Dimethylheptane	I9	0.0002	0.0010	0.000	0.000
4,4-Dimethylheptane	I9	0.0010	0.0049	0.001	0.001
Ethylcyclohexane	N8	0.0009	0.0038	0.000	0.000
n-Propylcyclopentane	N8	0.0005	0.0021	0.000	0.000
1c,3c,5-Trimethylcyclohexane	N9	0.0002	0.0009	0.000	0.000
2,5-Dimethylheptane	I9	0.0002	0.0010	0.000	0.000
3,3-Dimethylheptane	I9	0.0001	0.0005	0.000	0.000
3,5-Dimethylheptane	I9	0.0002	0.0010	0.000	0.000
2,6-Dimethylheptane	I9	0.0001	0.0005	0.000	0.000
1,1,3-Trimethylcyclohexane	N9	0.0001	0.0005	0.000	0.000
Ethylbenzene	I8	0.0013	0.0052	0.001	0.001
1c,2t,4t-Trimethylcyclohexane	N9	0.0005	0.0024	0.000	0.000

2,3-Dimethylheptane	I9	0.0006	0.0029	0.000	0.000
1,3-Dimethylbenzene (m-Xylene)	A8	0.0008	0.0032	0.000	0.000
1,4-Dimethylbenzene (p-Xylene)	A8	0.0009	0.0036	0.000	0.000
3,4-Dimethylheptane	I9	0.0002	0.0010	0.000	0.000
3,4-Dimethylheptane (2)	I9	0.0009	0.0044	0.000	0.000
4-Ethylheptane	I9	0.0002	0.0010	0.000	0.000
4-Methyloctane	I9	0.0005	0.0024	0.000	0.000
2-Methyloctane	I9	0.0003	0.0014	0.000	0.000
1c,2t,3-Trimethylcyclohexane	N9	0.0004	0.0019	0.000	0.000
3-Ethylheptane	I9	0.0001	0.0005	0.000	0.000
3-Methyloctane	I9	0.0001	0.0005	0.000	0.000
1,1,2-Trimethylcyclohexane	N9	0.0002	0.0009	0.000	0.000
3,3-Diethylpentane	I9	0.0002	0.0010	0.000	0.000
1,2-Dimethylbenzene (o-Xylene)	A8	0.0009	0.0036	0.000	0.000
i-Butylcyclopentane	N9	0.0005	0.0024	0.000	0.000
UnknownC8s	U8	0.0014	0.0061	0.001	0.001
n-Nonane	P9	0.0017	0.0083	0.001	0.001
1,1-Methylethylcyclohexane	N9	0.0005	0.0024	0.000	0.000
i-Propylbenzene	A9	0.0002	0.0009	0.000	0.000
i-Propylcyclohexane	N9	0.0002	0.0009	0.000	0.000
2,2-Dimethyloctane	I10	0.0001	0.0005	0.000	0.000
2,5-Dimethyloctane	I10	0.0001	0.0005	0.000	0.000
n-Butylcyclopentane	N9	0.0003	0.0014	0.000	0.000
3,3-Dimethyloctane	I10	0.0001	0.0005	0.000	0.000
n-Propylbenzene	A9	0.0001	0.0005	0.000	0.000
3,6-Dimethyloctane	I10	0.0003	0.0016	0.000	0.000
3-Methyl-5-ethylheptane	I10	0.0002	0.0011	0.000	0.000
1,3-Methylethylbenzene	A9	0.0002	0.0009	0.000	0.000
1,4-Methylethylbenzene	A9	0.0001	0.0005	0.000	0.000
1,3,5-Trimethylbenzene	A9	0.0001	0.0005	0.000	0.000
2,3-Dimethyloctane	I10	0.0002	0.0011	0.000	0.000
5-Methylnonane	I10	0.0001	0.0005	0.000	0.000
1,2-Methylethylbenzene	A9	0.0001	0.0005	0.000	0.000
3-Methylnonane	I10	0.0001	0.0005	0.000	0.000
t-Butylbenzene	A10	0.0002	0.0010	0.000	0.000
UnknownC9s	U9	0.0042	0.0204	0.002	0.002
n-Decane	P10	0.0003	0.0016	0.000	0.000
1,3-Methyl-i-propylbenzene	A10	0.0001	0.0005	0.000	0.000
Sec-Butylcyclohexane	A10	0.0001	0.0005	0.000	0.000
1,4-Diethylbenzene	A10	0.0001	0.0005	0.000	0.000
n-Butylbenzene	A10	0.0001	0.0005	0.000	0.000
UnknownC10s	U10	0.0011	0.0060	0.001	0.001
n-Undecane	P11	0.0001	0.0006	0.000	0.000
UnknownC11s	U11	0.0003	0.0018	0.000	0.000
TOTAL		100.00000	100.00000	10.3635	10.3074

BTEX COMPONENTS	**MOLE%**	**WT%**
BENZENE	0.0265	0.0785
TOLUENE	0.0173	0.0605
ETHYLBENZENE	0.0013	0.0052
XYLENES	0.0026	0.0104
TOTAL BTEX	0.0477	0.1546

	BTU @	14.730	14.650
LOW	NET DRY REAL :	1363.7 **/scf**	1356.3 **/scf**
	NET WET REAL :	1340.0 **/scf**	1332.6 **/scf**
HIGH	GROSS DRY REAL :	1495.7 **/scf**	1487.6 **/scf**
	GROSS WET REAL :	1469.7 **/scf**	1461.6 **/scf**
	NET DRY REAL :	19656.5 **/lb**	19549.7 **/lb**
	GROSS DRY REAL :	21558.7 **/lb**	21441.7 **/lb**
	RELATIVE DENSITY (AIR=1):		0.9089
	COMPRESSIBILITY FACTOR :		0.99458

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

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