



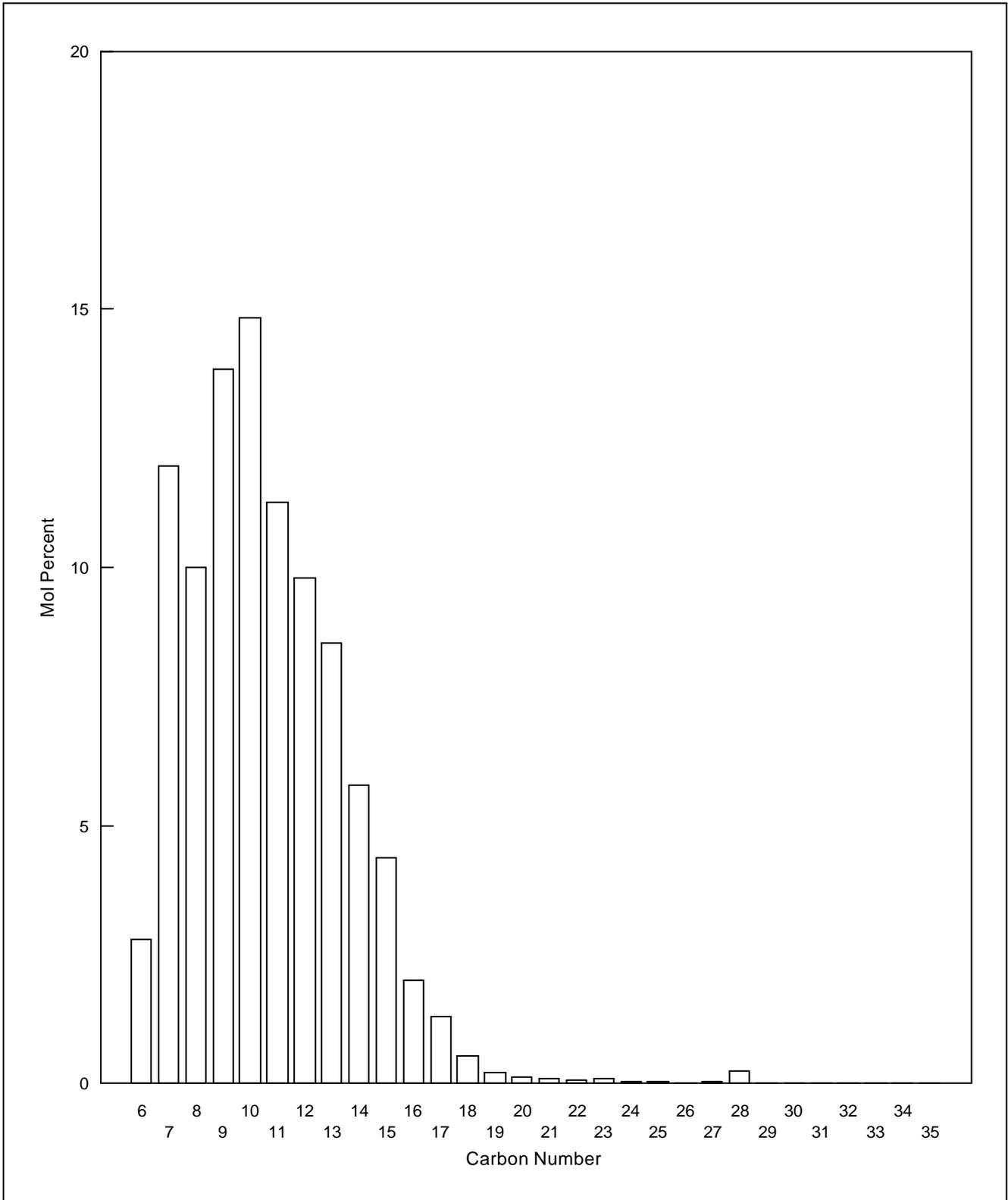
FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY  
On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 812443

Component		Mol %
Hexanes minus	C6-	1.95
Hexanes	C6	2.79
Heptanes	C7	11.97
Octanes	C8	10.02
Nonanes	C9	13.84
Decanes	C10	14.85
Undecanes	C11	11.25
Dodecanes	C12	9.79
Tridecanes	C13	8.53
Tetradecanes	C14	5.77
Pentadecanes	C15	4.38
Hexadecanes	C16	2.01
Heptadecanes	C17	1.31
Octadecanes	C18	0.55
Nonadecanes	C19	0.22
Eicosanes	C20	0.13
Heneicosanes	C21	0.10
Docosanes	C22	0.06
Tricosanes	C23	0.08
Tetracosanes	C24	0.04
Pentacosanes	C25	0.05
Hexacosanes	C26	0.02
Heptacosanes	C27	0.03
Octacosanes	C28	0.23
Nonacosanes	C29	0.01
Triacontanes	C30	0.00
Hentriacontanes	C31	0.01
Dotriacontanes	C32	0.01
Tritriacontanes	C33	0.00
Tetracontanes	C34	0.00
Pentatriacontanes Plus	C35+	0.00
TOTAL		100.00

Molecular Weight Calculated * :	142.4
Density @ 60 °F Calculated * :	0.7836

\*Calculation based on generalized properties as published by Katz and Firoozabadi

FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY  
On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 812443





Compositional Analysis of RCI Bottom Hole Gas Reservoir Fluid in Cylinder # 812443 from 1488.6 mRT

Component	Stock Tank	Stock Tank	Reservoir
	Liquid Mol %	Gas Mol %	Fluid Mol %
Hydrogen Sulphide	H2S	0.00	0.00
Carbon Dioxide	CO2	0.00	0.02
Nitrogen	N2	0.00	1.51
Methane	C1	0.55	90.85
Ethane	C2	0.16	4.18
Propane	C3	0.23	1.59
Iso-Butane	iC4	0.12	0.33
N-Butane	nC4	0.20	0.38
Iso-Pentane	iC5	0.19	0.13
N-Pentane	nC5	0.19	0.10
Hexanes	C6	2.80	0.20
Heptanes	C7	12.01	0.32
Octanes	C8	10.05	0.12
Nonanes	C9	13.88	0.10
Decanes	C10	14.90	0.07
Undecanes	C11	11.28	0.04
Dodecanes	C12	9.82	0.02
Tridecanes	C13	8.56	0.01
Tetradecanes	C14	5.79	0.01
Pentadecanes	C15	4.39	0.01
Hexadecanes	C16	2.02	0.00
Heptadecanes	C17	1.31	0.00
Octadecanes	C18	0.55	0.00
Nonadecanes	C19	0.22	0.00
Eicosanes Plus	C20+	0.77	0.01
TOTAL		100.00	100.00

