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

303-637-0150

EXTENDED NATURAL GAS LIQUID ANALYSIS (*DHA)

MAIN PAGE

PROJECT NO. :	201406094	ANALYSIS NO. :	04
COMPANY NAME :	CARRIZO OIL & GAS	ANALYSIS DATE:	JUNE 16, 2014
ACCOUNT NO. :		SAMPLE DATE :	JUNE 13, 2014
PRODUCER :		CYLINDER NO. :	11116
LEASE NO. :		SAMPLED BY :	JOHN MOSER
NAME/DESCRIP :	OIL TREATER @ 13:20		EMPACT
	BRINGELSON RANCH 8-20-9-58		
FIELD DATA		SAMPLE TEMP. :	152
SAMPLE PRES. :	33	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; NO PROBE		

COMPONENT	MOLE %	MASS %	VOL %
ALCOHOLS	0.0090	0.0046	0.0044
NITROGEN (AIR)	0.0110	0.0027	0.0025
CARBON DIOXIDE	0.0260	0.0102	0.0093
METHANE	0.0980	0.0140	0.0347
ETHANE	0.4570	0.1220	0.2547
PROPANE	1.7240	0.6750	0.9903
I-BUTANE	0.4070	0.2100	0.2775
N-BUTANE	2.0920	1.0795	1.3750
I-PENTANE	0.8683	0.5562	0.6627
N-PENTANE	1.4340	0.9186	1.0826
HEXANES PLUS	92.8737	96.4072	95.3063
TOTALS	100.0000	100.0000	100.0000

BTEX COMPONENTS	**MOLE%**	**MASS%**
BENZENE	1.0756	0.7459
TOLUENE	2.2190	1.8153
ETHYLBENZENE	0.6894	0.6499
XYLENE	2.2128	2.0859
TOTAL BTEX	6.1968	5.2970

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

	TOTAL SAMPLE	**C6+ FRACTION**	
Specific Gravity (H2O=1) =	0.7442	0.7529	60/60
API Gravity =	58.64	56.44	60/60
Molecular Weight =	112.63	117.663	
Absolute Density =	6.2	6.27	LBS/GAL
Heating Value Liq. Idl Gas=	126452	127506	BTU/GAL
Vapor/Liquid =	21.07	20.38	CUFT/GAL
Vapor Pressure =	15.19	1.69	PSIA @100 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 LIQUID ANALYSIS (*DHA)

E & P TANK / GLYCALC INFORMATION

PROJECT NO. :	201406094	ANALYSIS NO. :	04
COMPANY NAME :	CARRIZO OIL & GAS	ANALYSIS DATE:	JUNE 16, 2014
ACCOUNT NO. :		SAMPLE DATE :	JUNE 13, 2014
PRODUCER :		CYLINDER NO. :	11116
LEASE NO. :		SAMPLED BY :	JOHN MOSER
NAME/DESCRIP :	OIL TREATER @ 13:20 BRINGELSON RANCH 8-20-9-58		EMPACT
FIELD DATA		SAMPLE TEMP. :	152
SAMPLE PRES. :	33	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; NO PROBE		

COMPONENT	Mole %		Wt %		LV %	
CARBON DIOXIDE	0.0260		0.0102		0.0093	
NITROGEN (AIR)	0.0110		0.0027		0.0025	
METHANE	0.0980		0.0140		0.0347	
ETHANE	0.4570		0.1220		0.2547	
PROPANE	1.7240		0.6750		0.9903	
I-BUTANE	0.4070		0.2100		0.2775	
N-BUTANE	2.0920		1.0795		1.3750	
I-PENTANE	0.8683		0.5562		0.6627	
N-PENTANE	1.4340		0.9186		1.0826	
CYCLOPENTANE (N-C5)	1.4577		0.9077		0.8882	
N-HEXANE	6.6073		5.0549		5.6653	
CYCLOHEXANE (OTHER C6)	2.6765		2.0000		1.8989	
OTHER HEXANES	10.5093		7.9597		8.4759	
OTHER HEPTANES	13.5951		12.0077		12.5480	
METHYLCYCLOHEXANE (OTHER C7)	4.2786		3.7301		3.5815	
2,2,4 TRIMETHYLPENTANE	0.9328		0.8132		0.8028	
BENZENE	1.0756		0.7459		0.6284	
TOLUENE	2.2190		1.8153		1.5445	
ETHYLBENZENE	0.6894		0.6499		0.5529	
XYLENES	2.2128		2.0859		1.7774	
OTHER OCTANES	11.3704		11.5663		11.6742	
OCTANES PLUS	----	50.4546	----	62.1859	----	60.0756
NONANES	10.4097		11.7010		11.4542	
DECANES PLUS	24.8395		35.3696		33.8141	
SUB TOTAL	99.9910		99.9954		99.9956	
ALCOHOLS	0.0090		0.0046		0.0044	
TOTAL	100.0000		100.0000		100.0000	

API Gravity =	**58.64**	60/60
Vapor Pressure =	**15.19**	PSIA & 100 F
Average Molecular Weight of Decanes plus =	**160.38**	
Average Specific Gravity of Decanes plus =	**0.7780**	

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

303-637-0150

EXTENDED NATURAL GAS LIQUID ANALYSIS (*DHA)

BY CARBON NUMBER

PROJECT NO. :	201406094	ANALYSIS NO. :	04
COMPANY NAME :	CARRIZO OIL & GAS	ANALYSIS DATE:	JUNE 16, 2014
ACCOUNT NO. :		SAMPLE DATE :	JUNE 13, 2014
PRODUCER :		CYLINDER NO. :	11116
LEASE NO. :		SAMPLED BY :	JOHN MOSER
NAME/DESCRIP :	OIL TREATER @ 13:20		EMPACT
	BRINGELSON RANCH 8-20-9-58		
FIELD DATA		SAMPLE TEMP. :	152
SAMPLE PRES. :	33	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; NO PROBE		

