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

303-637-0150

COPY

EXTENDED NATURAL GAS LIQUID ANALYSIS (*DHA)

MAIN PAGE

PROJECT NO. :	201408038	ANALYSIS NO. :	03
COMPANY NAME :	MULL DRILLING	ANALYSIS DATE:	AUGUST 8, 2014
ACCOUNT NO. :		SAMPLE DATE :	AUGUST 6, 2014
PRODUCER :		CYLINDER NO. :	27842
LEASE NO. :		SAMPLED BY :	JOHN MOSER
NAME/DESCRIP :	OIL TREATER 8:40 BRAUKMANN FARMS C		EMPACT
FIELD DATA		SAMPLE TEMP. :	140
SAMPLE PRES. :	56	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; NO PROBE; SOME WATER IN SAMPLE - EMPACT		

COMPONENT	MOLE %	MASS %	VOL %
ALCOHOLS	0.0013	0.0008	0.0007
NITROGEN (AIR)	0.0050	0.0012	0.0011
CARBON DIOXIDE	0.0580	0.0223	0.0202
METHANE	0.1170	0.0164	0.0405
ETHANE	0.2800	0.0737	0.1530
PROPANE	1.0440	0.4029	0.5877
I-BUTANE	0.3380	0.1719	0.2259
N-BUTANE	1.5690	0.7981	1.0107
I-PENTANE	0.7338	0.4634	0.5494
N-PENTANE	1.2330	0.7786	0.9124
HEXANES PLUS	94.6209	97.2707	96.4984
TOTALS	100.0000	100.0000	100.0000

BTEX COMPONENTS	MOLE%	MASS%
BENZENE	0.8054	0.5506
TOLUENE	1.0366	0.8359
ETHYLBENZENE	0.1882	0.1749
XYLENE	1.3842	1.2862
TOTAL BTEX	3.4144	2.8476

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

	TOTAL SAMPLE	C6+ FRACTION	
Specific Gravity (H2O=1) =	0.7396	0.7446	60/60
API Gravity =	59.82	58.53	60/60
Molecular Weight =	114.26	117.867	
Absolute Density =	6.17	6.22	LBS/GAL
Heating Value Liq. Idl Gas=	125761	126815	BTU/GAL
Vapor/Liquid =	20.58	20.14	CUFT/GAL
Vapor Pressure =	13.16	1.78	PSIA @100 F

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

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E & P TANK / GLYCALC INFORMATION

PROJECT NO. :	201408038	ANALYSIS NO. :	03
COMPANY NAME :	MULL DRILLING	ANALYSIS DATE:	AUGUST 8, 2014
ACCOUNT NO. :		SAMPLE DATE :	AUGUST 6, 2014
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LEASE NO. :		SAMPLED BY :	JOHN MOSER
NAME/DESCRIP :	OIL TREATER 8:40		EMPACT
	BRAUKMANN FARMS C		
FIELD DATA		SAMPLE TEMP. :	140
SAMPLE PRES. :	56	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; NO PROBE; SOME WATER IN SAMPLE - EMPACT		

COMPONENT	Mole %		Wt %		LV %	
CARBON DIOXIDE	0.0580		0.0223		0.0202	
NITROGEN (AIR)	0.0050		0.0012		0.0011	
METHANE	0.1170		0.0164		0.0405	
ETHANE	0.2800		0.0737		0.1530	
PROPANE	1.0440		0.4029		0.5877	
I-BUTANE	0.3380		0.1719		0.2259	
N-BUTANE	1.5690		0.7981		1.0107	
I-PENTANE	0.7338		0.4634		0.5494	
N-PENTANE	1.2330		0.7786		0.9124	
CYCLOPENTANE (N-C5)	0.7890		0.4843		0.4712	
N-HEXANE	7.8436		5.9153		6.5909	
CYCLOHEXANE (OTHER C6)	3.8099		2.8062		2.6491	
OTHER HEXANES	10.0493		7.5172		8.0422	
OTHER HEPTANES	15.0540		13.1150		13.6768	
METHYLCYCLOHEXANE (OTHER C7)	5.8205		5.0019		4.7752	
2,2,4 TRIMETHYLPENTANE	1.0306		0.8857		0.8694	
BENZENE	0.8054		0.5506		0.4612	
TOLUENE	1.0366		0.8359		0.7071	
ETHYLBENZENE	0.1882		0.1749		0.1479	
XYLENES	1.3842		1.2862		1.0898	
OTHER OCTANES	12.4884		12.5235		12.5789	
OCTANES PLUS	----	49.4126	----	61.0443	----	59.1247
NONANES	9.8374		10.9311		10.7329	
DECANES PLUS	24.4838		35.2429		33.7058	
SUB TOTAL	99.9987		99.9992		99.9993	
ALCOHOLS	0.0013		0.0008		0.0007	
TOTAL	100.0000		100.0000		100.0000	

