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

303-637-0150

EXTENDED NATURAL GAS ANALYSIS (*DHA)

MAIN PAGE

PROJECT NO. :	201312131	ANALYSIS NO. :	02
COMPANY NAME :	CONOCO PHILLIPS	ANALYSIS DATE:	DECEMBER 31, 2013
ACCOUNT NO. :		SAMPLE DATE :	DECEMBER 27, 2013
PRODUCER :		CYLINDER NO. :	0722
LEASE NO. :		SAMPLED BY :	JOHN MOSER-EMPACT
NAME/DESCRIP :	H.P. SEPARATOR GAS @ 11:15 CONVERSE FAMILY 6-1H		
FIELD DATA		SAMPLE TEMP. :	75
SAMPLE PRES. :	9	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; PROBE; LENGTH OF H2S STAIN @ 6PPM @ 11:20		

COMPONENT	MOLE %	MASS %	GPM @ 14.650	GPM @ 14.730
ALCOHOLS	0.0021	0.0050		
HELIUM	0.02	0.00	---	---
HYDROGEN	0.01	0.00	---	---
OXYGEN/ARGON	0.02	0.03	---	---
NITROGEN	1.57	1.74	---	---
CARBON DIOXIDE	2.25	3.92	---	---
METHANE	66.36140	42.18850	---	---
ETHANE	11.9377	14.2247	3.1893	3.2068
PROPANE	10.0440	17.5511	2.7646	2.7797
I-BUTANE	1.1930	2.7478	0.3897	0.3918
N-BUTANE	3.7319	8.5955	1.1750	1.1814
I-PENTANE	0.8537	2.4344	0.3065	0.3082
N-PENTANE	0.9430	2.6962	0.3416	0.3434
HEXANES PLUS	1.0632	3.8668	0.4294	0.4317
TOTALS	100.00000	100.00000	8.5961	8.6430

BTEX COMPONENTS	MOLE%	WT%
BENZENE	0.0466	0.1442
TOLUENE	0.0248	0.0905
ETHYLBENZENE	0.0024	0.0101
XYLENES	0.0056	0.0235
TOTAL BTEX	0.0794	0.2683

	BTU @	14.650	14.730
LOW	NET DRY REAL :	1294.6 **/scf**	1301.6 **/scf**
	NET WET REAL :	1272.0 **/scf**	1279.0 **/scf**
HIGH	GROSS DRY REAL :	1420.6 **/scf**	1428.3 **/scf**
	GROSS WET REAL :	1395.8 **/scf**	1403.5 **/scf**
	NET DRY REAL :	19486.2 **/lb**	19592.7 **/lb**
	GROSS DRY REAL :	21391.2 **/lb**	21508.0 **/lb**
	RELATIVE DENSITY (AIR=1):		0.8701
	COMPRESSIBILITY FACTOR :		0.99520

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

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

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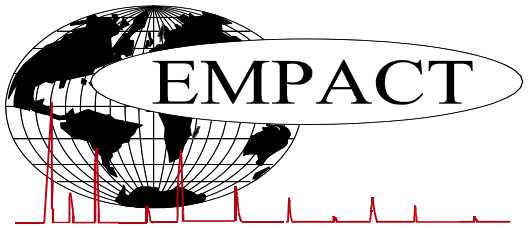
EXTENDED NATURAL GAS ANALYSIS (*DHA)

GLYCALC INFORMATION

PROJECT NO. :	201312131	ANALYSIS NO. :	02
COMPANY NAME :	CONOCO PHILLIPS	ANALYSIS DATE:	DECEMBER 31, 2013
ACCOUNT NO. :		SAMPLE DATE :	DECEMBER 27, 2013
PRODUCER :		CYLINDER NO. :	0722
LEASE NO. :		SAMPLED BY :	JOHN MOSER-EMPACT
NAME/DESCRIP :	H.P. SEPARATOR GAS @ 11:15 CONVERSE FAMILY 6-1H		
FIELD DATA		SAMPLE TEMP. :	75
SAMPLE PRES. :	9	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; PROBE; LENGTH OF H2S STAIN @ 6PPM @ 11:20		

Componet	Mole %	Wt %
Helium	0.02	0.00
Hydrogen	0.01	0.00
Carbon Dioxide	2.25	3.92
Nitrogen	1.57	1.74
Methane	66.36140	42.18850
Ethane	11.9377	14.2247
Propane	10.0440	17.5511
Isobutane	1.1930	2.7478
n-Butane	3.7319	8.5955
Isopentane	0.7731	2.2104
n-Pentane	0.9430	2.6962
Cyclopentane	0.0806	0.2240
n-Hexane	0.2069	0.7066
Cyclohexane	0.0563	0.1878
Other Hexanes	0.3882	1.3154
Heptanes	0.1847	0.7282
Methycyclohexane	0.0445	0.1731
2,2,4 Trimethylpentane	0.0001	0.0004
Benzene	0.0466	0.1442
Toluene	0.0248	0.0905
Ethylbenzene	0.0024	0.0101
Xylenes	0.0056	0.0235
C8+ Heavies	0.1031	0.4870
Subtotal	99.97790	99.96500
Oxygen/Argon	0.02	0.03
Alcohols	0.0021	0.0050
Total	100.00000	100.00000