COMPONENT / CARBON NUMBER		MOLE%	MASS %	VOLUME %
ALCOHOLS		0.0090	0.0046	0.0044
NITROGEN		0.0110	0.0027	0.0025
CARBON DIOXIDE		0.0260	0.0102	0.0093
	C1	0.0980	0.0140	0.0347
	C2	0.4570	0.1220	0.2547
	C3	1.7240	0.6750	0.9903
	C4	2.4990	1.2895	1.6525
	C5	3.7600	2.3825	2.6335
	C6	20.8687	15.7605	16.6685
	C7	20.0927	17.5531	17.6740
	C8	15.2054	15.1153	14.8073
	C9	10.4097	11.7010	11.4542
	C10	9.5319	11.5885	11.0965
	C11	5.1540	6.7771	6.3196
	C12	3.2016	4.5868	4.4094
	C13	2.3762	3.7805	3.6529
	C14	1.8144	3.1960	3.1144
	C15	1.6512	3.1142	2.9999
	C16	0.5971	1.2005	1.1489
	C17	0.2967	0.6335	0.6044
	C18	0.1914	0.4325	0.4114
	C19	0.0223	0.0532	0.0503
	C20	0.0027	0.0068	0.0064
	C21	0.0000	0.0000	0.0000
	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

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

303-637-0150

EXTENDED NATURAL GAS LIQUID ANALYSIS (*DHA)

DHA COMPONENT LIST

PROJECT NO. :	201406094	ANALYSIS NO. :	04
COMPANY NAME :	CARRIZO OIL & GAS	ANALYSIS DATE:	JUNE 16, 2014
ACCOUNT NO. :		SAMPLE DATE :	JUNE 13, 2014
PRODUCER :		CYLINDER NO. :	11116
LEASE NO. :		SAMPLED BY :	JOHN MOSER
NAME/DESCRIP :	OIL TREATER @ 13:20		EMPACT
	BRINGELSON RANCH 8-20-9-58		
FIELD DATA		SAMPLE TEMP. :	152
SAMPLE PRES. :	33	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; NO PROBE		

COMPONENT	PIANO #	MOLE %	MASS %	VOL %
Nitrogen	NHC	0.0110	0.0027	0.0025
Carbon Dioxide	NHC	0.0260	0.0102	0.0093
Methane	P1	0.0980	0.0140	0.0347
Ethane	P2	0.4570	0.1220	0.2547
Propane	P3	1.7240	0.6750	0.9903
i-Butane	I4	0.4070	0.2100	0.2775
n-Butane	P4	2.0920	1.0795	1.3750
2,2-Dimethylpropane	I5	0.0103	0.0066	0.0082
Ethanol	X2	0.0045	0.0018	0.0017
i-Pentane	I5	0.8580	0.5496	0.6545
i-Propanol	X3	0.0011	0.0006	0.0006
n-Pentane	P5	1.4340	0.9186	1.0826
t-Butanol	X4	0.0034	0.0022	0.0021
2,2-Dimethylbutane	I6	0.0341	0.0261	0.0297
Cyclopentane	N5	1.4577	0.9077	0.8882
2,3-Dimethylbutane	I6	0.3488	0.2669	0.2976
2-Methylpentane	I6	3.4787	2.6618	3.0101
3-Methylpentane	I6	2.0925	1.6011	1.7804
n-Hexane	P6	6.6073	5.0549	5.6653
2,2-Dimethylpentane	I7	0.0067	0.0060	0.0065
Methylcyclopentane	N6	4.5552	3.4038	3.3581
2,4-Dimethylpentane	I7	0.2398	0.2133	0.2346
2,2,3-Trimethylbutane	I7	0.0142	0.0126	0.0135
Benzene	A6	1.0756	0.7459	0.6284
3,3-Dimethylpentane	I7	0.0238	0.0212	0.0227
Cyclohexane	N6	2.6765	2.0000	1.8989
2-Methylhexane	I7	1.2268	1.0914	1.1897
2,3-Dimethylpentane	I7	0.6607	0.5878	0.6225
1,1-Dimethylcyclopentane	N7	0.4305	0.3753	0.3677
3-Methylhexane	I7	1.7056	1.5174	1.6292
1c,3-Dimethylcyclopentane	N7	0.9851	0.8588	0.8523
1t,3-Dimethylcyclopentane	N7	0.9328	0.8132	0.8028
3-Ethylpentane	I7	0.1513	0.1346	0.1422
1t,2-Dimethylcyclopentane	N7	1.8116	1.5793	1.5537
2,2,4-Trimethylpentane	I8	0.0905	0.0918	0.0977

