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Grading

Title	Oil generating potential in source rocks, well 6507/8-4. BA92-515-1	
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Prepared by	Approved by
Ingun Skjevrak Edle Berge	18/2/92 Ger van Graas Ger ~~van~~ Graas, Section manager
Text operator: I.S.	18.02.92 Trygve Meyer Trygve Meyer, Dept. manager

6.02.14

APPROVED BY
STATOIL KRISTIANSUND

TABLE 1.

WELL 6507/8-4, LITHOLOGICAL DESCRIPTION

Sample no.	Depth mRKB	LITHOLOLOGY: Rock name, mod lith, colour, gr. size, sorting, roundness, matrix, cementation, hardness, accessories, fossils, porosity, contamination.
S5339	2129,84	Coal/shaly coal, black, hard.
S5340	2131,34	Coal/shaly coal, as above.
S5444	2135,27	Coal, black, brittle.
S5341	2136,22	Claystone, grey, mod.hard to hard, micro-micaceous.
S5342	2136,22	Coal, black, brittle.
S5343	2162,81	Coal/shaly coal, black, hard.
S5344	2178,29	Claystone, grey, mod.hard to hard, micro-micaceous.
S5445	2180,94	Claystone, shaly, grey to dark grey, mod.hard, micro-micaceous.
S5345	2181,12	Coal/shaly coal, black, hard.
S5346	2188,84	Coal/shaly coal, as above.
S5347	2192,05	Claystone, grey, mod.hard to hard, micro-micaceous.
S5348	2202,85	Coal/shaly coal, black, hard.
S5349	2207,90	Coal/shaly coal, as above.
S5446	2207,94	Coal, black, mod.hard to hard.
S5447	2208,25	Coal, as above.
S5350	2209,60	Coal, black, brittle.
S5351	2210,57	Coal, black, brittle.
S5352	2211,07	Coal, black, brittle.
S5448	2215,43	Coal, shaly coal, dark brown, firm to hard, trace of sand.
S5353	2215,62	Coal/shaly coal, black, hard.
S5449	2216,65	Coal, shaly coal, dark brown, firm to hard, trace of sand.
S5354	2216,38	Coal, black, brittle.
S5355	2222,53	Coal, black, brittle.
S5450	2223,38	Coal/shaly coal, dark grey to black, firm to hard.
S5356	2223,50	Coal/shaly coal, black, hard.

TABLE 1.

WELL 6507/8-4, LITHOLOGICAL DESCRIPTION

Sample no.	Depth mRKB	LITHOLOLOGY: Rock name, mod lith, colour, gr. size, sorting, roundness, matrix, cementation, hardness, accessories, fossils, porosity, contamination.
S5357	2225,29	Coal, black, brittle.
S5451	2227,70	Coal, black, brittle.
S5358	2227,72	Coal, black, brittle.
S5452	2228,75	Shale, coaly, dark grey to black, firm to mod.hard.
S5359	2237,91	Coal/shaly coal, black, hard.
S5360	2242,06	Coal, black, brittle.
S5453	2242,22	Coal/shaly coal, black, mod.hard.
S5361	2244,67	Coal, black, brittle.
S5455	2249,36	Claystone, dark grey, mod.hard, micro-micaceous.
S5456	2249,46	Coal, dark brown to black. mod.hard.
S5457	2249,52	Coal, black, brittle.
S5458	2249,59	Coal, dark brown to black. mod.hard.
S5459	2249,65	Coal, black, brittle.
S5460	2249,69	Shale, coaly, dark brown grey, mod.hard.
S5461	2249,82	Coal, black, brittle.
S5362	2249,87	Coal, black, brittle.
S5462	2280,53	Coal, black, brittle.
S5363	2284,72	Coal, black, brittle.
S5463	2285,48	Claystone, dark grey, mod.hard, micro-micaceous.
S5464	2291,13	Coal, dark brown to black. mod.hard.
S5465	2309,94	Coal, black, brittle.
S5466	2311.38	Claystone, grey to dark grey, mod.hard, micro-micaceous.
S5467	2311,76	Coal, black, brittle.
S5468	2313,61	Claystone, grey to dark grey, mod.hard, micro-micaceous.
S5469	2313,63	Coal, black, brittle.

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TABLE : 2

TOC AND ROCK EVAL PYROLYSIS DATA
FROM WELL 6507/8-4.