EXTENDED NATURAL GAS ANALYSIS (*DHA)

DHA COMPONENT LIST

PROJECT NO. :	201312131	ANALYSIS NO. :	02
COMPANY NAME :	CONOCO PHILLIPS	ANALYSIS DATE:	DECEMBER 31, 2013
ACCOUNT NO. :		SAMPLE DATE :	DECEMBER 27, 2013
PRODUCER :		CYLINDER NO. :	0722
LEASE NO. :		SAMPLED BY :	JOHN MOSER-EMPACT
NAME/DESCRIP :	H.P. SEPARATOR GAS @ 11:15 CONVERSE FAMILY 6-1H		
FIELD DATA		SAMPLE TEMP. :	75
SAMPLE PRES. :	9	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; PROBE; LENGTH OF H2S STAIN @ 6PPM @ 11:20		

COMPONENT	PIANO #	MOLE %	MASS %	GPM @ 14.650	GPM @ 14.730
Helium	---	0.02	0.00	---	---
Hydrogen	---	0.01	0.00	---	---
Oxygen/Argon	---	0.02	0.03	---	---
Nitrogen	---	1.57	1.74	---	---
Carbon Dioxide	---	2.25	3.92	---	---
Methane	P1	66.36140	42.18850	---	---
Ethane	P2	11.9377	14.2247	3.189	3.207
Propane	P3	10.0440	17.5511	2.765	2.780
i-Butane	I4	1.1930	2.7478	0.390	0.392
n-Butane	P4	3.7318	8.5953	1.175	1.181
2,2-Dimethylpropane	I5	0.0029	0.0083	0.001	0.001
Ethanol	X2	0.0001	0.0002	0.000	0.000
i-Pentane	I5	0.7702	2.2021	0.282	0.283
Acetone	X3	0.0018	0.0042	0.001	0.001
UnknownC4s	U4	0.0001	0.0002	0.000	0.000
n-Pentane	P5	0.9429	2.6959	0.342	0.343
t-Butanol	X4	0.0002	0.0006	0.000	0.000
2,2-Dimethylbutane	I6	0.0022	0.0075	0.001	0.001
Cyclopentane	N5	0.0806	0.2240	0.024	0.024
2,3-Dimethylbutane	I6	0.0171	0.0584	0.007	0.007
2-Methylpentane	I6	0.1584	0.5409	0.066	0.067
3-Methylpentane	I6	0.0824	0.2814	0.034	0.034
UnknownC5s	U5	0.0001	0.0003	0.000	0.000
n-Hexane	P6	0.2069	0.7066	0.085	0.086
2,2-Dimethylpentane	I7	0.0007	0.0028	0.000	0.000
Methylcyclopentane	N6	0.1281	0.4272	0.045	0.045
2,4-Dimethylpentane	I7	0.0053	0.0210	0.002	0.002
2,2,3-Trimethylbutane	I7	0.0001	0.0004	0.000	0.000
Benzene	A6	0.0466	0.1442	0.013	0.013
3,3-Dimethylpentane	I7	0.0005	0.0020	0.000	0.000
Cyclohexane	N6	0.0563	0.1878	0.019	0.019
2-Methylhexane	I7	0.0217	0.0862	0.010	0.010
2,3-Dimethylpentane	I7	0.0113	0.0449	0.005	0.005
1,1-Dimethylcyclopentane	N7	0.0052	0.0203	0.002	0.002
3-Methylhexane	I7	0.0259	0.1028	0.012	0.012
1c,3-Dimethylcyclopentane	N7	0.0142	0.0552	0.007	0.007