Ratios				
Molar Ratio	:	0.0014	0.9986	1.0000
Mass Ratio	:	0.0103	0.9897	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	-- @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	543666 SCF	--

Stream Properties				
Molecular Weight	:	141.7	18.35	18.5
Density obs. (gm/cc)	:	0.7843 @ 60 °F	--	-- @ PT*
Gravity (AIR = 1.000)	:	48.8 °API @ 60 °F	0.635	-- °API
GHV (BTU/scf)	:	--	1114	--

Hexanes Plus Properties				
Mol %	:	98.35	0.77	0.91
Molecular Weight	:	143.32	101.69	106.88
Density (gm/cc @ 60 °F)	:	0.7865	0.6913	0.7081
Gravity (°API @ 60 °F)	:	48.25	72.99	68.14

Heptanes Plus Properties				
Mol %	:	95.55	0.57	0.71
Molecular Weight	:	145.06	107.89	114.77
Density (gm/cc @ 60 °F)	:	0.7884	0.6991	0.7182
Gravity (°API @ 60 °F)	:	47.80	70.69	65.34

Dodecanes Plus Properties				
Mol %	:	33.43	0.01	0.06
Molecular Weight	:	188.40	161.00	183.44
Density (gm/cc @ 60 °F)	:	0.8208	0.7521	0.8090
Gravity (°API @ 60 °F)	:	40.74	56.47	43.23

Eicosanes Plus Properties				
Mol %	:	0.77	0.00	0.01
Molecular Weight	:	336.99	--	336.99
Density (gm/cc @ 60 °F)	:	0.8829	--	0.8829
Gravity (°API @ 60 °F)	:	28.61	--	28.61

\* (P)ressure : 2189 psig \* (T)emperature : 156 °F



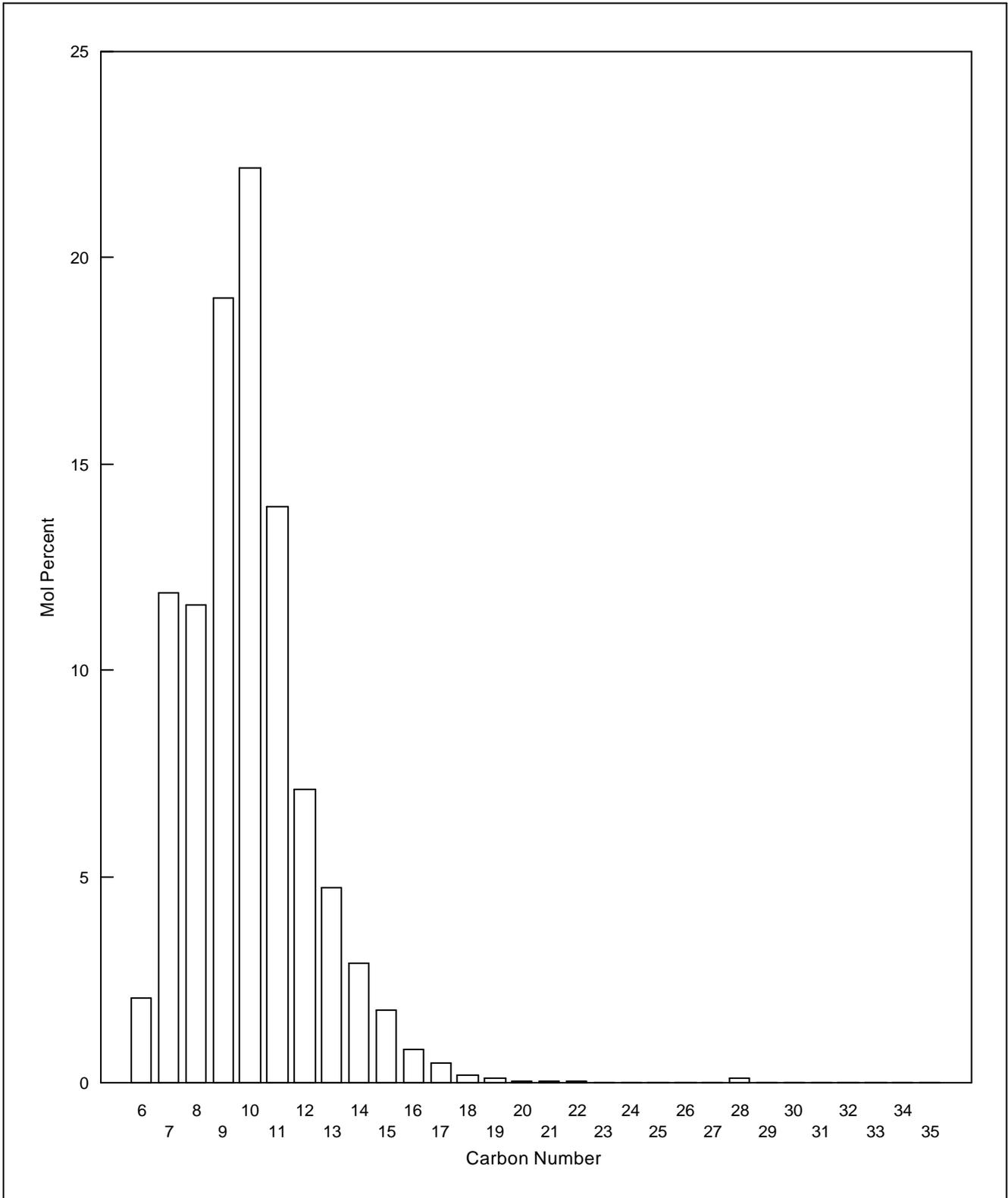
FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY  
On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 812459

Component		Mol %
Hexanes minus	C6-	0.80
Hexanes	C6	2.06
Heptanes	C7	11.87
Octanes	C8	11.59
Nonanes	C9	19.02
Decanes	C10	22.16
Undecanes	C11	13.97
Dodecanes	C12	7.10
Tridecanes	C13	4.74
Tetradecanes	C14	2.92
Pentadecanes	C15	1.78
Hexadecanes	C16	0.82
Heptadecanes	C17	0.49
Octadecanes	C18	0.20
Nonadecanes	C19	0.12
Eicosanes	C20	0.06
Heneicosanes	C21	0.06
Docosanes	C22	0.03
Tricosanes	C23	0.01
Tetracosanes	C24	0.01
Pentacosanes	C25	0.02
Hexacosanes	C26	0.02
Heptacosanes	C27	0.02
Octacosanes	C28	0.11
Nonacosanes	C29	0.02
Triacontanes	C30	0.00
Hentriacontanes	C31	0.00
Dotriacontanes	C32	0.00
Tritriacontanes	C33	0.00
Tetracontanes	C34	0.00
Pentatriacontanes Plus	C35+	0.00
TOTAL		100.00