n-Heptane	P7	4.5816	4.0760	4.4054
1c,2-Dimethylcyclopentane	N7	0.1550	0.1351	0.1293
Methylcyclohexane	N7	4.2786	3.7301	3.5815
2,2-Dimethylhexane	I8	0.5426	0.5503	0.5847
Ethylcyclopentane	N7	0.5635	0.4913	0.4739
2,5-Dimethylhexane	I8	0.1187	0.1204	0.1283
2,2,3-Trimethylpentane	I8	0.0450	0.0456	0.0471
2,4-Dimethylhexane	I8	0.2218	0.2249	0.2384
1c,2t,4-Trimethylcyclopentane	N8	0.4595	0.4578	0.4434
3,3-Dimethylhexane	I8	0.0550	0.0558	0.0581
2,3,4-Trimethylpentane	I8	0.1045	0.1060	0.1089
2,3,3-Trimethylpentane	I8	0.0067	0.0068	0.0069
Toluene	A7	2.2190	1.8153	1.5445
2,3-Dimethylhexane	I8	0.2510	0.2546	0.2644
2-Methyl-3-ethylpentane	I8	0.1291	0.1309	0.1345
1,1,2-Trimethylcyclopentane	N8	0.0033	0.0033	0.0032
2-Methylheptane	I8	1.3373	1.3563	1.4339
4-Methylheptane	I8	0.3947	0.4003	0.4130
3-Methyl-3-ethylpentane	I8	0.0812	0.0823	0.0837
3,4-Dimethylhexane	I8	0.0819	0.0831	0.0854
1c,2c,4-Trimethylcyclopentane	N8	0.0347	0.0346	0.0332
1c,3-Dimethylcyclohexane	N8	0.0312	0.0311	0.0300
3-Methylheptane	I8	0.6213	0.6301	0.6604
1c,2t,3-Trimethylcyclopentane	N8	1.1234	1.1192	1.0743
3-Ethylhexane	I8	0.1497	0.1518	0.1574
1t,4-Dimethylcyclohexane	N8	0.5035	0.5016	0.4864
1,1-Dimethylcyclohexane	N8	0.1282	0.1277	0.1209
3c-Ethylmethylcyclopentane	N8	0.0043	0.0043	0.0041
3t-Ethylmethylcyclopentane	N8	0.1948	0.1941	0.1872
2t-Ethylmethylcyclopentane	N8	0.1650	0.1644	0.1581
1,1-Methylethylcyclopentane	N8	0.5429	0.5409	0.5123
2,2,4-Trimethylhexane	I9	0.0489	0.0557	0.0576
1t,2-Dimethylcyclohexane	N8	0.6520	0.6496	0.6193
1t,3-Dimethylcyclohexane	N8	0.0017	0.0017	0.0016
UnknownC7s	U7	0.1061	0.0944	0.1020
n-Octane	P8	2.5499	2.5861	2.7211
1c,4-Dimethylcyclohexane	N8	0.5508	0.5487	0.5184
i-Propylcyclopentane	I8	0.0720	0.0717	0.0683
2,4,4-Trimethylhexane	I9	0.0229	0.0261	0.0267
2,2,3,4-Tetramethylpentane	I9	0.0206	0.0235	0.0242
2,3,4-Trimethylhexane	I9	0.0276	0.0314	0.0322
1c,2-Dimethylcyclohexane	N8	0.2180	0.2172	0.2018
2,3,5-Trimethylhexane	I9	0.0995	0.1133	0.1161
2,2-Dimethylheptane	I9	0.0177	0.0202	0.0210
1,1,4-Trimethylcyclohexane	N9	0.9725	1.0900	1.0445
2,2,3-Trimethylhexane	I9	0.4198	0.4781	0.4848
2,4-Dimethylheptane	I9	0.0448	0.0510	0.0527
4,4-Dimethylheptane	I9	0.0516	0.0588	0.0608
Ethylcyclohexane	N8	0.5727	0.5706	0.5358
n-Propylcyclopentane	N8	0.2295	0.2286	0.2177
1c,3c,5-Trimethylcyclohexane	N9	0.0398	0.0446	0.0427
2,5-Dimethylheptane	I9	0.0712	0.0811	0.0837
3,3-Dimethylheptane	I9	0.0940	0.1070	0.1104
3,5-Dimethylheptane	I9	0.0612	0.0697	0.0719
2,6-Dimethylheptane	I9	0.0532	0.0606	0.0632
1,1,3-Trimethylcyclohexane	N9	0.1491	0.1671	0.1601
Ethylbenzene	A8	0.6894	0.6499	0.5529
1c,2t,4t-Trimethylcyclohexane	N9	0.1695	0.1900	0.1786
2,3-Dimethylheptane	I9	0.0892	0.1016	0.1035
1,3-Dimethylbenzene (m-Xylene)	A8	1.2975	1.2231	1.0465
1,4-Dimethylbenzene (p-Xylene)	A8	0.3333	0.3142	0.2697
3,4-Dimethylheptane	I9	0.0461	0.0525	0.0531
3,4-Dimethylheptane (2)	I9	0.1401	0.1595	0.1613
4-Ethylheptane	I9	0.0289	0.0329	0.0340
4-Methyloctane	I9	0.2809	0.3199	0.3283
2-Methyloctane	I9	0.3633	0.4137	0.4287
1c,2t,4c-Trimethylcyclohexane	I9	0.0472	0.0538	0.0548