DEPTH mRKB	SAMPLE no.	S1	S2	TOC	HI	PP	PI	TMAX
2129,84	S5339	0,9	40,1	54,9	73	41,1	0,02	419
2131,34	S5340	6,5	79,3	39,5	201	85,9	0,08	425
2135,27	S5444	9,2	107,7	54,8	197	117,0	0,08	422
2136,20	S5341	0,0	0,0	0,4	12	0,1	0,38	
2136,22	S5342	30,7	62,8	62,6	100	93,6	0,33	425
2162,81	S5343	7,6	24,5	47,5	52	32,2	0,24	413
2178,29	S5344	0,3	2,4	8,5	29	2,8	0,13	428
2180,94	S5445	1,1	12,7	11,5	111	13,9	0,08	425
2181,12	S5345	2,9	55,1	34,3	160	58,1	0,05	427
2188,84	S5346	2,9	71,9	51,7	139	74,9	0,04	418
2192,05	S5347	0,2	2,6	2,9	90	2,9	0,07	432
2202,85	S5348	0,9	29,0	62,5	46	30,1	0,03	424
2207,90	S5349	4,3	97,8	44,6	219	102,2	0,04	424
2207,94	S5446	4,8	90,6	48,9	185	95,6	0,05	423
2208,25	S5447	6,1	110,7	58,3	190	116,9	0,05	420
2209,60	S5350	1,1	38,8	47,9	81	40,0	0,03	419
2210,57	S5351	9,2	84,0	59,7	141	93,3	0,10	425
2211,07	S5352	1,9	71,4	61,8	116	73,4	0,03	426
2215,43	S5448	0,3	8,2	7,1	115	8,5	0,04	427
2215,62	S5353	2,0	119,7	37,6	318	121,7	0,02	426
2216,38	S5354	1,0	60,8	58,9	103	61,9	0,02	426
2216,65	S5449	1,8	79,2	47,4	167	81,1	0,02	425
2222,53	S5355	2,8	64,9	69,0	94	67,9	0,04	428
2223,38	S5450	1,3	55,3	47,7	116	56,7	0,02	425
2223,50	S5356	1,4	49,4	44,4	111	51,0	0,03	426
2225,29	S5357	1,8	82,9	52,3	158	84,8	0,02	425
2227,70	S5451	1,7	90,4	57,1	158	92,2	0,02	424
2227,72	S5358	0,9	71,3	59,6	120	72,3	0,01	424
2228,75	S5452	0,2	17,4	12,1	144	17,7	0,02	427
2237,91	S5359	1,7	65,0	41,9	155	66,8	0,03	425
2242,06	S5360	1,0	56,7	54,3	105	57,8	0,02	425
2242,22	S5453	2,0	61,9	47,1	131	64,0	0,03	421
2244,67	S5361	3,2	76,9	49,7	155	80,1	0,04	426
2249,28	S5454	11,6	0,7			12,3	0,94	
2249,36	S5455	1,5	18,4	9,4	196	20,0	0,08	421

TABLE : 2 (CONT.)

DEPTH mRKB	SAMPLE no.	S1	S2	TOC	HI	PP	PI	TMAX
2249,46	S5456	2,3	99,2	52,8	188	101,6	0,02	426
2249,52	S5457	1,9	72,6	51,7	140	74,6	0,03	426
2249,59	S5458	0,7	30,3	19,9	152	31,0	0,02	428
2249,65	S5459	0,2	10,5	11,5	92	10,8	0,02	429
2249,69	S5460	0,8	52,9	33,4	159	53,8	0,02	431
2249,82	S5461	1,2	55,8	42,1	132	57,1	0,02	428
2249,87	S5362	0,6	34,8	45,7	76	35,5	0,02	430
2280,53	S5462	0,9	38,8	45,4	86	39,8	0,02	413
2284,72	S5363	0,8	45,1	47,5	95	46,1	0,02	428
2285,48	S5463	0,1	7,3	7,3	101	7,5	0,02	429
2291,13	S5464	0,8	31,5	26,9	117	32,4	0,03	428
2309,94	S5465	1,0	56,2	47,8	117	57,2	0,02	432
2311,38	S5466	0,0	0,7	2,6	26	0,8	0,05	425
2311,76	S5467	1,1	73,9	47,0	157	75,1	0,02	424
2313,61	S5468	0,0	0,2	1,1	21	0,3	0,07	423
2313,63	S5469	0,7	44,2	38,1	116	45,0	0,02	423