API Gravity	=	**59.82**	60/60
Vapor Pressure	=	**13.16**	PSIA & 100 F
Average Molecular Weight of Decanes plus	=	**164.47**	
Average Specific Gravity of Decanes plus	=	**0.7780**	

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BY CARBON NUMBER

PROJECT NO. :	201408038	ANALYSIS NO. :	03
COMPANY NAME :	MULL DRILLING	ANALYSIS DATE:	AUGUST 8, 2014
ACCOUNT NO. :		SAMPLE DATE :	AUGUST 6, 2014
PRODUCER :		CYLINDER NO. :	27842
LEASE NO. :		SAMPLED BY :	JOHN MOSER
NAME/DESCRIP :	OIL TREATER 8:40		EMPACT
	BRAUKMANN FARMS C		
FIELD DATA		SAMPLE TEMP. :	140
SAMPLE PRES. :	56	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; NO PROBE; SOME WATER IN SAMPLE - EMPACT		

COMPONENT / CARBON NUMBER	MOLE%	MASS %	VOLUME %
ALCOHOLS	0.0013	0.0008	0.0007
NITROGEN	0.0050	0.0012	0.0011
CARBON DIOXIDE	0.0580	0.0223	0.0202
C1	0.1170	0.0164	0.0405
C2	0.2800	0.0737	0.1530
C3	1.0440	0.4029	0.5877
C4	1.9070	0.9700	1.2366
C5	2.7558	1.7263	1.9330
C6	22.5082	16.7893	17.7434
C7	21.9111	18.9528	19.1591
C8	15.0914	14.8703	14.6860
C9	9.8374	10.9311	10.7329
C10	8.7217	10.4698	10.0732
C11	4.6295	6.0575	5.6930
C12	2.9379	4.1169	3.9377
C13	2.5883	4.0555	3.8951
C14	2.1108	3.6650	3.5511
C15	1.5814	2.9400	2.8160
C16	1.1108	2.2014	2.0949
C17	0.4820	1.0144	0.9623
C18	0.2684	0.5978	0.5654
C19	0.0530	0.1246	0.1171
C20	0.0000	0.0000	0.0000
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

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EXTENDED NATURAL GAS LIQUID ANALYSIS (*DHA)

DHA COMPONENT LIST

PROJECT NO. :	201408038	ANALYSIS NO. :	03
COMPANY NAME :	MULL DRILLING	ANALYSIS DATE:	AUGUST 8, 2014
ACCOUNT NO. :		SAMPLE DATE :	AUGUST 6, 2014
PRODUCER :		CYLINDER NO. :	27842
LEASE NO. :		SAMPLED BY :	JOHN MOSER
NAME/DESCRIP :	OIL TREATER 8:40 BRAUKMANN FARMS C		EMPACT
FIELD DATA		SAMPLE TEMP. :	140
SAMPLE PRES. :	56	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; NO PROBE; SOME WATER IN SAMPLE - EMPACT		