Molecular Weight Calculated * :	134.2
Density @ 60 °F Calculated * :	0.7758

\*Calculation based on generalized properties as published by Katz and Firoozabadi

## FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 812459





Compositional Analysis of RCI Bottom Hole Gas Reservoir Fluid in Cylinder # 812459 from 1488.6 mRT

Component	Stock Tank		Stock Tank		Reservoir	
	Liquid	Gas	Liquid	Gas	Liquid	Gas
	Mol %	Mol %	Mol %	Mol %	Mol %	Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00	0.00	0.00
Carbon Dioxide	CO2	0.00	0.01	0.01	0.01	0.01
Nitrogen	N2	0.00	1.58	1.58	1.58	1.58
Methane	C1	0.55	91.08	90.93	90.93	90.93
Ethane	C2	0.16	4.19	4.18	4.18	4.18
Propane	C3	0.22	1.54	1.54	1.54	1.54
Iso-Butane	iC4	0.12	0.32	0.32	0.32	0.32
N-Butane	nC4	0.19	0.36	0.36	0.36	0.36
Iso-Pentane	iC5	0.16	0.11	0.11	0.11	0.11
N-Pentane	nC5	0.17	0.09	0.09	0.09	0.09
Hexanes	C6	2.04	0.19	0.19	0.19	0.19
Heptanes	C7	11.78	0.28	0.30	0.30	0.30
Octanes	C8	11.50	0.09	0.11	0.11	0.11
Nonanes	C9	18.87	0.07	0.10	0.10	0.10
Decanes	C10	21.99	0.05	0.08	0.08	0.08
Undecanes	C11	13.86	0.03	0.05	0.05	0.05
Dodecanes	C12	7.04	0.01	0.02	0.02	0.02
Tridecanes	C13	4.70	0.00	0.01	0.01	0.01
Tetradecanes	C14	2.90	0.00	0.00	0.00	0.00
Pentadecanes	C15	1.77	0.00	0.00	0.00	0.00
Hexadecanes	C16	0.81	0.00	0.00	0.00	0.00
Heptadecanes	C17	0.49	0.00	0.00	0.00	0.00
Octadecanes	C18	0.20	0.00	0.00	0.00	0.00
Nonadecanes	C19	0.12	0.00	0.00	0.00	0.00
Eicosanes Plus	C20+	0.36	0.00	0.02	0.02	0.02
TOTAL		100.00	100.00	100.00	100.00	100.00
<b>Ratios</b>						
Molar Ratio	:	0.0015	0.9985	1.0000	1.0000	1.0000
Mass Ratio	:	0.0109	0.9891	1.0000	1.0000	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	--	-- @ PT*	-- @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	514434 SCF	--	--	--
<b>Stream Properties</b>						
Molecular Weight	:	132.4	18.21	18.5	18.5	18.5
Density obs. (gm/cc)	:	0.7748 @ 60 °F	--	--	-- @ PT*	-- @ PT*
Gravity (AIR = 1.000)	:	50.9 °API @ 60 °F	0.630	--	-- °API	-- °API
GHV (BTU/scf)	:	--	1106	--	--	--
<b>Hexanes Plus Properties</b>						
Mol %	:	98.42	0.72	0.88	0.88	0.88
Molecular Weight	:	133.81	102.31	106.20	106.20	106.20
Density (gm/cc @ 60 °F)	:	0.7770	0.6921	0.7086	0.7086	0.7086
Gravity (°API @ 60 °F)	:	50.44	72.75	68.00	68.00	68.00
<b>Heptanes Plus Properties</b>						
Mol %	:	96.38	0.53	0.69	0.69	0.69
Molecular Weight	:	134.86	108.87	114.48	114.48	114.48
Density (gm/cc @ 60 °F)	:	0.7784	0.7003	0.7187	0.7187	0.7187
Gravity (°API @ 60 °F)	:	50.11	70.35	65.21	65.21	65.21
<b>Dodecanes Plus Properties</b>						
Mol %	:	18.39	0.01	0.05	0.05	0.05
Molecular Weight	:	183.29	161.00	177.40	177.40	177.40
Density (gm/cc @ 60 °F)	:	0.8173	0.7521	0.8006	0.8006	0.8006
Gravity (°API @ 60 °F)	:	41.47	56.47	45.07	45.07	45.07
<b>Eicosanes Plus Properties</b>						
Mol %	:	0.36	0.00	0.02	0.02	0.02
Molecular Weight	:	338.56	--	338.56	338.56	338.56
Density (gm/cc @ 60 °F)	:	0.8833	--	0.8833	0.8833	0.8833
Gravity (°API @ 60 °F)	:	28.54	--	28.54	28.54	28.54

\* (P)ressure : 2189 psig \* (T)emperature : 156 °F



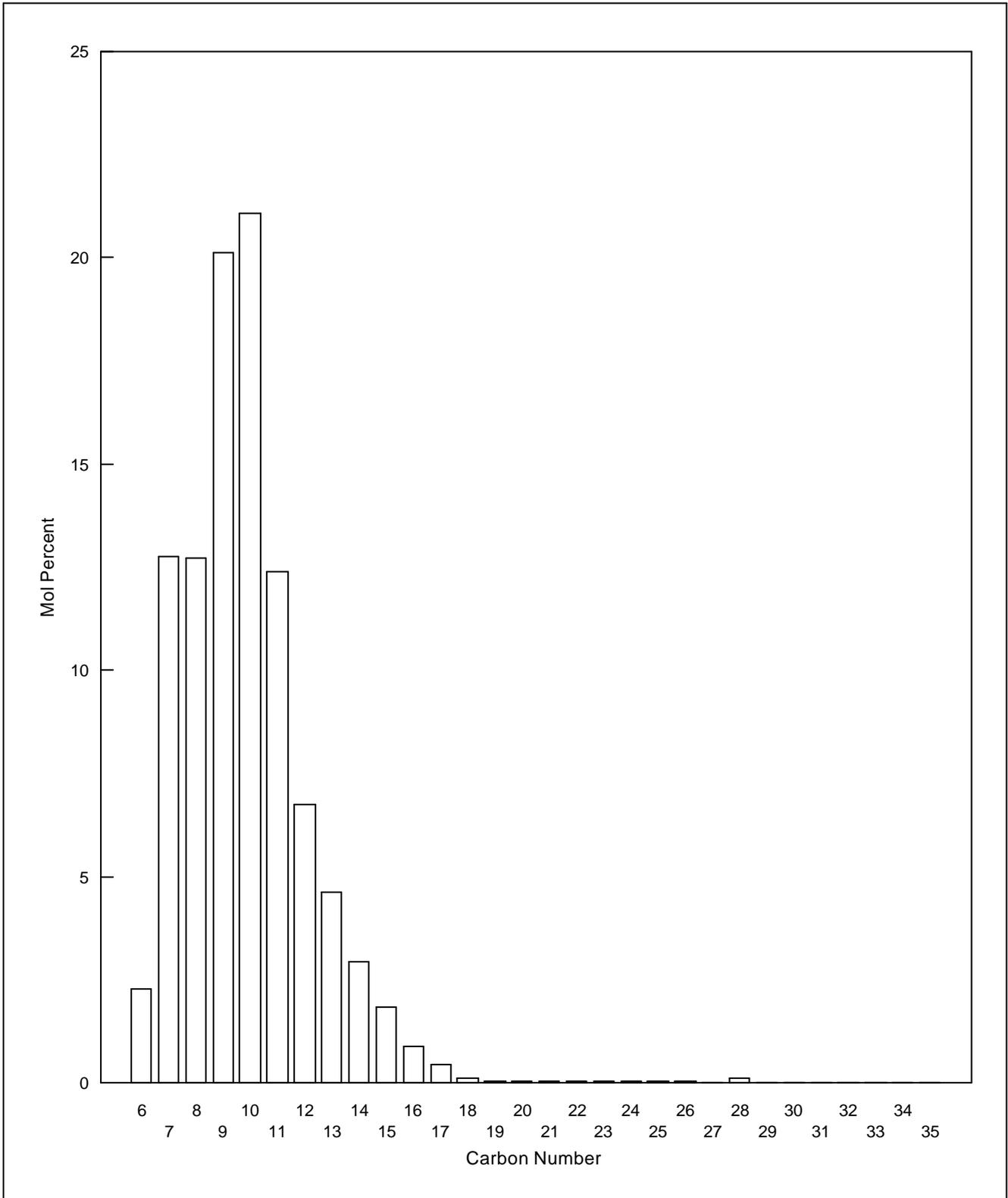
FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY  
On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 812677