S1 : mg HC/g rock

S2 : mg HC/g rock

HI : 100*S2/TOC (mg HC/g TOC)

TOC : wt% of whole rock

TABLE 3

PYROLYSATE YIELD FROM MSSV-Py 340^{0} 72 h (Wt% of total rock)

							TOC normalised yields[1)]			
SAMPLE	wt% C1	wt% C2-C5 *	wt%C5+	wt% C15+	wt% residual **	*** GOR	HI (C1)	HI (C2-C5)	HI (C5+)	HI (C15+)
S5444/coal	1,2	2,5	12,2	4.0	84,1	0,31	22	46	223	73
S5448/sh	0,1	0,3	1,2		98,4	0,35	14	42	169	
S5353/coal	0,6	1,9	23,3	11.7	74,2	0,11	16	50	619	311
S5449/coal	0,9	2,0	13,0	4.2	84,1	0,22	19	42	274	89
S5455/sh	0,1	0,4	3,6	1.6	95,9	0,14	11	43	383	170
S5460/coal	0,3	0,6	3,4	1.1	95,7	0,27	9	18	102	32
S5463/sh	0,1	0,2	0,6		98,8	0,37	14	27	82	
S5464/coal	0,6	1,1	8,2	3.8	90,1	0,20	22	41	305	141
S5467/coal	0,9	1,6	7,5		90,0	0,34	19	34	160	
S5353/ker	1,1	3,2	42,2		53,5	0,10				
S5460/ker	0,7	1,4	13,0		84,9	0,16				
S5514/ker	0,1	0,6	6,4		92,9	0,12				
S5515/ker	2,3	6,7	85,3		5,7	0,11				
S5516/ker	0,3	0,9	14,6		84,2	0,08				
S2379/ker	1,9	8.2	88,0		1.9	0,12				
S5019/sh	0,03	0,3	2,0	0,9	96.8	0,13	3	29	227	101
S5019/ker	0,1	1,5	11,2	6,5	87,2	0,13				

(ker=kerogen sample)

* = C2-C5 is measured up to nC5; nC5 is not included in this fraction.

** = Residual material from pyrolysis and GC-analysis not accounted for.

*** = GOR = $\frac{C1\text{-}C5}{C5+}$ (unit g/g)

1) : HI=S2/TOC (see Table 2)

TABLE 4

PYROLYSATE YIELD FROM MSSV-Py 360^0 72 h (Wt% of total rock)

SAMPLE	wt%C1	* wt%C2-C5	wt%C5+	wt% C15+	wt% ** residual	*** GOR	TOC normalised yields[1)] HI C1	HI C2-C5	HI C5+	HI C15+
S5444/coal	3,2	4,8	27,4	5.2	64,6	0,29	58	88	500	95
S5448/sh	0,3	0,7	2,1		96,9	0,47	42	99	296	
S5353/coal	0,6	1,1	10,5	5.5	87,8	0,16	16	29	279	146
S5449/coal	2,0	2,9	4,8	0.2	90,3	1,03	42	61	101	4
S5455/sh	0,1	0,4	3,5	1.6	96,0	0,14	11	43	372	170
S5460/coal	1,7	3,2	10,4	1.5	84,7	0,47	51	96	311	45
S5463/sh	0,1	0,2	0,5		99,2	0,72	14	27	68	
S5464/coal	0,4	0,9	8,2	4.4	90,5	0,15	15	33	305	164
S5467/coal	0,2	0,3	0,4		99,1	1,03	4	6	9	
S5353/ker	5,4	5,1	36,9		52,6	0,29				
S5460/ker	0,9	1,4	4,7		93,0	0,48				
S5514/ker	1,2	3,5	29,9		65,4	0,16				
S5515/ker	0,7	2,5	16,2		80,6	0,20				
S5516/ker	2,3	3,1	24,2		70,4	0,22				

(ker=kerogen samples)

*

**

*** SEE TABLE 7

[1)] : HI=S2/TOC (see Table 2)

TABLE 5

PRELIMINARY MSSV-PYROLYSIS EXPERIMENTS

QUANTITATIVE DATA FOR PYROLYSATES

OBTAINED FROM DIFFERENT TEMPERATURES (72h) (Wt% of whole rock)