COMPONENT	PIANO #	MOLE %	MASS %	VOL %
Nitrogen	NHC	0.0050	0.0012	0.0011
Carbon Dioxide	NHC	0.0580	0.0223	0.0202
Methane	P1	0.1170	0.0164	0.0405
Ethane	P2	0.2800	0.0737	0.1530
Propane	P3	1.0440	0.4029	0.5877
i-Butane	I4	0.3380	0.1719	0.2259
n-Butane	P4	1.5690	0.7981	1.0107
2,2-Dimethylpropane	I5	0.0218	0.0138	0.0171
i-Pentane	I5	0.7120	0.4496	0.5323
n-Pentane	P5	1.2330	0.7786	0.9124
t-Butanol	X4	0.0013	0.0008	0.0007
2,2-Dimethylbutane	I6	0.0663	0.0500	0.0566
Cyclopentane	N5	0.7890	0.4843	0.4712
2,3-Dimethylbutane	I6	0.3977	0.3000	0.3327
2-Methylpentane	I6	3.7532	2.8308	3.1830
3-Methylpentane	I6	2.2972	1.7327	1.9158
n-Hexane	P6	7.8436	5.9153	6.5909
2,2-Dimethylpentane	I7	0.0371	0.0325	0.0352
Methylcyclopentane	N6	3.5349	2.6037	2.5541
2,4-Dimethylpentane	I7	0.2044	0.1792	0.1960
2,2,3-Trimethylbutane	I7	0.0326	0.0286	0.0304
Benzene	A6	0.8054	0.5506	0.4612
3,3-Dimethylpentane	I7	0.0219	0.0192	0.0204
Cyclohexane	N6	3.8099	2.8062	2.6491
2-Methylhexane	I7	1.2080	1.0594	1.1483
2,3-Dimethylpentane	I7	0.5190	0.4551	0.4792
1,1-Dimethylcyclopentane	N7	0.5894	0.5065	0.4934
3-Methylhexane	I7	1.8407	1.6142	1.7233
1c,3-Dimethylcyclopentane	N7	1.0837	0.9313	0.9190
1t,3-Dimethylcyclopentane	N7	1.0306	0.8857	0.8694
3-Ethylpentane	I7	0.1119	0.0981	0.1030
1t,2-Dimethylcyclopentane	N7	1.8021	1.5486	1.5148
2,2,4-Trimethylpentane	I8	0.0914	0.0914	0.0967
n-Heptane	P7	6.0253	5.2839	5.6783
1c,2-Dimethylcyclopentane	N7	0.1406	0.1208	0.1150
Methylcyclohexane	N7	5.8205	5.0019	4.7752
2,2-Dimethylhexane	I8	0.9143	0.9141	0.9657
Ethylcyclopentane	N7	0.2730	0.2346	0.2250
2,5-Dimethylhexane	I8	0.0806	0.0806	0.0854
2,2,3-Trimethylpentane	I8	0.0418	0.0418	0.0429
2,4-Dimethylhexane	I8	0.1824	0.1824	0.1923
1c,2t,4-Trimethylcyclopentane	N8	0.5610	0.5509	0.5305