Component		Mol %
Hexanes minus	C6-	0.53
Hexanes	C6	2.27
Heptanes	C7	12.77
Octanes	C8	12.74
Nonanes	C9	20.11
Decanes	C10	21.08
Undecanes	C11	12.41
Dodecanes	C12	6.76
Tridecanes	C13	4.62
Tetradecanes	C14	2.93
Pentadecanes	C15	1.85
Hexadecanes	C16	0.91
Heptadecanes	C17	0.44
Octadecanes	C18	0.14
Nonadecanes	C19	0.05
Eicosanes	C20	0.03
Heneicosanes	C21	0.03
Docosanes	C22	0.03
Tricosanes	C23	0.03
Tetracosanes	C24	0.03
Pentacosanes	C25	0.03
Hexacosanes	C26	0.04
Heptacosanes	C27	0.02
Octacosanes	C28	0.14
Nonacosanes	C29	0.01
Triacontanes	C30	0.00
Hentriacontanes	C31	0.00
Dotriacontanes	C32	0.00
Tritriacontanes	C33	0.00
Tetracontanes	C34	0.00
Pentatriacontanes Plus	C35+	0.00
TOTAL		100.00

Molecular Weight Calculated * :	133.2
Density @ 60 °F Calculated * :	0.7749

\*Calculation based on generalized properties as published by Katz and Firoozabadi

## FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 812677





Compositional Analysis of RCI Bottom Hole Gas Reservoir Fluid in Cylinder # 812677 from 1488.6 mRT

Component	Stock Tank		Stock Tank		Reservoir	
	Liquid	Gas	Liquid	Gas	Liquid	Gas
	Mol %	Mol %	Mol %	Mol %	Mol %	Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00	0.00	0.00
Carbon Dioxide	CO2	0.00	0.04	0.04	0.04	0.04
Nitrogen	N2	0.00	1.46	1.46	1.46	1.46
Methane	C1	0.55	91.11	90.96	90.96	90.96
Ethane	C2	0.16	4.20	4.19	4.19	4.19
Propane	C3	0.22	1.53	1.53	1.53	1.53
Iso-Butane	iC4	0.12	0.32	0.32	0.32	0.32
N-Butane	nC4	0.20	0.37	0.37	0.37	0.37
Iso-Pentane	iC5	0.18	0.12	0.12	0.12	0.12
N-Pentane	nC5	0.19	0.10	0.10	0.10	0.10
Hexanes	C6	2.25	0.20	0.20	0.20	0.20
Heptanes	C7	12.63	0.28	0.30	0.30	0.30
Octanes	C8	12.60	0.11	0.13	0.13	0.13
Nonanes	C9	19.89	0.09	0.12	0.12	0.12
Decanes	C10	20.85	0.05	0.08	0.08	0.08
Undecanes	C11	12.27	0.02	0.04	0.04	0.04
Dodecanes	C12	6.69	0.00	0.01	0.01	0.01
Tridecanes	C13	4.57	0.00	0.01	0.01	0.01
Tetradecanes	C14	2.90	0.00	0.00	0.00	0.00
Pentadecanes	C15	1.83	0.00	0.00	0.00	0.00
Hexadecanes	C16	0.90	0.00	0.00	0.00	0.00
Heptadecanes	C17	0.44	0.00	0.00	0.00	0.00
Octadecanes	C18	0.14	0.00	0.00	0.00	0.00
Nonadecanes	C19	0.05	0.00	0.00	0.00	0.00
Eicosanes Plus	C20+	0.39	0.00	0.02	0.02	0.02
TOTAL		100.00	100.00	100.00	100.00	100.00
<b>Ratios</b>						
Molar Ratio	:	0.0015	0.9985	1.0000	1.0000	1.0000
Mass Ratio	:	0.0107	0.9893	1.0000	1.0000	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	--	-- @ PT*	-- @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	512823 SCF	--	--	--
<b>Stream Properties</b>						
Molecular Weight	:	131.1	18.52	18.5	18.5	18.5
Density obs. (gm/cc)	:	0.7735 @ 60 °F	--	--	-- @ PT*	-- @ PT*
Gravity (AIR = 1.000)	:	51.3 °API @ 60 °F	0.641	--	-- °API	-- °API
GHV (BTU/scf)	:	--	1125	--	--	--
<b>Hexanes Plus Properties</b>						
Mol %	:	98.38	0.75	0.91	0.91	0.91
Molecular Weight	:	132.59	101.31	105.27	105.27	105.27
Density (gm/cc @ 60 °F)	:	0.7757	0.6908	0.7069	0.7069	0.7069
Gravity (°API @ 60 °F)	:	50.74	73.13	68.47	68.47	68.47
<b>Heptanes Plus Properties</b>						
Mol %	:	96.14	0.55	0.71	0.71	0.71
Molecular Weight	:	133.72	107.60	113.11	113.11	113.11
Density (gm/cc @ 60 °F)	:	0.7772	0.6988	0.7168	0.7168	0.7168
Gravity (°API @ 60 °F)	:	50.38	70.80	65.71	65.71	65.71
<b>Dodecanes Plus Properties</b>						
Mol %	:	17.90	0.00	0.04	0.04	0.04
Molecular Weight	:	183.86	--	183.86	183.86	183.86
Density (gm/cc @ 60 °F)	:	0.8177	--	0.8177	0.8177	0.8177
Gravity (°API @ 60 °F)	:	41.38	--	41.38	41.38	41.38
<b>Eicosanes Plus Properties</b>						
Mol %	:	0.39	0.00	0.02	0.02	0.02
Molecular Weight	:	349.05	--	349.05	349.05	349.05
Density (gm/cc @ 60 °F)	:	0.8862	--	0.8862	0.8862	0.8862
Gravity (°API @ 60 °F)	:	28.02	--	28.02	28.02	28.02