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1t,3-Dimethylcyclopentane	N7	0.0127	0.0494	0.006	0.006
3-Ethylpentane	I7	0.0010	0.0040	0.000	0.000
1t,2-Dimethylcyclopentane	N7	0.0268	0.1043	0.012	0.012
2,2,4-Trimethylpentane	I8	0.0001	0.0004	0.000	0.000
n-Heptane	P7	0.0516	0.2049	0.024	0.024
1c,2-Dimethylcyclopentane	N7	0.0009	0.0035	0.000	0.000
Methylcyclohexane	N7	0.0445	0.1731	0.018	0.018
2,2-Dimethylhexane	I8	0.0030	0.0136	0.001	0.001
Ethylcyclopentane	N7	0.0068	0.0265	0.003	0.003
2,5-Dimethylhexane	I8	0.0011	0.0050	0.001	0.001
2,2,3-Trimethylpentane	I8	0.0002	0.0009	0.000	0.000
2,4-Dimethylhexane	I8	0.0019	0.0086	0.001	0.001
1c,2t,4-Trimethylcyclopentane	N8	0.0036	0.0160	0.002	0.002
3,3-Dimethylhexane	I8	0.0002	0.0009	0.000	0.000
1t,2c,4-Trimethylcyclopentane	N8	0.0042	0.0187	0.002	0.002
2,3,4-Trimethylpentane	I8	0.0008	0.0036	0.000	0.000
2,3,3-Trimethylpentane	I8	0.0001	0.0004	0.000	0.000
Toluene	A7	0.0248	0.0905	0.008	0.008
2,3-Dimethylhexane	I8	0.0015	0.0068	0.001	0.001
2-Methyl-3-ethylpentane	I8	0.0010	0.0045	0.000	0.000
2-Methylheptane	I8	0.0087	0.0394	0.004	0.004
4-Methylheptane	I8	0.0023	0.0104	0.001	0.001
3-Methyl-3-ethylpentane	I8	0.0003	0.0014	0.000	0.000
3,4-Dimethylhexane	I8	0.0003	0.0014	0.000	0.000
1c,2c,4-Trimethylcyclopentane	N8	0.0001	0.0004	0.000	0.000
1c,3-Dimethylcyclohexane	N8	0.0002	0.0009	0.000	0.000
3-Methylheptane	I8	0.0032	0.0145	0.002	0.002
1c,2t,3-Trimethylcyclopentane	N8	0.0061	0.0271	0.003	0.003
3-Ethylhexane	I8	0.0006	0.0027	0.000	0.000
1t,4-Dimethylcyclohexane	N8	0.0020	0.0089	0.001	0.001
1,1-Dimethylcyclohexane	N8	0.0007	0.0031	0.000	0.000
3t-Ethylmethylcyclopentane	N8	0.0013	0.0058	0.001	0.001
2t-Ethylmethylcyclopentane	N8	0.0011	0.0049	0.001	0.001
1,1-Methylethylcyclopentane	N8	0.0038	0.0169	0.002	0.002
2,2,4-Trimethylhexane	I9	0.0002	0.0010	0.000	0.000
1t,2-Dimethylcyclohexane	N8	0.0031	0.0138	0.002	0.002
1t,3-Dimethylcyclohexane	N8	0.0001	0.0004	0.000	0.000
n-Octane	P8	0.0121	0.0548	0.006	0.006
1c,4-Dimethylcyclohexane	N8	0.0012	0.0054	0.001	0.001
i-Propylcyclopentane	I8	0.0003	0.0014	0.000	0.000
2,4,4-Trimethylhexane	I9	0.0001	0.0005	0.000	0.000
2,3,5-Trimethylhexane	I9	0.0002	0.0010	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	0.0010	0.0044	0.001	0.001
2,2-Dimethylheptane	I9	0.0001	0.0005	0.000	0.000
1,1,4-Trimethylcyclohexane	N9	0.0042	0.0210	0.002	0.002
2,2,3-Trimethylhexane	I9	0.0013	0.0066	0.001	0.001
2,4-Dimethylheptane	I9	0.0001	0.0005	0.000	0.000
4,4-Dimethylheptane	I9	0.0001	0.0005	0.000	0.000
Ethylcyclohexane	N8	0.0021	0.0094	0.001	0.001
n-Propylcyclopentane	N8	0.0006	0.0027	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	0.0006	0.0030	0.000	0.000
Ethylbenzene	I8	0.0024	0.0101	0.001	0.001
1c,2t,4t-Trimethylcyclohexane	N9	0.0006	0.0030	0.000	0.000