3,3-Dimethylhexane	I8	0.0771	0.0771	0.0798
2,3,4-Trimethylpentane	I8	0.0226	0.0226	0.0231
2,3,3-Trimethylpentane	I8	0.0016	0.0016	0.0016
Toluene	A7	1.0366	0.8359	0.7071
2,3-Dimethylhexane	I8	0.2526	0.2525	0.2608
2-Methyl-3-ethylpentane	I8	0.0699	0.0699	0.0714
1,1,2-Trimethylcyclopentane	N8	0.0076	0.0075	0.0071
2-Methylheptane	I8	1.3955	1.3951	1.4665
4-Methylheptane	I8	0.3644	0.3643	0.3737
3-Methyl-3-ethylpentane	I8	0.1177	0.1177	0.1190
3,4-Dimethylhexane	I8	0.0835	0.0835	0.0853
1c,2c,4-Trimethylcyclopentane	N8	0.0432	0.0424	0.0404
1c,3-Dimethylcyclohexane	N8	0.0453	0.0445	0.0427
3-Methylheptane	I8	0.4735	0.4734	0.4933
1c,2t,3-Trimethylcyclopentane	N8	1.3479	1.3237	1.2633
3-Ethylhexane	I8	0.3239	0.3238	0.3339
1t,4-Dimethylcyclohexane	N8	0.6554	0.6436	0.6206
1,1-Dimethylcyclohexane	N8	0.1525	0.1498	0.1411
3c-Ethylmethylcyclopentane	N8	0.0058	0.0057	0.0055
3t-Ethylmethylcyclopentane	N8	0.1036	0.1017	0.0975
2t-Ethylmethylcyclopentane	N8	0.0829	0.0814	0.0778
1,1-Methylethylcyclopentane	N8	0.2512	0.2467	0.2323
2,2,4-Trimethylhexane	I9	0.0373	0.0419	0.0431
1t,2-Dimethylcyclohexane	N8	0.6512	0.6395	0.6062
1t,3-Dimethylcyclohexane	N8	0.0109	0.0107	0.0100
UnknownC7s	U7	0.1337	0.1173	0.1261
n-Octane	P8	2.9482	2.9474	3.0836
1c,4-Dimethylcyclohexane	N8	1.2517	1.2292	1.1547
i-Propylcyclopentane	I8	0.0775	0.0761	0.0721
2,4,4-Trimethylhexane	I9	0.0307	0.0345	0.0351
2,2,3,4-Tetramethylpentane	I9	0.0168	0.0189	0.0193
2,3,4-Trimethylhexane	I9	0.0277	0.0311	0.0317
1c,2-Dimethylcyclohexane	N8	0.0629	0.0618	0.0571
2,3,5-Trimethylhexane	I9	0.1179	0.1323	0.1348
2,2-Dimethylheptane	I9	0.0185	0.0208	0.0215
1,1,4-Trimethylcyclohexane	N9	0.9288	1.0262	0.9778
2,2,3-Trimethylhexane	I9	0.4093	0.4595	0.4633
2,4-Dimethylheptane	I9	0.0101	0.0113	0.0116
4,4-Dimethylheptane	I9	0.0602	0.0676	0.0695
Ethylcyclohexane	N8	0.5067	0.4976	0.4646
n-Propylcyclopentane	N8	0.1978	0.1943	0.1840
1c,3c,5-Trimethylcyclohexane	N9	0.0292	0.0323	0.0308
2,5-Dimethylheptane	I9	0.0548	0.0615	0.0631
3,3-Dimethylheptane	I9	0.0772	0.0867	0.0889
3,5-Dimethylheptane	I9	0.0387	0.0434	0.0445
2,6-Dimethylheptane	I9	0.0519	0.0583	0.0605
1,1,3-Trimethylcyclohexane	N9	0.0960	0.1061	0.1011
Ethylbenzene	A8	0.1882	0.1749	0.1479
1c,2t,4t-Trimethylcyclohexane	N9	0.3124	0.3452	0.3226
2,3-Dimethylheptane	I9	0.0518	0.0581	0.0589
1,3-Dimethylbenzene (m-Xylene)	A8	0.5989	0.5565	0.4734
1,4-Dimethylbenzene (p-Xylene)	A8	0.3958	0.3678	0.3139
3,4-Dimethylheptane	I9	0.0390	0.0438	0.0440
3,4-Dimethylheptane (2)	I9	0.1064	0.1194	0.1201
4-Ethylheptane	I9	0.0292	0.0328	0.0337
4-Methyloctane	I9	0.2261	0.2538	0.2590
2-Methyloctane	I9	0.3250	0.3648	0.3759
1c,2t,4c-Trimethylcyclohexane	I9	0.0710	0.0797	0.0808
3-Ethylheptane	I9	0.0636	0.0714	0.0723
3-Methyloctane	I9	0.4744	0.5325	0.5433
3,3-Diethylpentane	I9	0.0572	0.0642	0.0626
1c,2t,3-Trimethylcyclohexane	N9	0.0320	0.0354	0.0331
1,1,2-Trimethylcyclohexane	N9	0.0376	0.0415	0.0388
1,2-Dimethylbenzene (o-Xylene)	A8	0.3895	0.3619	0.3025
i-Butylcyclopentane	N9	0.2219	0.2452	0.2309
UnknownC8s	U8	0.0629	0.0629	0.0658
n-Nonane	P9	2.1012	2.3587	2.4168
1,1-Methylethylcyclohexane	N9	0.6453	0.7244	0.7445
i-Propylbenzene	A9	0.1897	0.1995	0.1699
i-Propylcyclohexane	N9	0.0986	0.1089	0.0999
2,2-Dimethyloctane	I10	0.0479	0.0596	0.0593
2,4-Dimethyloctane	I10	0.0573	0.0714	0.0710
2,6-Dimethyloctane	I10	0.0090	0.0112	0.0115
2,5-Dimethyloctane	I10	0.0358	0.0446	0.0444