3-Ethylheptane	I9	0.0695	0.0791	0.0805
3-Methyloctane	I9	0.4624	0.5266	0.5403
3,3-Diethylpentane	I9	0.0492	0.0560	0.0549
1c,2t,3-Trimethylcyclohexane	N9	0.0752	0.0843	0.0792
1,1,2-Trimethylcyclohexane	N9	0.0317	0.0355	0.0334
1,2-Dimethylbenzene (o-Xylene)	A8	0.5820	0.5486	0.4612
i-Butylcyclopentane	N9	0.2780	0.3116	0.2952
UnknownC8s	U8	0.0348	0.0353	0.0371
n-Nonane	P9	1.8002	2.0500	2.1126
1,1-Methylethylcyclohexane	N9	0.4215	0.4800	0.4961
i-Propylbenzene	A9	0.2802	0.2990	0.2561
i-Propylcyclohexane	N9	0.1041	0.1167	0.1076
2,2-Dimethyloctane	I10	0.0731	0.0923	0.0923
2,4-Dimethyloctane	I10	0.0957	0.1209	0.1209
2,6-Dimethyloctane	I10	0.0121	0.0153	0.0158
2,5-Dimethyloctane	I10	0.0449	0.0567	0.0567
n-Butylcyclopentane	N9	0.2389	0.2975	0.2755
3,3-Dimethyloctane	I10	0.1040	0.1314	0.1315
n-Propylbenzene	A9	0.4190	0.4471	0.3830
3,6-Dimethyloctane	I10	0.2408	0.3042	0.3043
3-Methyl-5-ethylheptane	I10	0.4616	0.5257	0.5358
1,3-Methylethylbenzene	A9	0.2880	0.3073	0.2611
1,4-Methylethylbenzene	A9	0.2566	0.2738	0.2326
1,3,5-Trimethylbenzene	A9	0.1265	0.1350	0.1155
2,3-Dimethyloctane	I10	0.0666	0.0841	0.0841
5-Methylnonane	I10	0.2291	0.2894	0.2922
1,2-Methylethylbenzene	A9	0.3708	0.3957	0.3344
2-Methylnonane	I10	0.0631	0.0797	0.0811
3-Ethyloctane	I10	0.0549	0.0694	0.0694
3-Methylnonane	I10	0.2469	0.3119	0.3146
1,2,4-Trimethylbenzene	A9	0.0517	0.0552	0.0466
t-Butylbenzene	A10	0.5035	0.6000	0.5126
i-Butylcyclohexane	N10	0.2229	0.2776	0.2530
1t-Methyl-2-n-propylcyclohexane	I10	0.0431	0.0491	0.0500
i-Butylbenzene	A10	0.0853	0.1017	0.0882
sec-Butylbenzene	A10	0.0525	0.0626	0.0538
UnknownC9s	U9	1.4804	1.6858	1.7372
n-Decane	P10	1.3445	1.6984	1.7208
1,2,3-Trimethylbenzene	A9	0.2462	0.2627	0.2175
1,3-Methyl-i-propylbenzene	A10	0.0968	0.1033	0.0873
1,4-Methyl-i-propylbenzene	A10	0.0900	0.0960	0.0811
Sec-Butylcyclohexane	N10	0.3520	0.4384	0.3991
1,2-Methyl-i-propylbenzene	A10	0.1652	0.1969	0.1662
3-Ethylnonane	I10	0.0376	0.0475	0.0484
1,3-Diethylbenzene	A10	0.1459	0.1739	0.1490
1,3-Methyl-n-propylbenzene	A10	0.0512	0.0610	0.0524
1,4-Diethylbenzene	A10	0.1349	0.1608	0.1381
1,4-Methyl-n-propylbenzene	A10	0.1589	0.1894	0.1633
n-Butylbenzene	A10	0.0552	0.0658	0.0565
1,3-Dimethyl-5-ethylbenzene	A10	0.1250	0.1490	0.1275
1,2-Diethylbenzene	A10	0.0477	0.0568	0.0478
1,2-Methyl-n-propylbenzene	A10	0.1219	0.1453	0.1231
1,4-Dimethyl-2-ethylbenzene	A10	0.1637	0.1951	0.1646
1,3-Dimethyl-4-ethylbenzene	A10	0.0125	0.0149	0.0126
1,2-Dimethyl-4-ethylbenzene	A10	0.2120	0.2526	0.2138
1,3-Dimethyl-2-ethylbenzene	A10	0.1295	0.1543	0.1283
1t,2c,4-Trimethylcyclopentane	A10	0.5498	0.5478	0.5420
1,2-Dimethyl-3-ethylbenzene	A10	0.0912	0.1087	0.0902
1,2-Ethyl-i-propylbenzene	A10	0.1117	0.1331	0.1124
1,4-Methyl-t-butylbenzene	A11	0.2115	0.2520	0.2128
UnknownC10s	U10	2.4466	3.0907	3.1314
n-Undecane	P11	1.1780	1.6349	1.6335
1,4-Ethyl-i-propylbenzene	A11	0.0584	0.0696	0.0588
1,2,4,5-Tetramethylbenzene	A11	0.1342	0.1599	0.1336
1,2-Methyl-n-butylbenzene	A11	0.0788	0.0939	0.0793
1,2,3,5-Tetramethylbenzene	A11	0.1452	0.1730	0.1439
1,2-Methyl-t-butylbenzene	A11	0.1044	0.1244	0.1050

5-Methylindan	A11	0.0224	0.0339	0.0335
4-Methylindan	A11	0.0091	0.0138	0.0136
1,2-Ethyl-n-propylbenzene	A11	0.1767	0.2106	0.1778
2-Methylindan	A11	0.0916	0.1385	0.1369
1,3-Methyl-n-butylbenzene	A11	0.0899	0.1071	0.0904
1,3-Di-i-propylbenzene	A11	0.0923	0.1100	0.0929
sec-Pentylbenzene	A11	0.1134	0.1351	0.1141
n-Pentylbenzene	A11	0.0668	0.0879	0.0758
1t-M-2-(4MP)cyclopentane	P12	0.0870	0.1316	0.1301
1,2-Di-n-propylbenzene	A11	0.1251	0.1491	0.1259
1,4-Di-i-propylbenzene	A11	0.2157	0.2570	0.2170
Tetrahydronaphthalene	A10	0.0293	0.0349	0.0295
t-Decahydronaphthalene	A10	0.1410	0.1680	0.1418
Naphthalene	A10	0.1177	0.1339	0.1130
1-t-Butyl-3,5-dimethylbenzene	A12	0.0738	0.0880	0.0743
1,4-Ethyl-t-butylbenzene	A11	0.1046	0.1247	0.1053
UnknownC11s	U11	1.6366	2.2713	2.2693
n-Dodecane	P12	1.0142	1.5339	1.5157
1,3-Di-n-propylbenzene	A12	0.0879	0.1048	0.0885
1,3,5-Triethylbenzene	A12	0.0377	0.0402	0.0344
1,2,4-Triethylbenzene	A12	0.3512	0.3748	0.3166
1,4-Methyl-n-pentylbenzene	A12	0.0632	0.0753	0.0636
n-Hexylbenzene	A12	0.1413	0.2036	0.1757
1,2,3,4,5-Pentamethylbenzene	A13	0.2450	0.2920	0.2465
2-Methylnaphthalene	A11	0.2857	0.3607	0.3045
1-Methylnaphthalene	A11	0.2136	0.2697	0.1957
UnknownC12s	U12	1.3453	2.0346	2.0105
n-Tridecane	P13	0.7808	1.2781	1.2480
UnknownC13s	U13	1.3504	2.2104	2.1584
n-Tetradecane	P14	0.4464	0.7863	0.7662
UnknownC14s	U14	1.3680	2.4097	2.3482
n-Pentadecane	P15	0.1845	0.3480	0.3352
UnknownC15s	U15	1.4667	2.7662	2.6647
n-Hexadecane	P16	0.1119	0.2250	0.2153
UnknownC16s	U16	0.4852	0.9755	0.9336
n-Heptadecane	P17	0.1385	0.2957	0.2821
UnknownC17s	U17	0.1582	0.3378	0.3223
n-Octadecane	P18	0.0096	0.0217	0.0206
UnknownC18s	U18	0.1818	0.4108	0.3908
n-Nonadecane	P19	0.0021	0.0050	0.0047
UnknownC19s	U19	0.0202	0.0482	0.0456
n-Eicosane	P20	0.0004	0.0010	0.0009
UnknownC20s	U20	0.0023	0.0058	0.0055
TOTAL		100.0000	100.0000	100.0000