2,3-Dimethylheptane	I9	0.0016	0.0081	0.001	0.001
1,3-Dimethylbenzene (m-Xylene)	A8	0.0029	0.0122	0.001	0.001
1,4-Dimethylbenzene (p-Xylene)	A8	0.0010	0.0042	0.000	0.000
3,4-Dimethylheptane	I9	0.0005	0.0025	0.000	0.000
3,4-Dimethylheptane (2)	I9	0.0001	0.0005	0.000	0.000
4-Ethylheptane	I9	0.0001	0.0005	0.000	0.000
4-Methyloctane	I9	0.0008	0.0041	0.000	0.000
2-Methyloctane	I9	0.0009	0.0046	0.001	0.001
1c,2t,3-Trimethylcyclohexane	N9	0.0002	0.0010	0.000	0.000
3-Ethylheptane	I9	0.0002	0.0010	0.000	0.000
3-Methyloctane	I9	0.0011	0.0056	0.001	0.001
1c,2t,4c-Trimethylcyclohexane	I9	0.0001	0.0005	0.000	0.000
1,1,2-Trimethylcyclohexane	N9	0.0002	0.0010	0.000	0.000
1,2-Dimethylbenzene (o-Xylene)	A8	0.0017	0.0071	0.001	0.001
i-Butylcyclopentane	N9	0.0006	0.0030	0.000	0.000
UnknownC8s	U8	0.0001	0.0004	0.000	0.000
n-Nonane	P9	0.0029	0.0147	0.002	0.002
1,1-Methylethylcyclohexane	N9	0.0006	0.0030	0.000	0.000
i-Propylbenzene	A9	0.0006	0.0029	0.000	0.000
i-Propylcyclohexane	N9	0.0002	0.0010	0.000	0.000
2,2-Dimethyloctane	I10	0.0001	0.0006	0.000	0.000
2,4-Dimethyloctane	I10	0.0001	0.0006	0.000	0.000
2,5-Dimethyloctane	I10	0.0001	0.0006	0.000	0.000
n-Butylcyclopentane	N9	0.0007	0.0035	0.000	0.000
3,3-Dimethyloctane	I10	0.0001	0.0006	0.000	0.000
n-Propylbenzene	A9	0.0005	0.0024	0.000	0.000
3,6-Dimethyloctane	I10	0.0004	0.0023	0.000	0.000
3-Methyl-5-ethylheptane	I10	0.0006	0.0034	0.000	0.000
1,3-Methylethylbenzene	A9	0.0005	0.0024	0.000	0.000
1,4-Methylethylbenzene	A9	0.0002	0.0010	0.000	0.000
1,3,5-Trimethylbenzene	A9	0.0002	0.0010	0.000	0.000
2,3-Dimethyloctane	I10	0.0001	0.0006	0.000	0.000
5-Methylnonane	I10	0.0002	0.0011	0.000	0.000
1,2-Methylethylbenzene	A9	0.0006	0.0029	0.000	0.000
3-Ethyloctane	I10	0.0001	0.0006	0.000	0.000
3-Methylnonane	I10	0.0002	0.0011	0.000	0.000
1,2,4-Trimethylbenzene	A9	0.0001	0.0005	0.000	0.000
t-Butylbenzene	A10	0.0004	0.0021	0.000	0.000
i-Butylcyclohexane	N10	0.0002	0.0011	0.000	0.000
1t-Methyl-2-n-propylcyclohexane	I10	0.0001	0.0006	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	0.0028	0.0142	0.002	0.002
n-Decane	P10	0.0009	0.0051	0.001	0.001
1,2,3-Trimethylbenzene	A9	0.0002	0.0010	0.000	0.000
1,3-Methyl-i-propylbenzene	A10	0.0001	0.0005	0.000	0.000
Sec-Butylcyclohexane	A10	0.0002	0.0011	0.000	0.000
1,2-Methyl-i-propylbenzene	A10	0.0001	0.0005	0.000	0.000
1,3-Diethylbenzene	A10	0.0001	0.0005	0.000	0.000
1,4-Methyl-n-propylbenzene	A10	0.0001	0.0005	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
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
1,2-Dimethyl-4-ethylbenzene	A10	0.0001	0.0005	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
UnknownC10s	U10	0.0027	0.0152	0.002	0.002
n-Undecane	P11	0.0003	0.0019	0.000	0.000
UnknownC11s	U11	0.0004	0.0025	0.000	0.000

n-Dodecane	P12	0.0001	0.0007	0.000	0.000
UnknownC12s	U12	0.0001	0.0006	0.000	0.000
n-Tridecane	P13	0.0001	0.0007	0.000	0.000
n-Tetradecane	P14	0.0001	0.0008	0.000	0.000
TOTAL		100.00000	100.00000	8.5971	8.6440

BTEX COMPONENTS	**MOLE%**	**WT%**
BENZENE	0.0466	0.1442
TOLUENE	0.0248	0.0905
ETHYLBENZENE	0.0024	0.0101
XYLENES	0.0056	0.0235
TOTAL BTEX	0.0794	0.2683

		14.650	14.730
	BTU @		
LOW	NET DRY REAL :	1294.6 **/scf**	1301.6 **/scf**
	NET WET REAL :	1272.0 **/scf**	1279.0 **/scf**
HIGH	GROSS DRY REAL :	1420.6 **/scf**	1428.3 **/scf**
	GROSS WET REAL :	1395.8 **/scf**	1403.5 **/scf**
	NET DRY REAL :	19486.2 **/lb**	19592.7 **/lb**
	GROSS DRY REAL :	21391.2 **/lb**	21508.0 **/lb**
	RELATIVE DENSITY (AIR=1):		0.8701
	COMPRESSIBILITY FACTOR :		0.99520

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

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

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EXTENDED NATURAL GAS ANALYSIS (*DHA)