n-Butylcyclopentane	N9	0.2009	0.2466	0.2270
3,3-Dimethyloctane	I10	0.0577	0.0719	0.0716
n-Propylbenzene	A9	0.3196	0.3362	0.2864
3,6-Dimethyloctane	I10	0.0934	0.1163	0.1157
3-Methyl-5-ethylheptane	I10	0.1489	0.1671	0.1693
1,3-Methylethylbenzene	A9	0.1365	0.1436	0.1213
1,4-Methylethylbenzene	A9	0.1636	0.1721	0.1454
1,3,5-Trimethylbenzene	A9	0.1758	0.1849	0.1573
2,3-Dimethyloctane	I10	0.0648	0.0807	0.0803
5-Methylnonane	I10	0.2419	0.3012	0.3024
1,2-Methylethylbenzene	A9	0.2512	0.2642	0.2220
2-Methylnonane	I10	0.0569	0.0709	0.0718
3-Ethyloctane	I10	0.0642	0.0799	0.0795
3-Methylnonane	I10	0.1908	0.2376	0.2383
1,2,4-Trimethylbenzene	A9	0.0302	0.0318	0.0267
t-Butylbenzene	A10	0.2040	0.2396	0.2035
i-Butylcyclohexane	N10	0.1417	0.1740	0.1577
1t-Methyl-2-n-propylcyclohexane	I10	0.0577	0.0648	0.0657
i-Butylbenzene	A10	0.0713	0.0838	0.0723
sec-Butylbenzene	A10	0.0231	0.0271	0.0231
UnknownC9s	U9	1.2961	1.4549	1.4907
n-Decane	P10	1.9576	2.4377	2.4557
1,2,3-Trimethylbenzene	A9	0.1760	0.1851	0.1524
1,3-Methyl-i-propylbenzene	A10	0.0523	0.0550	0.0462
1,4-Methyl-i-propylbenzene	A10	0.0616	0.0648	0.0544
Sec-Butylcyclohexane	N10	0.3935	0.4831	0.4372
1,2-Methyl-i-propylbenzene	A10	0.2195	0.2579	0.2165
3-Ethylnonane	I10	0.0284	0.0354	0.0358
1,3-Diethylbenzene	A10	0.1044	0.1226	0.1044
1,3-Methyl-n-propylbenzene	A10	0.0654	0.0768	0.0656
1,4-Diethylbenzene	A10	0.0843	0.0990	0.0845
1,4-Methyl-n-propylbenzene	A10	0.0912	0.1071	0.0918
n-Butylbenzene	A10	0.0451	0.0530	0.0453
1,3-Dimethyl-5-ethylbenzene	A10	0.0413	0.0485	0.0413
1,2-Diethylbenzene	A10	0.1643	0.1930	0.1615
1,2-Methyl-n-propylbenzene	A10	0.1044	0.1226	0.1033
1,4-Dimethyl-2-ethylbenzene	A10	0.1033	0.1213	0.1018
1,3-Dimethyl-4-ethylbenzene	A10	0.0496	0.0583	0.0490
1,2-Dimethyl-4-ethylbenzene	A10	0.2184	0.2566	0.2159
1,3-Dimethyl-2-ethylbenzene	A10	0.0348	0.0409	0.0338
1t,2c,4-Trimethylcyclopentane	A10	0.7372	0.7240	0.7122
1,2-Dimethyl-3-ethylbenzene	A10	0.0291	0.0342	0.0282
1,2-Ethyl-i-propylbenzene	A10	0.0418	0.0491	0.0412
1,4-Methyl-t-butylbenzene	A11	0.2122	0.2493	0.2093
UnknownC10s	U10	2.3193	2.8881	2.9095
n-Undecane	P11	1.5781	2.1589	2.1447
1,4-Ethyl-i-propylbenzene	A11	0.0577	0.0678	0.0569
1,2,4,5-Tetramethylbenzene	A11	0.0566	0.0665	0.0552
1,2-Methyl-n-butylbenzene	A11	0.0628	0.0738	0.0620
1,2,3,5-Tetramethylbenzene	A11	0.0501	0.0588	0.0486
1,2-Methyl-t-butylbenzene	A11	0.0997	0.1171	0.0983
5-Methylindan	A11	0.0190	0.0283	0.0278
4-Methylindan	A11	0.0114	0.0170	0.0167
1,2-Ethyl-n-propylbenzene	A11	0.1477	0.1735	0.1457
2-Methylindan	A11	0.0375	0.0559	0.0549
1,3-Methyl-n-butylbenzene	A11	0.0593	0.0697	0.0585
1,3-Di-i-propylbenzene	A11	0.0181	0.0213	0.0179
sec-Pentylbenzene	A11	0.1367	0.1606	0.1348
n-Pentylbenzene	A11	0.0617	0.0801	0.0687
1t-M-2-(4MP)cyclopentane	P12	0.0093	0.0139	0.0137
1,2-Di-n-propylbenzene	A11	0.0687	0.0807	0.0677
1,4-Di-i-propylbenzene	A11	0.2223	0.2611	0.2192
Tetrahydronaphthalene	A10	0.0206	0.0242	0.0203
t-Decahydronaphthalene	A10	0.0783	0.0920	0.0772
Naphthalene	A10	0.1096	0.1229	0.1032
1-t-Butyl-3,5-dimethylbenzene	A12	0.0326	0.0383	0.0322
1,4-Ethyl-t-butylbenzene	A11	0.0387	0.0455	0.0382
UnknownC11s	U11	1.3510	1.8482	1.8361
n-Dodecane	P12	1.3158	1.9616	1.9273
1,3-Di-n-propylbenzene	A12	0.0529	0.0621	0.0521
1,3,5-Triethylbenzene	A12	0.0274	0.0288	0.0245
1,2,4-Triethylbenzene	A12	0.4582	0.4820	0.4048
1,4-Methyl-n-pentylbenzene	A12	0.0586	0.0688	0.0578
n-Hexylbenzene	A12	0.0593	0.0842	0.0722