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

303-637-0150

EXTENDED NATURAL GAS ANALYSIS (*DHA)

MAIN PAGE

PROJECT NO. :	201406094	ANALYSIS NO. :	05
COMPANY NAME :	CARRIZO OIL & GAS	ANALYSIS DATE:	JUNE 18, 2014
ACCOUNT NO. :		SAMPLE DATE :	JUNE 13, 2014
PRODUCER :		CYLINDER NO. :	0373
LEASE NO. :		SAMPLED BY :	JOHN MOSER-EMPACT
NAME/DESCRIP :	SALES GAS @ 13:30 BRINGELSON RANCH 8-20-9-58		
FIELD DATA		SAMPLE TEMP. :	112
SAMPLE PRES. :	103	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; PROBE; LENGTH OF H2S STAIN @ 4.0 PPM (1-7 PPM) @ 13:35		

COMPONENT	MOLE %	MASS %	GPM @ 14.650	GPM @ 14.730
ALCOHOLS	0.0002	0.0006		
HELIUM	0.01	0.00	---	---
HYDROGEN	0.01	0.00	---	---
OXYGEN/ARGON	0.01	0.01	---	---
NITROGEN	0.97	1.07	---	---
CARBON DIOXIDE	2.38	4.11	---	---
METHANE	64.99080	40.90970	---	---
ETHANE	13.0752	15.4270	3.4944	3.5135
PROPANE	11.1291	19.2561	3.0636	3.0803
I-BUTANE	1.0887	2.4829	0.3556	0.3576
N-BUTANE	3.7053	8.4504	1.1671	1.1735
I-PENTANE	0.7496	2.1162	0.2684	0.2700
N-PENTANE	0.8647	2.4480	0.3136	0.3153
HEXANES PLUS	1.0164	3.7191	0.4114	0.4136
TOTALS	100.00000	100.00000	9.0741	9.1238

BTEX COMPONENTS	**MOLE%**	**WT%**
BENZENE	0.0283	0.0868
TOLUENE	0.0206	0.0745
ETHYLBENZENE	0.0029	0.0121
XYLENES	0.0069	0.0288
TOTAL BTEX	0.0587	0.2022

	BTU @	14.650	14.730
LOW	NET DRY REAL :	1313.4 **/scf**	1320.6 **/scf**
	NET WET REAL :	1290.4 **/scf**	1297.6 **/scf**
HIGH	GROSS DRY REAL :	1441.6 **/scf**	1449.5 **/scf**
	GROSS WET REAL :	1416.4 **/scf**	1424.3 **/scf**
	NET DRY REAL :	19580.8 **/lb**	19687.8 **/lb**
	GROSS DRY REAL :	21491.1 **/lb**	21608.5 **/lb**
	RELATIVE DENSITY (AIR=1):		0.8789
	COMPRESSIBILITY FACTOR :		0.99505

(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

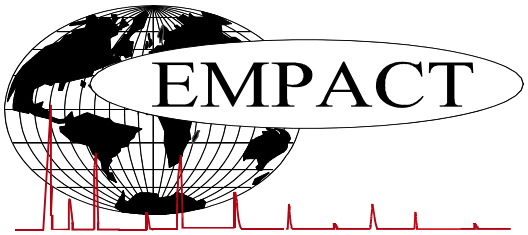
303-637-0150

EXTENDED NATURAL GAS ANALYSIS (*DHA)

GLYCALC INFORMATION

PROJECT NO. :	201406094	ANALYSIS NO. :	05
COMPANY NAME :	CARRIZO OIL & GAS	ANALYSIS DATE:	JUNE 18, 2014
ACCOUNT NO. :		SAMPLE DATE :	JUNE 13, 2014
PRODUCER :		CYLINDER NO. :	0373
LEASE NO. :		SAMPLED BY :	JOHN MOSER-EMPACT
NAME/DESCRIP :	SALES GAS @ 13:30 BRINGELSON RANCH 8-20-9-58		
FIELD DATA		SAMPLE TEMP. :	112
SAMPLE PRES. :	103	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; PROBE; LENGTH OF H2S STAIN @ 4.0 PPM (1-7 PPM) @ 13:35		

Componet	Mole %	Wt %
Helium	0.01	0.00
Hydrogen	0.01	0.00
Carbon Dioxide	2.38	4.11
Nitrogen	0.97	1.07
Methane	64.99080	40.90970
Ethane	13.0752	15.4270
Propane	11.1291	19.2561
Isobutane	1.0887	2.4829
n-Butane	3.7053	8.4504
Isopentane	0.6754	1.9120
n-Pentane	0.8647	2.4480
Cyclopentane	0.0742	0.2042
n-Hexane	0.1946	0.6580
Cyclohexane	0.0529	0.1747
Other Hexanes	0.3484	1.1688
Heptanes	0.1895	0.7395
Methycyclohexane	0.0467	0.1799
2,2,4 Trimethylpentane	0.0001	0.0004
Benzene	0.0283	0.0868
Toluene	0.0206	0.0745
Ethylbenzene	0.0029	0.0121
Xylenes	0.0069	0.0288
C8+ Heavies	0.1255	0.5956
Subtotal	99.98980	99.98940
Oxygen/Argon	0.01	0.01
Alcohols	0.0002	0.0006
Total	100.00000	100.00000



EXTENDED NATURAL GAS ANALYSIS (*DHA)