\* (P)ressure : 2189 psig \* (T)emperature : 156 °F



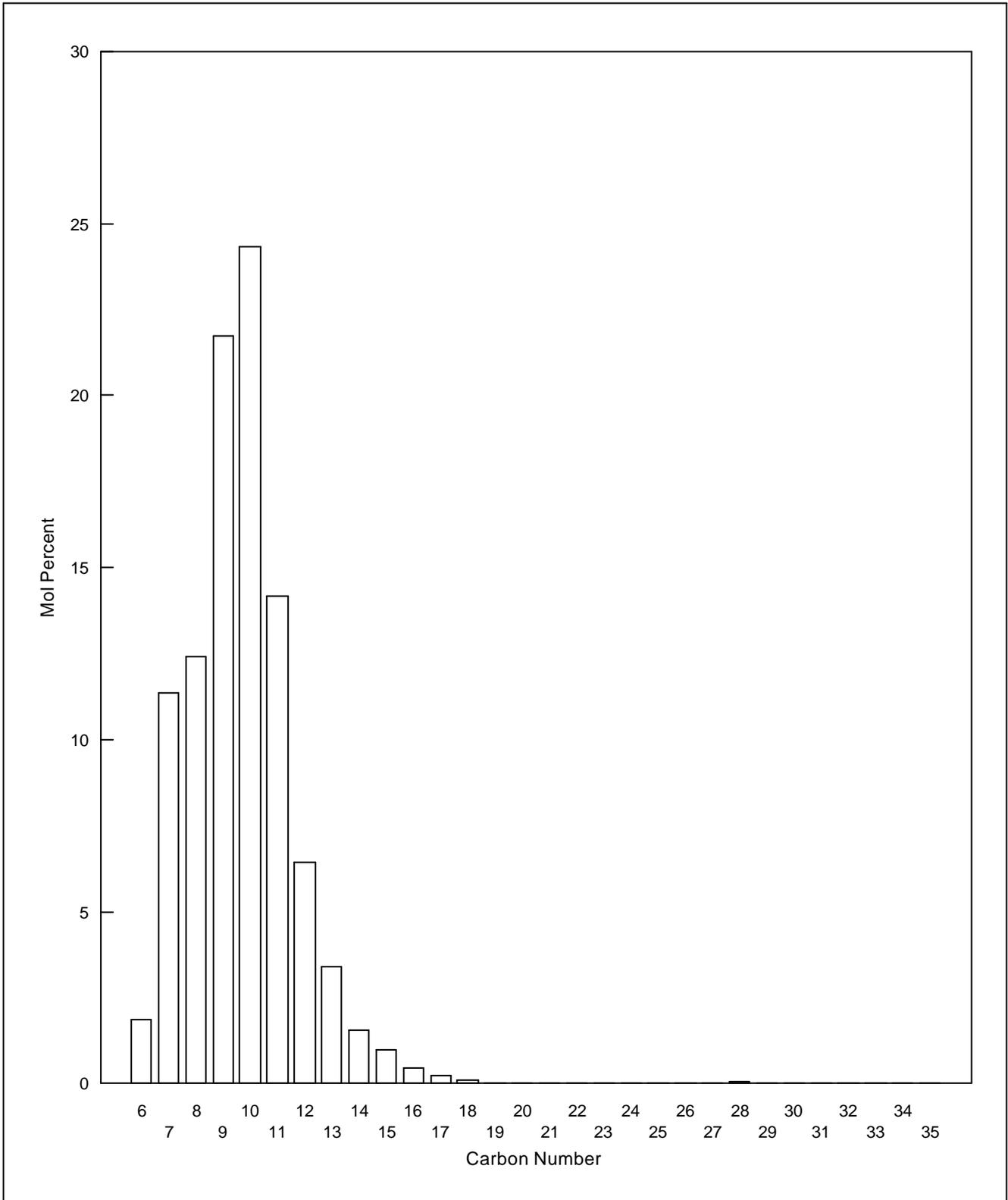
FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY  
On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 810693

Component		Mol %
Hexanes minus	C6-	0.66
Hexanes	C6	1.86
Heptanes	C7	11.34
Octanes	C8	12.42
Nonanes	C9	21.72
Decanes	C10	24.35
Undecanes	C11	14.19
Dodecanes	C12	6.44
Tridecanes	C13	3.39
Tetradecanes	C14	1.54
Pentadecanes	C15	0.99
Hexadecanes	C16	0.45
Heptadecanes	C17	0.24
Octadecanes	C18	0.09
Nonadecanes	C19	0.03
Eicosanes	C20	0.02
Heneicosanes	C21	0.01
Docosanes	C22	0.01
Tricosanes	C23	0.02
Tetracosanes	C24	0.02
Pentacosanes	C25	0.03
Hexacosanes	C26	0.02
Heptacosanes	C27	0.02
Octacosanes	C28	0.07
Nonacosanes	C29	0.02
Triacontanes	C30	0.02
Hentriacontanes	C31	0.01
Dotriacontanes	C32	0.01
Tritriacontanes	C33	0.01
Tetracontanes	C34	0.00
Pentatriacontanes Plus	C35+	0.00
TOTAL		100.00

Molecular Weight Calculated * :	131.1
Density @ 60 °F Calculated * :	0.7726

\*Calculation based on generalized properties as published by Katz and Firoozabadi

## FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 810693





Compositional Analysis of RCI Bottom Hole Gas Reservoir Fluid in Cylinder # 810693 from 1488.6 mRT