1,2,3,4,5-Pentamethylbenzene	A13	0.2750	0.3230	0.2712
2-Methylnaphthalene	A11	0.1789	0.2227	0.1870
1-Methylnaphthalene	A11	0.1613	0.2007	0.1448
UnknownC12s	U12	0.9238	1.3772	1.3531
n-Tridecane	P13	1.1615	1.8741	1.8196
UnknownC13s	U13	1.1518	1.8584	1.8043
n-Tetradecane	P14	0.8412	1.4606	1.4152
UnknownC14s	U14	1.2696	2.2044	2.1359
n-Pentadecane	P15	0.4020	0.7474	0.7159
UnknownC15s	U15	1.1794	2.1926	2.1001
n-Hexadecane	P16	0.2932	0.5811	0.5530
UnknownC16s	U16	0.8176	1.6203	1.5419
n-Heptadecane	P17	0.2108	0.4436	0.4208
UnknownC17s	U17	0.2712	0.5708	0.5415
n-Octadecane	P18	0.0677	0.1508	0.1426
UnknownC18s	U18	0.2007	0.4470	0.4228
UnknownC19s	U19	0.0530	0.1246	0.1171
TOTAL		100.0000	100.0000	100.0000

EMPACT

COPY

CRUDE OIL ASSAY

PROJECT NO. :	201408038	ANALYSIS NO. :	04
COMPANY NAME :	MULL DRILLING	ANALYSIS DATE:	AUGUST 11, 2014
ACCOUNT NO. :		SAMPLE DATE :	AUGUST 6, 2014
PRODUCER :		CYLINDER NO. :	1L GLASS JAR
LEASE NO. :		SAMPLED BY :	JOHN MOSER
NAME/DESCRIP :	PRODUCTION TANK 8:50 BRAUKMANN FARMS C		EMPACT
FIELD DATA		SAMPLE TEMP. :	113
SAMPLE PRES. :		AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT		

SPECIFICATION		TEST METHOD	UNITS	RESULTS
API GRAVITY			API 60/60	34.4
RVP @100 DEG F		D323	PSIG	3.6
TOTAL SULFUR		D2622	WT %	N/A
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				BLACK, THICK
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

EG&G CONTINENTAL LABORATORIES

Company Energy Reserves Group

File No. DF268

Well 1-C Braukmann Farms

Hydrocarbon Analyses of Separator Products and Calculated Well Stream

COMPONENT	SEPARATOR LIQUID		SEPARATOR GAS		WELL STREAM	
	MOL %	LIQ.VOL.%	MOL %	GPM	MOL %	GPM
Hydrogen Sulfide	0.00	0.00	0.00		0.00	
Carbon Dioxide	0.04	0.08	1.85		0.74	
Nitrogen	0.03	0.01	13.95		5.41	
Methane	0.60	0.12	48.12		18.98	
Ethane	0.82	0.25	15.58		6.53	
Propane	1.57	0.50	10.23	2.82	4.92	1.35
iso-Butane	0.42	0.16	1.38	0.45	0.79	0.26
N-Butane	1.76	0.64	4.31	1.36	2.75	0.87
iso-Pentane	0.83	0.35	0.96	0.35	0.88	0.32
N-Pentane	1.60	0.67	1.44	0.52	1.54	0.56
Hexanes	10.00	4.73	0.46	0.19	6.31	2.60
Heptanes plus	82.33	92.58	1.72	0.79	51.15	50.09
TOTAL	100.00	100.00	100.00	6.485	100.00	56.05

Calculated Gas Gravity (AIR = 1.000) 0.9941

PROPERTIES OF HEPTANE PLUS

API Gravity = 29.75
Specific Gravity = 0.8775
Molecular Weight = 271

BASIS OF RECOMBINATION

Stock Tank Liquid per MMSCF Separator gas = 3289 Bbls
Shrinkage Factor = 0.9800
Separator Liquid per MMSCF Separator gas = 3356 Bbls