DHA COMPONENT LIST

PROJECT NO. :	201406094	ANALYSIS NO. :	05
COMPANY NAME :	CARRIZO OIL & GAS	ANALYSIS DATE:	JUNE 18, 2014
ACCOUNT NO. :		SAMPLE DATE :	JUNE 13, 2014
PRODUCER :		CYLINDER NO. :	0373
LEASE NO. :		SAMPLED BY :	JOHN MOSER-EMPACT
NAME/DESCRIP :	SALES GAS @ 13:30 BRINGELSON RANCH 8-20-9-58		
FIELD DATA		SAMPLE TEMP. :	112
SAMPLE PRES. :	103	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; PROBE; LENGTH OF H2S STAIN @ 4.0 PPM (1-7 PPM) @ 13:35		

COMPONENT	PIANO #	MOLE %	MASS %	GPM @ 14.650	GPM @ 14.730
Helium	---	0.01	0.00	---	---
Hydrogen	---	0.01	0.00	---	---
Oxygen/Argon	---	0.01	0.01	---	---
Nitrogen	---	0.97	1.07	---	---
Carbon Dioxide	---	2.38	4.11	---	---
Methane	P1	64.99080	40.90970	---	---
Ethane	P2	13.0752	15.4270	3.494	3.514
Propane	P3	11.1291	19.2561	3.064	3.080
i-Butane	I4	1.0887	2.4829	0.356	0.358
n-Butane	P4	3.7053	8.4504	1.167	1.174
2,2-Dimethylpropane	I5	0.0028	0.0079	0.001	0.001
i-Pentane	I5	0.6726	1.9041	0.245	0.247
n-Pentane	P5	0.8645	2.4474	0.314	0.315
t-Butanol	X4	0.0002	0.0006	0.000	0.000
2,2-Dimethylbutane	I6	0.0021	0.0071	0.001	0.001
Cyclopentane	N5	0.0742	0.2042	0.022	0.022
2,3-Dimethylbutane	I6	0.0132	0.0447	0.005	0.005
2-Methylpentane	I6	0.1408	0.4761	0.058	0.058
3-Methylpentane	I6	0.0742	0.2509	0.030	0.030
UnknownC5s	U5	0.0002	0.0006	0.000	0.000
n-Hexane	P6	0.1946	0.6580	0.080	0.081
2,2-Dimethylpentane	I7	0.0002	0.0008	0.000	0.000
Methylcyclopentane	N6	0.1181	0.3900	0.042	0.042
2,4-Dimethylpentane	I7	0.0049	0.0193	0.002	0.002
2,2,3-Trimethylbutane	I7	0.0001	0.0004	0.000	0.000
Benzene	A6	0.0283	0.0868	0.008	0.008
3,3-Dimethylpentane	I7	0.0003	0.0012	0.000	0.000
Cyclohexane	N6	0.0529	0.1747	0.018	0.018
2-Methylhexane	I7	0.0214	0.0841	0.010	0.010
2,3-Dimethylpentane	I7	0.0095	0.0374	0.004	0.004
1,1-Dimethylcyclopentane	N7	0.0076	0.0293	0.003	0.003
3-Methylhexane	I7	0.0256	0.1007	0.012	0.012
1c,3-Dimethylcyclopentane	N7	0.0157	0.0605	0.007	0.007
1t,3-Dimethylcyclopentane	N7	0.0138	0.0532	0.006	0.006
3-Ethylpentane	I7	0.0018	0.0071	0.001	0.001
1t,2-Dimethylcyclopentane	N7	0.0269	0.1036	0.012	0.012
2,2,4-Trimethylpentane	I8	0.0001	0.0004	0.000	0.000
n-Heptane	P7	0.0537	0.2111	0.025	0.025
1c,2-Dimethylcyclopentane	N7	0.0020	0.0077	0.001	0.001
Methylcyclohexane	N7	0.0467	0.1799	0.019	0.019
2,2-Dimethylhexane	I8	0.0048	0.0215	0.002	0.002
Ethylcyclopentane	N7	0.0059	0.0227	0.002	0.002

EMPACT Analytical Systems, Inc 365 S. Main Street, Brighton, CO 80601 303-637-0150