Component	Stock Tank		Stock Tank		Reservoir	
	Liquid	Gas	Liquid	Gas	Liquid	Gas
	Mol %	Mol %	Mol %	Mol %	Mol %	Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00	0.00	0.00
Carbon Dioxide	CO2	0.00	0.04	0.04	0.04	0.04
Nitrogen	N2	0.00	1.43	1.43	1.43	1.43
Methane	C1	0.55	91.18	91.03	91.03	91.03
Ethane	C2	0.16	4.19	4.18	4.18	4.18
Propane	C3	0.21	1.50	1.50	1.50	1.50
Iso-Butane	iC4	0.12	0.32	0.32	0.32	0.32
N-Butane	nC4	0.20	0.37	0.37	0.37	0.37
Iso-Pentane	iC5	0.19	0.13	0.13	0.13	0.13
N-Pentane	nC5	0.19	0.10	0.10	0.10	0.10
Hexanes	C6	1.84	0.19	0.19	0.19	0.19
Heptanes	C7	11.23	0.29	0.31	0.31	0.31
Octanes	C8	12.30	0.10	0.12	0.12	0.12
Nonanes	C9	21.51	0.08	0.11	0.11	0.11
Decanes	C10	24.11	0.05	0.09	0.09	0.09
Undecanes	C11	14.05	0.02	0.04	0.04	0.04
Dodecanes	C12	6.38	0.01	0.02	0.02	0.02
Tridecanes	C13	3.36	0.00	0.01	0.01	0.01
Tetradecanes	C14	1.53	0.00	0.00	0.00	0.00
Pentadecanes	C15	0.98	0.00	0.00	0.00	0.00
Hexadecanes	C16	0.45	0.00	0.00	0.00	0.00
Heptadecanes	C17	0.24	0.00	0.00	0.00	0.00
Octadecanes	C18	0.09	0.00	0.00	0.00	0.00
Nonadecanes	C19	0.03	0.00	0.00	0.00	0.00
Eicosanes Plus	C20+	0.29	0.00	0.01	0.01	0.01
TOTAL		100.00	100.00	100.00	100.00	100.00
<b>Ratios</b>						
Molar Ratio	:	0.0015	0.9985	1.0000		
Mass Ratio	:	0.0105	0.9895	1.0000		
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	--	@ PT*	
Gas Liquid Ratio	:	1.0000 bbl @ SC	514265 SCF	--		
<b>Stream Properties</b>						
Molecular Weight	:	129.2	18.80	18.5		
Density obs. (gm/cc)	:	0.7714 @ 60 °F	--	--	@ PT*	
Gravity (AIR = 1.000)	:	51.8 °API @ 60 °F	0.651	--	°API	
GHV (BTU/scf)	:	--	1139	--		
<b>Hexanes Plus Properties</b>						
Mol %	:	98.37	0.74	0.90		
Molecular Weight	:	130.58	101.93	105.70		
Density (gm/cc @ 60 °F)	:	0.7736	0.6916	0.7072		
Gravity (°API @ 60 °F)	:	51.24	72.89	68.38		
<b>Heptanes Plus Properties</b>						
Mol %	:	96.54	0.55	0.71		
Molecular Weight	:	131.47	108.13	113.11		
Density (gm/cc @ 60 °F)	:	0.7748	0.6994	0.7167		
Gravity (°API @ 60 °F)	:	50.95	70.61	65.74		
<b>Dodecanes Plus Properties</b>						
Mol %	:	13.33	0.01	0.04		
Molecular Weight	:	179.84	161.00	173.69		
Density (gm/cc @ 60 °F)	:	0.8149	0.7521	0.7948		
Gravity (°API @ 60 °F)	:	41.97	56.47	46.36		
<b>Eicosanes Plus Properties</b>						
Mol %	:	0.29	0.00	0.01		
Molecular Weight	:	366.52	--	366.52		
Density (gm/cc @ 60 °F)	:	0.8911	--	0.8911		
Gravity (°API @ 60 °F)	:	27.14	--	27.14		

\* (P)ressure : 2189 psig \* (T)emperature : 156 °F



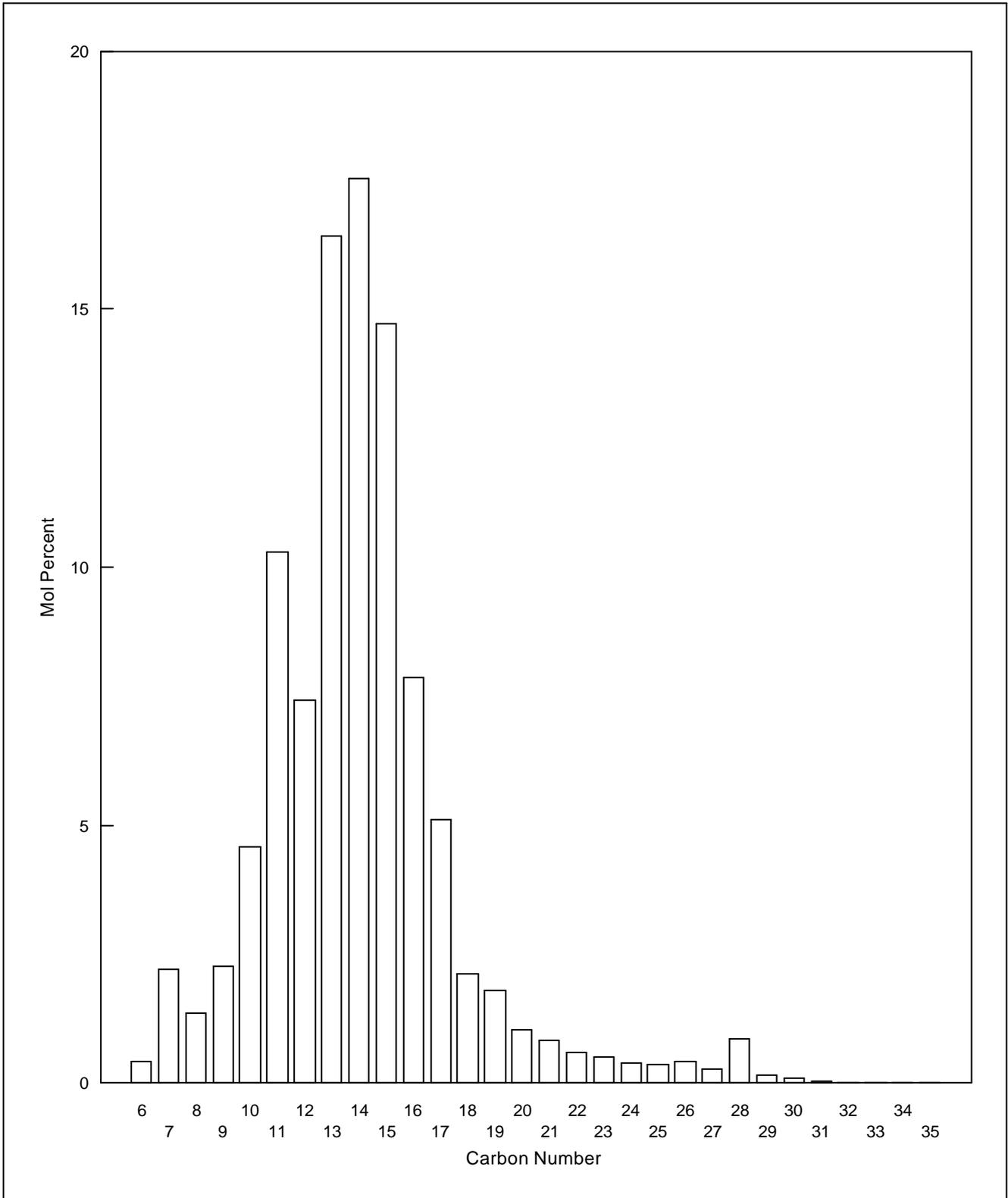
FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY  
On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 812523

