N.E.B. COPY

AGAT® Laboratories

HYDROCARBON LIQUID ANALYSIS

Container Identification	Laboratory Number
PB#3	CG63754C

Operator Name
PARAMOUNT RESOURCES LTD.

Unique Well Identifier	Well Name	Elevation
Not Available	PARA et al LIARD N-01	KB m 492.10 GRD m 487.00

Field or Area	Pool or Zone	Sampler's Company
FORT LIARD	MATTSON	ALPINE

Test Type	Test No.	Test Recovery	Name of Sampler
DST	#1	LATITUDE 60 deg 10' LONGITUDE 123 deg 15'	

Test Interval or Perfs		Sampling Point
1682.00-1691.00		3
mKB		

	Separator	Reservoir	Source	Sampled	Received
Pressure (kPa)					
Temperature (°C)					

Date Sampled	Date Received	Date Reported	Analyst
Jan 07, 2001	Jan 12, 2001	Jan 15, 2001	KK

Other Information

COMP.	MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
N2	0.0000	0.0000	0.0000
CO2	0.0000	0.0000	0.0000
H2S	0.0000	0.0000	0.0000
C1	0.0006	0.0001	0.0002
C2	0.0012	0.0003	0.0006
C3	0.0016	0.0005	0.0008
IC4	0.0008	0.0003	0.0005
NC4	0.0019	0.0008	0.0011
IC5	0.0024	0.0013	0.0016
NC5	0.0033	0.0018	0.0022
C6	0.0240	0.0150	0.0177
C7+	0.9642	0.9799	0.9753
TOTAL	1.0000	1.0000	1.0000

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

Density	*Relative Density*	*API @ 15°*
787.4 kg/m³	0.7881	48.0

Relative Molecular Mass: 139.3

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

Density	*Relative Density*	*API @ 15°*
783.8 kg/m³	0.7845	48.9

Relative Molecular Mass: 137.1

Calculations for C6 and C7 are based on Boiling Point Grouping. If Carbon Number Grouping had been done, the mole fractions would be (C6: 0.0642) (C7+:0.9240)

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PROPERTIES OF C6+ FRACTION

File No.	Company	Well No.
CG63754C	PARAMOUNT RESOURCES LTD.	Not Available

BOILING POINT RANGE (C)	COMPONENT		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
36.1 - 68.9	HEXANES	C6	0.0234	0.0147	0.0174
68.9 - 98.3	HEPTANES	C7	0.0566	0.0434	0.0475
98.3 - 125.6	OCTANES	C8	0.0948	0.0828	0.0883
125.6 - 150.6	NONANES	C9	0.1088	0.1067	0.1114
150.6 - 173.9	DECANES	C10	0.1239	0.1348	0.1384
173.9 - 196.1	UNDECANES	C11	0.1003	0.1199	0.1218
196.1 - 215.0	DODECANES	C12	0.0686	0.0893	0.0896
215.0 - 235.0	TRIDECANES	C13	0.0538	0.0758	0.0754
235.0 - 252.2	TETRADECANES	C14	0.0324	0.0492	0.0485
252.2 - 270.6	PENTADECANES	C15	0.0192	0.0313	0.0306
270.6 - 287.8	HEXADECANES	C16	0.0092	0.0159	0.0154
287.8 - 302.8	HEPTADECANES	C17	0.0047	0.0086	0.0083
302.8 - 317.2	OCTADECANES	C18	0.0011	0.0021	0.0020
317.2 - 330.0	NONADECANES	C19	0.0003	0.0006	0.0006
330.0 - 344.4	EICOSANES	C20	0.0001	0.0002	0.0002
344.4 - 357.2	HENEICOSANES	C21	0.0000	0.0001	0.0001
357.2 - 369.4	DOCOSANES	C22	0.0000	0.0000	0.0000
369.4 - 380.0	TRICOSANES	C23	0.0000	0.0000	0.0000
380.0 - 391.1	TETRACOSANES	C24	0.0000	0.0000	0.0000
391.1 - 401.7	PENTACOSANES	C25	0.0000	0.0000	0.0000
401.7 - 412.2	HEXACOSANES	C26	0.0000	0.0000	0.0000
412.2 - 422.2	HEPTACOSANES	C27	0.0000	0.0000	0.0000
422.2 - 431.7	OCTACOSANES	C28	0.0000	0.0000	0.0000
431.7 - 441.1	NONACOSANES	C29	0.0000	0.0000	0.0000
441.1 - PLUS	TRIACONTANES PLUS	C30+	0.0000	0.0000	0.0000