SAMPLE	TEMP^{0}C	wt%C1	wt%C2-C15	wt%C15+	SUM wt%
S5353/coal	330^0	0,6	11,7	11,0	23,3
	340^0	0,7	14,1	12,3	27,1
	350^0	0,4	8,0	9,9	18,3
	360^0	0,6	6,9	6,2	13,7
S5464/coal	330^0	0,4	5,3	3,7	9,4
	340^0	0,6	5,1	3,3	9,0
	350^0	0,3	3,9	2,9	7,1
	360^0	0,4	4,9	4,6	9,9
S5455/sh	330^0	0,1	1,3	1,3	2,7
	340^0	0,1	2,3	1,6	4,0
	350^0	0,1	0,7	0,5	1,3
	360^0	0,1	2,4	1,7	4,2

TABLE 6

PYROLYSATE YIELDS FROM MSSV-Py 330^0 72h (Wt% of total rock)

SAMPLE	wt%C1	wt%C2-C5 *	wt%C5+	wt% residual **	GOR ***
S5353/coal	0,5	1,4	20,1	78,0	0,10
S5464/coal	0,4	0,9	7,5	91,2	0,17
S5455/sh	0,1	0,2	2,1	97,6	0,16

*
**
*** SEE TABLE 7

TABLE 7

PYROLYSATE YIELDS FROM MSSV-Py 350^0 72h (Wt% of total rock)

SAMPLE	wt%C1	wt%C2-C5 *	wt%C5+	wt% residual **	GOR ***
S5353/coal	0,4	1,0	16,2	82,4	0,08
S5464/coal	0,3	0,6	6,0	93,1	0,14
S5455/sh	0,1	0,1	1,0	98,1	0,21

*
**
*** SEE TABLE 7

TABLE 8

QUANTITATIVE DATA FOR MSSV-PYROLYSATES 340^{0} 20h (Wt% of total rock)

SAMPLE	wt%C1	wt%C2-C5 *	wt%C5+	wt% residual **	GOR ***
S5353/coal	0,6	1,2	11,1	87,1	0,16
S5464/coal	0,4	0,8	6,4	92,4	0,19
S5455/sh	0,1	0,1	1,2	98,6	0,17

*
**
*** SEE TABLE 7

TABLE 9

IATROSCAN GROUP SEPARATION DATA :
NORMALISED COMPONENT GROUP COMPOSITION (%)
OF EXTRACTED ORGANIC C15+ MATTER,
WELL 6507/8-4

SAMPLE	DEPTH		HYDROCARBONS			NON HYDROCARBONS		
NO.	(mRKB)		SAT	ARO	TOT	NSO	ASPH	TOT
S5339	2129,84	coal	2.1	51.6	53.7	45.7	0.7	46.4
S5340	2131,34	coal	8.3	57.8	66.1	33.3	0.6	33.9
S5444	2135,27	coal	4.0	40.1	44.1	49.7	6.1	55.8
S5341	2136,20	clst	7.1	24.8	31.9	61.7	6.5	68.2
S5342	2136,22	coal	31.4	47.7	79.1	20.3	0.6	20.9
S5343	2162.77	coal	28.1	44.4	72.5	27.0	0.5	27.5
S5344	2178,29	clst	21.1	53.8	74.9	24.7	0.4	25.1
S5445	2180,94	clst	8.2	30.9	39.1	54.1	6.8	60.9
S5345	2181,12	coal	3.2	53.6	56.8	42.3	0.9	43.2
S5346	2188,84	coal	2.4	53.6	56.0	42.8	1.2	44.0
S5347	2192,05	clst	5.8	47.0	52.8	46.6	0.6	47.2
S5348	2202,85	coal	8.3	62.5	70.8	28.7	0.5	29.2
S5349	2207,90	coal	3.9	48.8	52.7	45.4	1.9	47.3
S5446	2207,94	coal	3.9	30.2	34.1	55.9	10.1	66.0
S5591	2207,97	coal	4.1	19.0	23.1	66.8	10.0	76.8
S5447	2208,25	coal	4.5	35.3	39.8	51.4	8.8	60.2
S5350	2209,60	coal	1.4	47.6	49.0	48.8	2.2	51.0
S5351	2210,57	coal	26.7	22.4	49.1	48.5	2.3	50.8
S5352	2211,07	coal	31.9	31.2	63.1	35.9	1.0	36.9
S5448	2215,43	coal	6.7	9.9	16.6	70.0	13.4	83.4
S5353	2215,62	coal	10.7	20.0	30.7	66.3	2.9	69.2
S5354	2216,38	coal	3.7	29.2	32.9	63.8	3.3	67.1
S5449	2216,65	coal	1.7	19.6	21.3	70.8	7.9	78.7
S5355	2222,53	coal	4.6	34.2	38.8	58.2	3.0	61.2
S5450	2223,38	coal	4.7	20.6	25.3	64.0	10.7	74.7
S5356	2223,50	coal	3.2	21.5	24.7	71.7	3.6	75.3
S5357	2225,29	coal	5.6	26.2	31.8	63.7	4.5	68.2
S5451	2227,70	coal	1.4	21.2	22.6	70.0	7.4	77.4
S5358	2227,72	coal	2.1	31.8	33.9	62.8	3.4	66.2
S5452	2228,75	coal	2.6	17.8	20.4	73.8	5.7	79.5
S5359	2237,91	bsh	3.8	18.2	22.0	68.8	9.2	78.0
S5360	2242,06	coal	4.8	23.3	28.1	67.1	4.7	71.8
S5453	2242,22	coal	2.8	17.8	20.6	69.2	10.1	79.3