Component		Mol %
Hexanes minus	C6-	0.23
Hexanes	C6	0.43
Heptanes	C7	2.22
Octanes	C8	1.36
Nonanes	C9	2.28
Decanes	C10	4.57
Undecanes	C11	10.31
Dodecanes	C12	7.41
Tridecanes	C13	16.42
Tetradecanes	C14	17.54
Pentadecanes	C15	14.71
Hexadecanes	C16	7.86
Heptadecanes	C17	5.12
Octadecanes	C18	2.12
Nonadecanes	C19	1.79
Eicosanes	C20	1.04
Heneicosanes	C21	0.83
Docosanes	C22	0.60
Tricosanes	C23	0.51
Tetracosanes	C24	0.40
Pentacosanes	C25	0.35
Hexacosanes	C26	0.41
Heptacosanes	C27	0.28
Octacosanes	C28	0.86
Nonacosanes	C29	0.15
Triacontanes	C30	0.11
Hentriacontanes	C31	0.05
Dotriacontanes	C32	0.02
Tritriacontanes	C33	0.01
Tetracontanes	C34	0.01
Pentatriacontanes Plus	C35+	0.00
TOTAL		100.00

Molecular Weight Calculated * :	190.8
Density @ 60 °F Calculated * :	0.8228

\*Calculation based on generalized properties as published by Katz and Firoozabadi

## FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 812523





Compositional Analysis of RCI Bottom Hole Gas Reservoir Fluid in Cylinder # 812523 from 1258.7 mRT

Component	Stock Tank	Stock Tank	Reservoir
	Liquid Mol %	Gas Mol %	Fluid Mol %
Hydrogen Sulphide	H2S	0.00	0.00
Carbon Dioxide	CO2	0.00	0.19
Nitrogen	N2	0.00	1.30
Methane	C1	0.57	94.94
Ethane	C2	0.10	2.64
Propane	C3	0.06	0.43
Iso-Butane	iC4	0.06	0.15
N-Butane	nC4	0.03	0.05
Iso-Pentane	iC5	0.07	0.05
N-Pentane	nC5	0.02	0.01
Hexanes	C6	0.43	0.05
Heptanes	C7	2.20	0.11
Octanes	C8	1.35	0.03
Nonanes	C9	2.26	0.02
Decanes	C10	4.54	0.01
Undecanes	C11	10.24	0.00
Dodecanes	C12	7.36	0.00
Tridecanes	C13	16.31	0.00
Tetradecanes	C14	17.42	0.00
Pentadecanes	C15	14.61	0.00
Hexadecanes	C16	7.81	0.00
Heptadecanes	C17	5.08	0.00
Octadecanes	C18	2.11	0.00
Nonadecanes	C19	1.78	0.00
Eicosanes Plus	C20+	5.59	0.02
TOTAL		100.00	100.00

**Ratios**

Molar Ratio	:	0.0001	0.9999	1.0000
Mass Ratio	:	0.0013	0.9987	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	-- @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	4851356 SCF	--

**Stream Properties**

Molecular Weight	:	189.4	17.04	17.1
Density obs. (gm/cc)	:	0.8220 @ 60 °F	--	-- @ PT*
Gravity (AIR = 1.000)	:	40.5 °API @ 60 °F	0.590	-- °API
GHV (BTU/scf)	:	--	1043	--

**Hexanes Plus Properties**

Mol %	:	99.09	0.22	0.24
Molecular Weight	:	190.90	98.77	99.91
Density (gm/cc @ 60 °F)	:	0.8232	0.6875	0.6983
Gravity (°API @ 60 °F)	:	40.23	74.13	70.95

**Heptanes Plus Properties**

Mol %	:	98.66	0.17	0.19
Molecular Weight	:	191.36	103.12	108.82
Density (gm/cc @ 60 °F)	:	0.8235	0.6932	0.7059
Gravity (°API @ 60 °F)	:	40.17	72.44	68.78

**Dodecanes Plus Properties**

Mol %	:	78.06	0.00	0.02
Molecular Weight	:	206.71	--	206.71
Density (gm/cc @ 60 °F)	:	0.8321	--	0.8321
Gravity (°API @ 60 °F)	:	38.38	--	38.38

**Eicosanes Plus Properties**

Mol %	:	5.59	0.00	0.02
Molecular Weight	:	329.87	--	329.87
Density (gm/cc @ 60 °F)	:	0.8808	--	0.8808
Gravity (°API @ 60 °F)	:	29.00	--	29.00