MAIN PAGE

PROJECT NO. :	201312131	ANALYSIS NO. :	03
COMPANY NAME :	CONOCO PHILLIPS	ANALYSIS DATE:	DECEMBER 31, 2013
ACCOUNT NO. :		SAMPLE DATE :	DECEMBER 27, 2013
PRODUCER :		CYLINDER NO. :	0748
LEASE NO. :		SAMPLED BY :	JOHN MOSER-EMPACT
NAME/DESCRIP :	L.P. SEPARATOR @ 11:25 CONVERSE FAMILY 6-1H		
FIELD DATA		SAMPLE TEMP. :	100
SAMPLE PRES. :	28	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; NO PROBE POSSIBLE MOISTURE IN SAMPLE		

COMPONENT	MOLE %	MASS %	GPM @ 14.650	GPM @ 14.730
ALCOHOLS	0.0015	0.0027		
HELIUM	0.00	0.00	---	---
HYDROGEN	0.00	0.00	---	---
OXYGEN/ARGON	0.04	0.04	---	---
NITROGEN	0.55	0.46	---	---
CARBON DIOXIDE	2.55	3.38	---	---
METHANE	42.85300	20.68740	---	---
ETHANE	17.2565	15.6141	4.6288	4.6540
PROPANE	19.6396	26.0598	5.4272	5.4569
I-BUTANE	2.5901	4.5300	0.8497	0.8544
N-BUTANE	8.2913	14.5014	2.6216	2.6359
I-PENTANE	1.9250	4.1676	0.6928	0.6966
N-PENTANE	2.1261	4.6159	0.7733	0.7775
HEXANES PLUS	2.1769	5.9411	0.8805	0.8851
TOTALS	100.00000	100.00000	15.8739	15.9604

BTEX COMPONENTS	MOLE%	WT%
BENZENE	0.1020	0.2398
TOLUENE	0.0484	0.1342
ETHYLBENZENE	0.0034	0.0109
XYLENES	0.0087	0.0278
TOTAL BTEX	0.1625	0.4127

	BTU @	14.650	14.730
LOW	NET DRY REAL :	1709.3 **/scf**	1718.7 **/scf**
	NET WET REAL :	1679.4 **/scf**	1688.8 **/scf**
HIGH	GROSS DRY REAL :	1865.1 **/scf**	1875.3 **/scf**
	GROSS WET REAL :	1832.5 **/scf**	1842.7 **/scf**
	NET DRY REAL :	19537.2 **/lb**	19643.9 **/lb**
	GROSS DRY REAL :	21325.5 **/lb**	21442.0 **/lb**
	RELATIVE DENSITY (AIR=1):		1.1467
	COMPRESSIBILITY FACTOR :		0.99132

(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

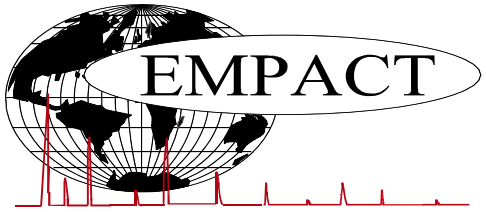
303-637-0150

EXTENDED NATURAL GAS ANALYSIS (*DHA)

GLYCALC INFORMATION

PROJECT NO. :	201312131	ANALYSIS NO. :	03
COMPANY NAME :	CONOCO PHILLIPS	ANALYSIS DATE:	DECEMBER 31, 2013
ACCOUNT NO. :		SAMPLE DATE :	DECEMBER 27, 2013
PRODUCER :		CYLINDER NO. :	0748
LEASE NO. :		SAMPLED BY :	JOHN MOSER-EMPACT
NAME/DESCRIP :	L.P. SEPARATOR @ 11:25 CONVERSE FAMILY 6-1H		
FIELD DATA		SAMPLE TEMP. :	100
SAMPLE PRES. :	28	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; NO PROBE POSSIBLE MOISTURE IN SAMPLE		

Componet	Mole %	Wt %
Helium	0.00	0.00
Hydrogen	0.00	0.00
Carbon Dioxide	2.55	3.38
Nitrogen	0.55	0.46
Methane	42.85300	20.68740
Ethane	17.2565	15.6141
Propane	19.6396	26.0598
Isobutane	2.5901	4.5300
n-Butane	8.2913	14.5014
Isopentane	1.7324	3.7611
n-Pentane	2.1261	4.6159
Cyclopentane	0.1926	0.4065
n-Hexane	0.4408	1.1431
Cyclohexane	0.1193	0.3021
Other Hexanes	0.8312	2.1387
Heptanes	0.3782	1.1321
Methycyclohexane	0.0868	0.2565
2,2,4 Trimethylpentane	0.0002	0.0007
Benzene	0.1020	0.2398
Toluene	0.0484	0.1342
Ethylbenzene	0.0034	0.0109
Xylenes	0.0087	0.0278
C8+ Heavies	0.1579	0.5552
Subtotal	99.95850	99.95730
Oxygen/Argon	0.04	0.04
Alcohols	0.0015	0.0027
Total	100.00000	100.00000



EXTENDED NATURAL GAS ANALYSIS (*DHA)

