

## **HYDROCARBON LIQUID ANALYSIS**

**Container Identification** 13000076C

Operator Name	Laboratory Number
ENCANA CORPORATION	14CF835566C
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Unique Well Identifier	Well Name
104/03-15-079-17W6/00	ECA CRP Hz SUNRISE E03-21-079-17

SUNRISE MONTNEY AGAT/FORT ST. JOHN	Field or Area	Pool or Zone	Sampler's Company
	SUNRISE	MONTNEY	AGAT/FORT ST. JOHN

Well License	Elevation	Test Type	Test No.	Name of Sampler
29387	KB m 784.40 GRD m 778.60			TH

Test Interval or Perfs mKB	Sampling Point		Separator	Reservoir	Source	Sampled	Received
2560.0 - 4304.8	TEST VESSEL	Pressure (kPa)			3200	3200	3100
		Temperature			8	8	21

Date Sampled	Location - Approved By - Title					
May 02, 2014	Grande Prairie - Jeff Housman - Reporter					
Other Information						

SFC: E3-21-079-17W6

Results relate only to the items tested

COMP.	MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
N2	TRACE	TRACE	TRACE
CO2	0.0004	0.0002	0.0002
H2S	0.0000	0.0000	0.0000
C1	0.1038	0.0168	0.0395
C2	0.0435	0.0132	0.0260
C3	0.0352	0.0157	0.0218
IC4	0.0164	0.0096	0.0120
NC4	0.0252	0.0148	0.0178
IC5	0.0173	0.0126	0.0142
NC5	0.0198	0.0144	0.0161
C6	0.0462	0.0401	0.0425
C7+	0.6922	0.8626	0.8099
TOTAL	1.0000	1.0000	1.0000

This analysis and calculations are based on GPA 2186, GPA 2286, ASTM 2597, and ASTM 5307

## Observed Properties of C7+ Residue (15/15° C)

Density	Relative Density	API @ 15°
751.1 kg/m³	0.7518	56.7

Relative Molecular Mass 123.5

## Calculated Properties of Total Sample (15/15° C)

Density	Relative Density	API @ 15°
705.1 kg/m <sup>3</sup>	0.7057	69.0

Relative Molecular Mass 99.1

Gas Equivalency 168.3

Calculations for C6 and C7 are based on Boiling Point Grouping. If Carbon Number Grouping had been done, the mole fractions would be (C6: 0.0843) (C7+:0.6542)







## **PROPERTIES OF C6+ FRACTION**

File No.	Company	UWI / LSD
14CF835566C	ENCANA CORPORATION	104/03-15-079-17W6/00

BOILING POINT RANGE (C)	COMPONENT		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
36.1 - 68.9	HEXANES	C6	0.0457	0.0397	0.0422
68.9 - 98.3	HEPTANES	C7	0.1007	0.1002	0.1017
98.3 - 125.6	OCTANES	C8	0.1209	0.1369	0.1358
125.6 - 150.6	NONANES	C9	0.0884	0.1125	0.1089
150.6 - 173.9	DECANES	C10	0.0722	0.1020	0.0971
173.9 - 196.1	UNDECANES	C11	0.0449	0.0697	0.0656
196.1 - 215.0	DODECANES	C12	0.0276	0.0467	0.0434
215.0 - 235.0	TRIDECANES	C13	0.0244	0.0446	0.0411
235.0 - 252.2	TETRADECANES	C14	0.0153	0.0302	0.0276
252.2 - 270.6	PENTADECANES	C15	0.0081	0.0171	0.0155
270.6 - 287.8	HEXADECANES	C16	0.0049	0.0111	0.0100
287.8 - 302.8	HEPTADECANES		0.0041	0.0099	0.0088
302.8 - 317.2	OCTADECANES		0.0014	0.0034	0.0030
317.2 - 330.0	NONADECANES		0.0012	0.0033	0.0029
330.0 - 344.4	EICOSANES		0.0008	0.0021	0.0019
344.4 - 357.2	HENEICOSANES	_	0.0005	0.0016	0.0014
357.2 - 369.4	DOCOSANES		0.0004	0.0012	0.0011
369.4 - 380.0	TRICOSANES		0.0003	0.0011	0.0010
380.0 - 391.1	TETRACOSANES		0.0002	0.0007	0.0006
391.1 - 401.7	PENTACOSANES		0.0002	0.0006	0.0005
401.7 - 412.2	HEXACOSANES		0.0001	0.0004	0.0003
412.2 - 422.2	HEPTACOSANES		0.0001	0.0002	0.0002
422.2 - 431.7	OCTACOSANES		0.0000	0.0000	0.0000
431.7 - 441.1	NONACOSANES		0.0000	0.0000	0.0000
441.1 - PLUS	TRIACONTANES	C30+	0.0000	0.0000	0.0000
BOILING POINT RANGE (C)	Aromatics		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
80.0	BENZENE	C6	0.0099	0.0076	0.0060
110.6	TOLUENE	C7	0.0385	0.0352	0.0283
136.2	ETHYLBENZENE	C8	0.0014	0.0015	0.0012
138.4 - 144.4	XYLENES	C8	0.0403	0.0425	0.0340
168.9	1,2,4 TRIMETHYLBENZENE	C9	0.0052	0.0062	0.0050
BOILING POINT RANGE (C)	Naphthenes		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
48.9	CYCLOPENTANE	CC5	0.0005	0.0004	0.0003
72.2	METHYLCYCLOPENTANE	MCC5	0.0087	0.0072	0.0067
81.1	CYCLOHEXANE	CC6	0.0195	0.0163	0.0146
101.1	METHYLCYCLOHEXANE	MCC6	0.0520	0.0506	0.0457

The above hexanes plus values are based upon a measured mass fraction and a calculated mole fraction, and assume a total hydrocarbon recovery from the chromatographic system.