2,5-Dimethylhexane	I8	0.0008	0.0036	0.000	0.000
2,2,3-Trimethylpentane	I8	0.0005	0.0022	0.000	0.000
2,4-Dimethylhexane	I8	0.0021	0.0094	0.001	0.001
1c,2t,4-Trimethylcyclopentane	N8	0.0042	0.0185	0.002	0.002
3,3-Dimethylhexane	I8	0.0003	0.0013	0.000	0.000
1t,2c,4-Trimethylcyclopentane	N8	0.0047	0.0207	0.002	0.002
2,3,4-Trimethylpentane	I8	0.0007	0.0031	0.000	0.000
Toluene	A7	0.0206	0.0745	0.007	0.007
2,3-Dimethylhexane	I8	0.0019	0.0085	0.001	0.001
2-Methyl-3-ethylpentane	I8	0.0009	0.0040	0.000	0.000
2-Methylheptane	I8	0.0097	0.0435	0.005	0.005
4-Methylheptane	I8	0.0026	0.0117	0.001	0.001
3-Methyl-3-ethylpentane	I8	0.0002	0.0009	0.000	0.000
3,4-Dimethylhexane	I8	0.0004	0.0018	0.000	0.000
1c,2c,4-Trimethylcyclopentane	N8	0.0002	0.0009	0.000	0.000
1c,3-Dimethylcyclohexane	N8	0.0002	0.0009	0.000	0.000
3-Methylheptane	I8	0.0041	0.0184	0.002	0.002
1c,2t,3-Trimethylcyclopentane	N8	0.0073	0.0321	0.004	0.004
3-Ethylhexane	I8	0.0012	0.0054	0.001	0.001
1t,4-Dimethylcyclohexane	N8	0.0027	0.0119	0.001	0.001
1,1-Dimethylcyclohexane	N8	0.0008	0.0035	0.000	0.000
3t-Ethylmethylcyclopentane	N8	0.0012	0.0053	0.001	0.001
2t-Ethylmethylcyclopentane	N8	0.0010	0.0044	0.001	0.001
1,1-Methylethylcyclopentane	N8	0.0033	0.0145	0.002	0.002
2,2,4-Trimethylhexane	I9	0.0003	0.0015	0.000	0.000
1t,2-Dimethylcyclohexane	N8	0.0036	0.0159	0.002	0.002
UnknownC7s	U7	0.0001	0.0004	0.000	0.000
n-Octane	P8	0.0131	0.0587	0.007	0.007
1c,4-Dimethylcyclohexane	N8	0.0030	0.0132	0.002	0.002
i-Propylcyclopentane	I8	0.0002	0.0009	0.000	0.000
2,4,4-Trimethylhexane	I9	0.0001	0.0005	0.000	0.000
2,3,5-Trimethylhexane	I9	0.0003	0.0015	0.000	0.000
2,2,3,4-Tetramethylpentane	I9	0.0001	0.0005	0.000	0.000
2,3,4-Trimethylhexane	I9	0.0001	0.0005	0.000	0.000
1c,2-Dimethylcyclohexane	N8	0.0007	0.0031	0.000	0.000
2,2-Dimethylheptane	I9	0.0001	0.0005	0.000	0.000
1,1,4-Trimethylcyclohexane	N9	0.0041	0.0203	0.002	0.002
2,2,3-Trimethylhexane	I9	0.0015	0.0075	0.001	0.001
2,4-Dimethylheptane	I9	0.0005	0.0025	0.000	0.000
4,4-Dimethylheptane	I9	0.0002	0.0010	0.000	0.000
Ethylcyclohexane	N8	0.0022	0.0097	0.001	0.001
n-Propylcyclopentane	N8	0.0009	0.0040	0.000	0.000
1c,3c,5-Trimethylcyclohexane	N9	0.0001	0.0005	0.000	0.000
2,5-Dimethylheptane	I9	0.0003	0.0015	0.000	0.000
3,3-Dimethylheptane	I9	0.0003	0.0015	0.000	0.000
3,5-Dimethylheptane	I9	0.0002	0.0010	0.000	0.000
2,6-Dimethylheptane	I9	0.0002	0.0010	0.000	0.000
1,1,3-Trimethylcyclohexane	N9	0.0002	0.0010	0.000	0.000
Ethylbenzene	I8	0.0029	0.0121	0.001	0.001
1c,2t,4t-Trimethylcyclohexane	N9	0.0009	0.0045	0.001	0.001
2,3-Dimethylheptane	I9	0.0007	0.0035	0.000	0.000
1,3-Dimethylbenzene (m-Xylene)	A8	0.0029	0.0121	0.001	0.001
1,4-Dimethylbenzene (p-Xylene)	A8	0.0021	0.0088	0.001	0.001
3,4-Dimethylheptane	I9	0.0003	0.0015	0.000	0.000
3,4-Dimethylheptane (2)	I9	0.0005	0.0025	0.000	0.000
4-Ethylheptane	I9	0.0001	0.0005	0.000	0.000
4-Methyloctane	I9	0.0009	0.0045	0.001	0.001
2-Methyloctane	I9	0.0009	0.0045	0.001	0.001
1c,2t,3-Trimethylcyclohexane	N9	0.0003	0.0015	0.000	0.000
3-Ethylheptane	I9	0.0003	0.0015	0.000	0.000
3-Methyloctane	I9	0.0014	0.0071	0.001	0.001
3,3-Diethylpentane	I9	0.0001	0.0005	0.000	0.000
1,2-Dimethylbenzene (o-Xylene)	A8	0.0019	0.0079	0.001	0.001
i-Butylcyclopentane	N9	0.0010	0.0049	0.001	0.001
UnknownC8s	U8	0.0001	0.0004	0.000	0.000
n-Nonane	P9	0.0042	0.0212	0.002	0.002
1,1-Methylethylcyclohexane	N9	0.0005	0.0025	0.000	0.000
i-Propylbenzene	A9	0.0010	0.0047	0.000	0.000