\* (P)ressure : 1789 psig \* (T)emperature : 147 °F



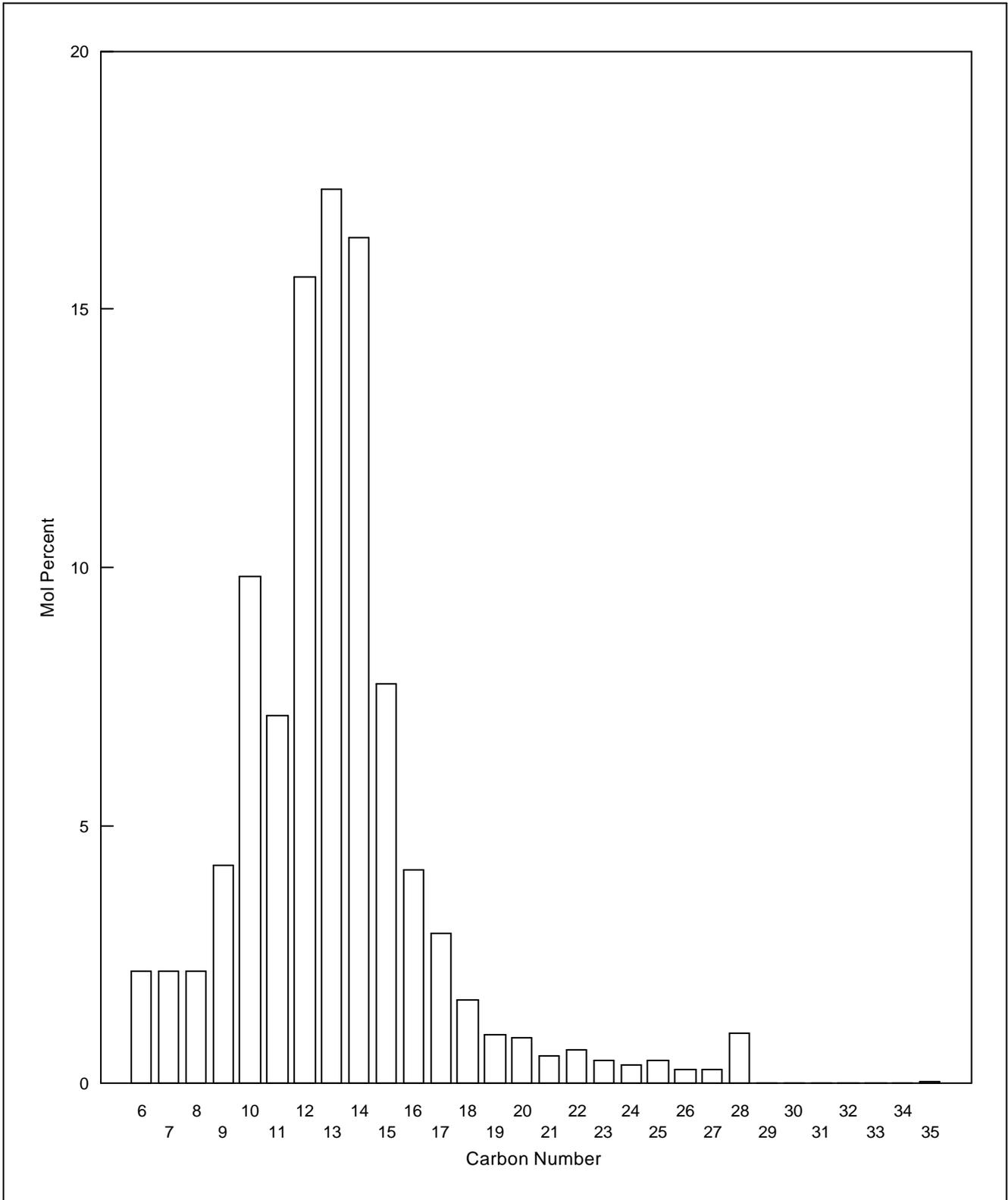
FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY  
On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 812606

Component		Mol %
Hexanes minus	C6-	0.68
Hexanes	C6	2.19
Heptanes	C7	2.18
Octanes	C8	2.17
Nonanes	C9	4.22
Decanes	C10	9.82
Undecanes	C11	7.12
Dodecanes	C12	15.63
Tridecanes	C13	17.33
Tetradecanes	C14	16.39
Pentadecanes	C15	7.75
Hexadecanes	C16	4.14
Heptadecanes	C17	2.91
Octadecanes	C18	1.62
Nonadecanes	C19	0.95
Eicosanes	C20	0.88
Heneicosanes	C21	0.54
Docosanes	C22	0.64
Tricosanes	C23	0.45
Tetracosanes	C24	0.36
Pentacosanes	C25	0.46
Hexacosanes	C26	0.26
Heptacosanes	C27	0.29
Octacosanes	C28	0.99
Nonacosanes	C29	0.00
Triacontanes	C30	0.00
Hentriacontanes	C31	0.00
Dotriacontanes	C32	0.00
Tritriacontanes	C33	0.00
Tetratriacontanes	C34	0.00
Pentatriacontanes Plus	C35+	0.03
TOTAL		100.00

Molecular Weight Calculated * :	177.0
Density @ 60 °F Calculated * :	0.8134

\*Calculation based on generalized properties as published by Katz and Firoozabadi

## FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 812606





Compositional Analysis of RCI Bottom Hole Gas Reservoir Fluid in Cylinder # 812606 from 1258.7 mRT

Component	Stock Tank	Stock Tank	Reservoir
	Liquid Mol %	Gas Mol %	Fluid Mol %
Hydrogen Sulphide	H2S	0.00	0.00
Carbon Dioxide	CO2	0.00	0.18
Nitrogen	N2	0.00	1.25
Methane	C1	0.57	94.94
Ethane	C2	0.10	2.59
Propane	C3	0.06	0.43
Iso-Butane	iC4	0.07	0.19
N-Butane	nC4	0.04	0.07
Iso-Pentane	iC5	0.09	0.06
N-Pentane	nC5	0.02	0.01
Hexanes	C6	2.18	0.07
Heptanes	C7	2.17	0.12
Octanes	C8	2.16	0.03
Nonanes	C9	4.21	0.02
Decanes	C10	9.80	0.01
Undecanes	C11	7.10	0.01
Dodecanes	C12	15.59	0.00
Tridecanes	C13	17.29	0.00
Tetradecanes	C14	16.35	0.00
Pentadecanes	C15	7.73	0.00
Hexadecanes	C16	4.13	0.00
Heptadecanes	C17	2.90	0.00
Octadecanes	C18	1.62	0.00
Nonadecanes	C19	0.95	0.00
Eicosanes Plus	C20+	4.86	0.02
TOTAL		100.00	100.00

**Ratios**

Molar Ratio	:	0.0001	0.9999	1.0000
Mass Ratio	:	0.0015	0.9985	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	-- @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	4277971 SCF	--

**Stream Properties**

Molecular Weight	:	176.1	17.09	17.1
Density obs. (gm/cc)	:	0.8130 @ 60 °F	--	-- @ PT*
Gravity (AIR = 1.000)	:	42.4 °API @ 60 °F	0.591	-- °API
GHV (BTU/scf)	:	--	1047	--

**Hexanes Plus Properties**

Mol %	:	99.05	0.26	0.28
Molecular Weight	:	177.51	99.38	101.28
Density (gm/cc @ 60 °F)	:	0.8142	0.6883	0.6979
Gravity (°API @ 60 °F)	:	42.12	73.89	71.06

**Heptanes Plus Properties**

Mol %	:	96.86	0.19	0.21
Molecular Weight	:	179.62	105.05	110.14
Density (gm/cc @ 60 °F)	:	0.8159	0.6956	0.7072
Gravity (°API @ 60 °F)	:	41.77	71.72	68.39

**Dodecanes Plus Properties**

Mol %	:	71.42	0.00	0.02
Molecular Weight	:	197.32	--	197.32
Density (gm/cc @ 60 °F)	:	0.8266	--	0.8266
Gravity (°API @ 60 °F)	:	39.52	--	39.52

**Eicosanes Plus Properties**

Mol %	:	4.86	0.00	0.02
Molecular Weight	:	328.79	--	328.79
Density (gm/cc @ 60 °F)	:	0.8804	--	0.8804
Gravity (°API @ 60 °F)	:	29.07	--	29.07

\* (P)ressure : 1789 psig \* (T)emperature : 147 °F