DHA COMPONENT LIST

PROJECT NO. :	201312131	ANALYSIS NO. :	03
COMPANY NAME :	CONOCO PHILLIPS	ANALYSIS DATE:	DECEMBER 31, 2013
ACCOUNT NO. :		SAMPLE DATE :	DECEMBER 27, 2013
PRODUCER :		CYLINDER NO. :	0748
LEASE NO. :		SAMPLED BY :	JOHN MOSER-EMPACT
NAME/DESCRIP :	L.P. SEPARATOR @ 11:25 CONVERSE FAMILY 6-1H		
FIELD DATA		SAMPLE TEMP. :	100
SAMPLE PRES. :	28	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; NO PROBE POSSIBLE MOISTURE IN SAMPLE		

COMPONENT	PIANO #	MOLE %	MASS %	GPM @ 14.650	GPM @ 14.730
Helium	---	0.00	0.00	---	---
Hydrogen	---	0.00	0.00	---	---
Oxygen/Argon	---	0.04	0.04	---	---
Nitrogen	---	0.55	0.46	---	---
Carbon Dioxide	---	2.55	3.38	---	---
Methane	P1	42.85300	20.68740	---	---
Ethane	P2	17.2565	15.6141	4.629	4.654
Propane	P3	19.6396	26.0598	5.427	5.457
i-Butane	I4	2.5901	4.5300	0.850	0.854
n-Butane	P4	8.2912	14.5012	2.622	2.636
2,2-Dimethylpropane	I5	0.0067	0.0145	0.003	0.003
Ethanol	X2	0.0002	0.0003	0.000	0.000
i-Pentane	I5	1.7257	3.7466	0.633	0.636
Acetone	X3	0.0007	0.0012	0.000	0.000
i-Propanol	X3	0.0003	0.0005	0.000	0.000
UnknownC4s	U4	0.0001	0.0002	0.000	0.000
n-Pentane	P5	2.1260	4.6157	0.773	0.778
t-Butanol	X4	0.0003	0.0007	0.000	0.000
2,2-Dimethylbutane	I6	0.0049	0.0127	0.002	0.002
Cyclopentane	N5	0.1926	0.4065	0.057	0.058
2,3-Dimethylbutane	I6	0.0309	0.0801	0.013	0.013
2-Methylpentane	I6	0.3437	0.8913	0.143	0.144
3-Methylpentane	I6	0.1765	0.4577	0.072	0.073
UnknownC5s	U5	0.0001	0.0002	0.000	0.000
n-Hexane	P6	0.4408	1.1431	0.182	0.183
2,2-Dimethylpentane	I7	0.0015	0.0045	0.001	0.001
Methylcyclopentane	N6	0.2752	0.6969	0.098	0.098
2,4-Dimethylpentane	I7	0.0113	0.0341	0.005	0.005
2,2,3-Trimethylbutane	I7	0.0003	0.0009	0.000	0.000
Benzene	A6	0.1020	0.2398	0.028	0.028
3,3-Dimethylpentane	I7	0.0009	0.0027	0.000	0.000
Cyclohexane	N6	0.1193	0.3021	0.041	0.042
2-Methylhexane	I7	0.0464	0.1399	0.022	0.022
2,3-Dimethylpentane	I7	0.0218	0.0657	0.010	0.010
1,1-Dimethylcyclopentane	N7	0.0108	0.0319	0.004	0.004
3-Methylhexane	I7	0.0528	0.1592	0.024	0.024
1c,3-Dimethylcyclopentane	N7	0.0293	0.0866	0.013	0.013
1t,3-Dimethylcyclopentane	N7	0.0262	0.0774	0.012	0.012
3-Ethylpentane	I7	0.0042	0.0127	0.002	0.002
1t,2-Dimethylcyclopentane	N7	0.0532	0.1572	0.024	0.024
2,2,4-Trimethylpentane	I8	0.0002	0.0007	0.000	0.000