i-Propylcyclohexane	N9	0.0002	0.0010	0.000	0.000
2,2-Dimethyloctane	I10	0.0002	0.0011	0.000	0.000
2,4-Dimethyloctane	I10	0.0002	0.0011	0.000	0.000
2,5-Dimethyloctane	I10	0.0001	0.0006	0.000	0.000
n-Butylcyclopentane	N9	0.0008	0.0040	0.000	0.000
3,3-Dimethyloctane	I10	0.0002	0.0011	0.000	0.000
n-Propylbenzene	A9	0.0008	0.0038	0.000	0.000
3,6-Dimethyloctane	I10	0.0005	0.0028	0.000	0.000
3-Methyl-5-ethylheptane	I10	0.0007	0.0039	0.000	0.000
1,3-Methylethylbenzene	A9	0.0006	0.0028	0.000	0.000
1,4-Methylethylbenzene	A9	0.0003	0.0014	0.000	0.000
1,3,5-Trimethylbenzene	A9	0.0003	0.0014	0.000	0.000
2,3-Dimethyloctane	I10	0.0001	0.0006	0.000	0.000
5-Methylnonane	I10	0.0004	0.0022	0.000	0.000
1,2-Methylethylbenzene	A9	0.0008	0.0038	0.000	0.000
2-Methylnonane	I10	0.0001	0.0006	0.000	0.000
3-Ethyloctane	I10	0.0001	0.0006	0.000	0.000
3-Methylnonane	I10	0.0003	0.0017	0.000	0.000
1,2,4-Trimethylbenzene	A9	0.0001	0.0005	0.000	0.000
t-Butylbenzene	A10	0.0007	0.0037	0.000	0.000
i-Butylcyclohexane	N10	0.0003	0.0017	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	0.0040	0.0201	0.002	0.002
n-Decane	P10	0.0014	0.0078	0.001	0.001
1,2,3-Trimethylbenzene	A9	0.0003	0.0014	0.000	0.000
1,3-Methyl-i-propylbenzene	A10	0.0001	0.0005	0.000	0.000
1,4-Methyl-i-propylbenzene	A10	0.0001	0.0005	0.000	0.000
Sec-Butylcyclohexane	A10	0.0004	0.0022	0.000	0.000
1,2-Methyl-i-propylbenzene	A10	0.0002	0.0011	0.000	0.000
1,3-Diethylbenzene	A10	0.0002	0.0011	0.000	0.000
1,4-Diethylbenzene	A10	0.0002	0.0011	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	0.0001	0.0006	0.000	0.000
1,2-Methyl-n-propylbenzene	A10	0.0001	0.0005	0.000	0.000
1,4-Dimethyl-2-ethylbenzene	A10	0.0001	0.0005	0.000	0.000
1,2-Dimethyl-4-ethylbenzene	A10	0.0002	0.0011	0.000	0.000
1,3-Dimethyl-2-ethylbenzene	A10	0.0001	0.0005	0.000	0.000
1,2-Dimethyl-3-ethylbenzene	A10	0.0001	0.0005	0.000	0.000
1,4-Methyl-t-butylbenzene	A11	0.0001	0.0006	0.000	0.000
UnknownC10s	U10	0.0031	0.0173	0.002	0.002
n-Undecane	P11	0.0007	0.0043	0.000	0.000
1,2,4,5-Tetramethylbenzene	A11	0.0001	0.0005	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
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-Di-i-propylbenzene	A11	0.0001	0.0006	0.000	0.000
Naphthalene	A10	0.0001	0.0005	0.000	0.000
UnknownC11s	U11	0.0015	0.0092	0.001	0.001
n-Dodecane	P12	0.0003	0.0020	0.000	0.000
1,2,4-Triethylbenzene	A12	0.0001	0.0006	0.000	0.000
2-Methylnaphthalene	A11	0.0001	0.0006	0.000	0.000
1-Methylnaphthalene	A11	0.0001	0.0006	0.000	0.000
UnknownC12s	U12	0.0005	0.0031	0.000	0.000
n-Tridecane	P13	0.0001	0.0007	0.000	0.000
UnknownC13s	U13	0.0003	0.0022	0.000	0.000
n-Tetradecane	P14	0.0001	0.0008	0.000	0.000
UnknownC14s	U14	0.0002	0.0016	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
UnknownC18s	U18	0.0001	0.0010	0.000	0.000
UnknownC20s	U20	0.0001	0.0011	0.000	0.000
TOTAL		100.00000	100.00000	9.0741	9.1238

BTEX COMPONENTS	**MOLE%**	**WT%**	**BTU @**	14.650	14.730

EMPACT Analytical Systems, Inc 365 S. Main Street, Brighton, CO 80601 303-637-0150

BENZENE	0.0283	0.0868
TOLUENE	0.0206	0.0745
ETHYLBENZENE	0.0029	0.0121
XYLENES	0.0069	0.0288
TOTAL BTEX	0.0587	0.2022

LOW	NET DRY REAL :	1313.4 **/scf**	1320.6 **/scf**
	NET WET REAL :	1290.4 **/scf**	1297.6 **/scf**
HIGH	GROSS DRY REAL :	1441.6 **/scf**	1449.5 **/scf**
	GROSS WET REAL :	1416.4 **/scf**	1424.3 **/scf**
	NET DRY REAL :	19580.8 **/lb**	19687.8 **/lb**
	GROSS DRY REAL :	21491.1 **/lb**	21608.5 **/lb**

RELATIVE DENSITY (AIR=1): 0.8789

COMPRESSIBILITY FACTOR : 0.99505

(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 RESPONSIBLITY OF THE USER. EMPACT ANALYTICAL SYSTEMS, ASSUMES NO RESPONSIBLITY FOR ACCURACY OF THE REPORTED INFORMATION NOR ANY CONSEQUENCES OF IT'S APPLICATION.

EMPACT Analytical Systems, Inc 365 S. Main Street, Brighton, CO 80601 303-637-0150

CRUDE OIL ASSAY

PROJECT NO. :	201406094	ANALYSIS NO. :	06
COMPANY NAME :	CARRIZO OIL & GAS	ANALYSIS DATE:	JUNE 18, 2014
ACCOUNT NO. :		SAMPLE DATE :	JUNE 13, 2014
PRODUCER :		CYLINDER NO. :	1L GLASS JAR
LEASE NO. :		SAMPLED BY :	JOHN MOSER
NAME/DESCRIP :	PRODUCTION TANK @ 14:05 BRINGELSON RANCH @ 8-20-9-58		EMPACT
FIELD DATA		SAMPLE TEMP. :	101
SAMPLE PRES. :		AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT		

SPECIFICATION	TEST METHOD	UNITS	RESULTS
API GRAVITY		API 60/60	35.8
RVP @100 DEG F	D323	PSIG	7.2
TOTAL SULFUR	D2622	WT %	0.319
TOTAL CHLORIDE	D4929	ug/g	N/A
ORGANIC CHLORIDE	D4929	ug/g	N/A
FLASH POINT	D93	° F	N/A
HEATING VALUE	D4809	BTU/ LB	N/A
VISUAL APPEARANCE			DARK RED/BROWN
BS&W	D96		
Crude Oil		VOL %	N/A
Water		VOL %	N/A
Emulsion		VOL %	N/A
Sediment		VOL %	N/A
DISTILLATION:	D86		
INITIAL POINT		DEG F	N/A
50%		DEG F	N/A
90%		DEG F	N/A
END POINT		DEG F	N/A
DISTILLATION:	@TEMP D445		
Average Centipoise	20°C		N/A
Average Centipoise	30°C		N/A
Average Centipoise	80°C		N/A
Kinetic Viscosity	20°C	cSt (mm2/s)	N/A
Kinetic Viscosity	30°C	cSt (mm2/s)	N/A
Kinetic Viscosity	80°C	cSt (mm2/s)	N/A

ND: NOT DETECTED

N/A: NO TEST PREFORMED FOR THIS PARAMETER