BOILING POINT RANGE (C)	AROMATICS		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
80.0	BENZENE	C6	0.0085	0.0051	0.0043
110.6	TOLUENE	C7	0.0725	0.0511	0.0444
136.2	ETHYLBENZENE	C8	0.0100	0.0081	0.0071
138.4 - 144.4	XYLENES	C8	0.0822	0.0667	0.0576
168.9	1.2.4 TRIMETHYLBENZENE	C9	0.0205	0.0189	0.0163

BOILING POINT RANGE (C)	NAPHTHENES		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
48.9	CYCLOPENTANE	CC5	0.0006	0.0003	0.0003
72.2	METHYLCYCLOPENTANE	MCC5	0.0073	0.0047	0.0046
81.1	CYCLOHEXANE	CC6	0.0244	0.0157	0.0152
101.1	METHYLCYCLOHEXANE	MCC6	0.0650	0.0488	0.0478

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PROPERTIES OF C6+ FRACTION

File No.	Company	Well No.
C69078A	PARAMOUNT RESOURCES LTD.	N-01

BOILING POINT RANGE (C)	COMPONENT		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
36.1 - 68.9	HEXANES	C6	0.0884	0.0672	0.0756
68.9 - 98.3	HEPTANES	C7	0.1056	0.1045	0.1128
98.3 - 125.6	OCTANES	C8	0.0976	0.1102	0.1157
125.6 - 150.6	NONANES	C9	0.0513	0.0650	0.0669
150.6 - 173.9	DECANES	C10	0.0479	0.0674	0.0682
173.9 - 196.1	UNDECANES	C11	0.0290	0.0448	0.0448
196.1 - 215.0	DODECANES	C12	0.0163	0.0274	0.0270
215.0 - 235.0	TRIDECANES	C13	0.0129	0.0235	0.0230
235.0 - 252.2	TETRADECANES	C14	0.0081	0.0158	0.0153
252.2 - 270.6	PENTADECANES	C15	0.0055	0.0115	0.0110
270.6 - 287.8	HEXADECANES	C16	0.0016	0.0037	0.0035
287.8 - 302.8	HEPTADECANES	C17	0.0010	0.0024	0.0023
302.8 - 317.2	OCTADECANES	C18	0.0003	0.0009	0.0008
317.2 - 330.0	NONADECANES	C19	0.0002	0.0004	0.0004
330.0 - 344.4	EICOSANES	C20	0.0000	0.0001	0.0001
344.4 - 357.2	HENEICOSANES	C21	0.0000	0.0001	0.0001
357.2 - 369.4	DOCOSANES	C22	0.0000	0.0000	0.0000
369.4 - 380.0	TRICOSANES	C23	0.0000	0.0000	0.0000
380.0 - 391.1	TETRACOSANES	C24	0.0000	0.0000	0.0000
391.1 - 401.7	PENTACOSANES	C25	0.0000	0.0000	0.0000
401.7 - 412.2	HEXACOSANES	C26	0.0000	0.0000	0.0000
412.2 - 422.2	HEPTACOSANES	C27	0.0000	0.0000	0.0000
422.2 - 431.7	OCTACOSANES	C28	0.0000	0.0000	0.0000
431.7 - 441.1	NONACOSANES	C29	0.0000	0.0000	0.0000
441.1 - PLUS	TRIACONTANES PLUS	C30+	0.0000	0.0000	0.0000

BOILING POINT RANGE (C)	AROMATICS		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
80.0	BENZENE	C6	0.0370	0.0286	0.0241
110.6	TOLUENE	C7	0.0940	0.0856	0.0733
136.2	ETHYLBENZENE	C8	0.0072	0.0076	0.0065
138.4 - 144.4	XYLENES	C8	0.0653	0.0685	0.0583
168.9	1,2,4 TRIMETHYLBENZENE	C9	0.0072	0.0085	0.0073

BOILING POINT RANGE (C)	NAPHTHENES		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
48.9	CYCLOPENTANE	CC5	0.0017	0.0010	0.0010
72.2	METHYLCYCLOPENTANE	MCC5	0.0359	0.0299	0.0291
81.1	CYCLOHEXANE	CC6	0.0826	0.0687	0.0654
101.1	METHYLCYCLOHEXANE	MCC6	0.0986	0.0957	0.0922