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n-Heptane	P7	0.1025	0.3091	0.047	0.048
1c,2-Dimethylcyclopentane	N7	0.0037	0.0109	0.002	0.002
Methylcyclohexane	N7	0.0868	0.2565	0.035	0.035
2,2-Dimethylhexane	I8	0.0058	0.0199	0.003	0.003
Ethylcyclopentane	N7	0.0133	0.0393	0.005	0.005
2,5-Dimethylhexane	I8	0.0021	0.0072	0.001	0.001
2,2,3-Trimethylpentane	I8	0.0002	0.0007	0.000	0.000
2,4-Dimethylhexane	I8	0.0036	0.0124	0.002	0.002
1c,2t,4-Trimethylcyclopentane	N8	0.0070	0.0236	0.003	0.003
3,3-Dimethylhexane	I8	0.0004	0.0014	0.000	0.000
1t,2c,4-Trimethylcyclopentane	N8	0.0079	0.0267	0.004	0.004
2,3,4-Trimethylpentane	I8	0.0016	0.0055	0.001	0.001
2,3,3-Trimethylpentane	I8	0.0001	0.0003	0.000	0.000
Toluene	A7	0.0484	0.1342	0.016	0.016
2,3-Dimethylhexane	I8	0.0029	0.0100	0.001	0.001
2-Methyl-3-ethylpentane	I8	0.0019	0.0065	0.001	0.001
2-Methylheptane	I8	0.0155	0.0533	0.008	0.008
4-Methylheptane	I8	0.0042	0.0144	0.002	0.002
3-Methyl-3-ethylpentane	I8	0.0004	0.0014	0.000	0.000
3,4-Dimethylhexane	I8	0.0005	0.0017	0.000	0.000
1c,2c,4-Trimethylcyclopentane	N8	0.0004	0.0013	0.000	0.000
1c,3-Dimethylcyclohexane	N8	0.0002	0.0007	0.000	0.000
3-Methylheptane	I8	0.0071	0.0244	0.004	0.004
1c,2t,3-Trimethylcyclopentane	N8	0.0097	0.0327	0.005	0.005
3-Ethylhexane	I8	0.0012	0.0041	0.001	0.001
1t,4-Dimethylcyclohexane	N8	0.0035	0.0118	0.002	0.002
2,2,5-Trimethylhexane	I9	0.0012	0.0046	0.001	0.001
3t-Ethylmethylcyclopentane	N8	0.0023	0.0078	0.001	0.001
2t-Ethylmethylcyclopentane	N8	0.0020	0.0067	0.001	0.001
1,1-Methylethylcyclopentane	N8	0.0066	0.0223	0.003	0.003
2,2,4-Trimethylhexane	I9	0.0004	0.0015	0.000	0.000
1t,2-Dimethylcyclohexane	N8	0.0054	0.0182	0.003	0.003
n-Octane	P8	0.0203	0.0698	0.010	0.010
1c,4-Dimethylcyclohexane	N8	0.0016	0.0054	0.001	0.001
i-Propylcyclopentane	I8	0.0005	0.0017	0.000	0.000
2,4,4-Trimethylhexane	I9	0.0001	0.0004	0.000	0.000
2,3,5-Trimethylhexane	I9	0.0002	0.0008	0.000	0.000
2,2,3,4-Tetramethylpentane	I9	0.0001	0.0004	0.000	0.000
2,3,4-Trimethylhexane	I9	0.0001	0.0004	0.000	0.000
1c,2-Dimethylcyclohexane	N8	0.0016	0.0054	0.001	0.001
2,2-Dimethylheptane	I9	0.0001	0.0004	0.000	0.000
1,1,4-Trimethylcyclohexane	N9	0.0059	0.0224	0.003	0.003
2,2,3-Trimethylhexane	I9	0.0018	0.0069	0.001	0.001
2,4-Dimethylheptane	I9	0.0005	0.0019	0.000	0.000
4,4-Dimethylheptane	I9	0.0001	0.0004	0.000	0.000
Ethylcyclohexane	N8	0.0030	0.0101	0.001	0.001
n-Propylcyclopentane	N8	0.0010	0.0034	0.000	0.000
1c,3c,5-Trimethylcyclohexane	N9	0.0002	0.0007	0.000	0.000
2,5-Dimethylheptane	I9	0.0004	0.0015	0.000	0.000
3,3-Dimethylheptane	I9	0.0005	0.0019	0.000	0.000
3,5-Dimethylheptane	I9	0.0003	0.0011	0.000	0.000
2,6-Dimethylheptane	I9	0.0003	0.0011	0.000	0.000
1,1,3-Trimethylcyclohexane	N9	0.0009	0.0034	0.000	0.000
Ethylbenzene	I8	0.0034	0.0109	0.001	0.001
1c,2t,4t-Trimethylcyclohexane	N9	0.0010	0.0038	0.001	0.001
2,3-Dimethylheptane	I9	0.0011	0.0042	0.001	0.001
1,3-Dimethylbenzene (m-Xylene)	A8	0.0051	0.0163	0.002	0.002
1,4-Dimethylbenzene (p-Xylene)	A8	0.0012	0.0038	0.000	0.000
3,4-Dimethylheptane	I9	0.0001	0.0004	0.000	0.000
3,4-Dimethylheptane (2)	I9	0.0006	0.0023	0.000	0.000
4-Ethylheptane	I9	0.0001	0.0004	0.000	0.000
4-Methyloctane	I9	0.0009	0.0035	0.001	0.001
2-Methyloctane	I9	0.0011	0.0042	0.001	0.001
1c,2t,3-Trimethylcyclohexane	N9	0.0003	0.0011	0.000	0.000

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3-Ethylheptane	I9	0.0002	0.0008	0.000	0.000
3-Methyloctane	I9	0.0013	0.0050	0.001	0.001
1c,2t,4c-Trimethylcyclohexane	I9	0.0001	0.0004	0.000	0.000
3,3-Diethylpentane	I9	0.0002	0.0008	0.000	0.000
1,2-Dimethylbenzene (o-Xylene)	A8	0.0024	0.0077	0.001	0.001
i-Butylcyclopentane	N9	0.0008	0.0030	0.000	0.000
n-Nonane	P9	0.0031	0.0120	0.002	0.002
1,1-Methylethylcyclohexane	N9	0.0005	0.0019	0.000	0.000
i-Propylbenzene	A9	0.0007	0.0025	0.000	0.000
i-Propylcyclohexane	N9	0.0002	0.0007	0.000	0.000
2,2-Dimethyloctane	I10	0.0001	0.0004	0.000	0.000
2,4-Dimethyloctane	I10	0.0001	0.0004	0.000	0.000
2,5-Dimethyloctane	I10	0.0001	0.0004	0.000	0.000
n-Butylcyclopentane	N9	0.0006	0.0023	0.000	0.000
3,3-Dimethyloctane	I10	0.0001	0.0004	0.000	0.000
n-Propylbenzene	A9	0.0005	0.0018	0.000	0.000
3,6-Dimethyloctane	I10	0.0005	0.0021	0.000	0.000
3-Methyl-5-ethylheptane	I10	0.0005	0.0021	0.000	0.000
1,3-Methylethylbenzene	A9	0.0004	0.0014	0.000	0.000
1,4-Methylethylbenzene	A9	0.0002	0.0007	0.000	0.000
1,3,5-Trimethylbenzene	A9	0.0001	0.0004	0.000	0.000
5-Methylnonane	I10	0.0002	0.0008	0.000	0.000
1,2-Methylethylbenzene	A9	0.0005	0.0018	0.000	0.000
3-Ethyloctane	I10	0.0001	0.0004	0.000	0.000
3-Methylnonane	I10	0.0002	0.0008	0.000	0.000
t-Butylbenzene	A10	0.0003	0.0012	0.000	0.000
i-Butylcyclohexane	N10	0.0001	0.0004	0.000	0.000
sec-Butylbenzene	A10	0.0001	0.0004	0.000	0.000
UnknownC9s	U9	0.0042	0.0162	0.002	0.002
n-Decane	P10	0.0005	0.0021	0.000	0.000
1,2,3-Trimethylbenzene	A9	0.0001	0.0004	0.000	0.000
Sec-Butylcyclohexane	A10	0.0001	0.0004	0.000	0.000
1,2-Methyl-i-propylbenzene	A10	0.0001	0.0004	0.000	0.000
1,4-Diethylbenzene	A10	0.0001	0.0004	0.000	0.000
1,2-Dimethyl-4-ethylbenzene	A10	0.0001	0.0004	0.000	0.000
UnknownC10s	U10	0.0019	0.0081	0.001	0.001
n-Undecane	P11	0.0001	0.0005	0.000	0.000
UnknownC11s	U11	0.0001	0.0005	0.000	0.000
TOTAL		100.00000	100.00000	15.8739	15.9604

BTEX COMPONENTS	**MOLE%**	**WT%**
BENZENE	0.1020	0.2398
TOLUENE	0.0484	0.1342
ETHYLBENZENE	0.0034	0.0109
XYLENES	0.0087	0.0278
TOTAL BTEX	0.1625	0.4127

	BTU @	14.650	14.730
LOW	NET DRY REAL :	1709.3 **/scf**	1718.7 **/scf**
	NET WET REAL :	1679.4 **/scf**	1688.8 **/scf**
HIGH	GROSS DRY REAL :	1865.1 **/scf**	1875.3 **/scf**
	GROSS WET REAL :	1832.5 **/scf**	1842.7 **/scf**
	NET DRY REAL :	19537.2 **/lb**	19643.9 **/lb**
	GROSS DRY REAL :	21325.5 **/lb**	21442.0 **/lb**
	RELATIVE DENSITY (AIR=1):		1.1467
	COMPRESSIBILITY FACTOR :		0.99132

(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. :	201312131	ANALYSIS NO. :	04
COMPANY NAME :	CONOCO PHILLIPS	ANALYSIS DATE:	DECEMBER 30, 2013
ACCOUNT NO. :		SAMPLE DATE :	DECEMBER 27, 2013
PRODUCER :		CYLINDER NO. :	1L GLASS JAR
LEASE NO. :		SAMPLED BY :	JOHN MOSER
NAME/DESCRIP :	PRODUCTION TANK @ 11:35 CONVERSE FAMILY 6-1H		EMPACT
FIELD DATA		SAMPLE TEMP. :	67
SAMPLE PRES. :		AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT		

SPECIFICATION	TEST METHOD	UNITS	RESULTS
API GRAVITY		API 60/60	38.7
RVP @100 DEG F	D323	PSIG	9.6
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			DARK BROWN, CLOUDY
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