TABLE 9 (CONT.)

SAMPLE NO.	DEPTH (mRKB)		HYDROCARBONS SAT	ARO	TOT	NON HYDROCARBONS NSO	ASPH	TOT
S5592	2244.62	coal	2.3	14.2	16.5	72.1	11.5	83.6
S5361	2244,67	coal	6.2	36.5	42.7	54.8	2.6	57.4
S5517	2248,81	sst	54.9	35.9	90.8	8.9	0.4	9.3
S5518	2249,08	sst	54.2	38.6	92.8	6.9	0.2	7.1
S5454	2249,28	sst	51.3	40.8	92.1	6.7	1.2	7.9
S5455	2249,36	sh	6.6	27.0	33.6	51.5	14.9	66.4
S5456	2249,46	coal	2.0	24.0	26.0	65.5	8.4	73.9
S5523	2249,47	coal	1.7	8.6	10.3	76.3	13.4	89.7
S5524	2249,50	coal	1.3	9.6	10.9	79.1	10.0	89.1
S5457	2249,52	coal	2.4	20.9	23.3	65.7	11.0	76.7
S5525	2249,57	coal	2.8	12.1	14.9	79.4	5.6	85.0
S5458	2249,59	coal	3.4	15.0	18.4	66.8	14.8	81.6
S5526	2249,62	coal	1.0	7.4	8.4	85.0	6.6	91.6
S5459	2249,65	coal	1.4	14.0	15.4	69.5	15.0	84.5
S5527	2249,68	coal	1.8	11.7	13.5	81.7	4.9	86.6
S5460	2249,69	coal	2.1	23.2	25.3	66.9	7.8	74.7
S5528	2249,81	coal	0.9	8.7	9.6	84.4	6.0	90.4
S5461	2249,82	coal	2.1	22.0	24.1	66.3	9.6	75.9
S5529	2249,85	coal	1.6	12.4	14.0	81.7	4.3	86.0
S5362	2249,87	coal	1.9	25.3	27.2	67.6	5.1	72.7
S5519	2251.14	clst	15.1	13.9	29.0	67.0	4.0	71.0
S5462	2280,53	coal	1.0	27.3	28.3	65.4	6.3	71.7
S5363	2284,72	coal	2.1	23.7	25.8	68.3	5.9	74.2
S5463	2285,48	sh	1.9	20.4	22.3	72.0	5.7	77.7
S5464	2291,13	coal	1.7	14.2	15.9	74.6	9.6	84.2
S5465	2309,94	coal	2.6	22.1	24.7	66.7	8.7	75.4
S5520	2311,14	sh	3.1	14.2	17.3	78.7	3.9	82.6
S5466	2311,38	sh	0.8	14.1	14.9	77.0	8.1	85.1
S5467	2311,76	coal	3.0	18.1	21.1	70.8	8.1	78.9
S5530	2311,88	coal	2.3	8.9	11.2	83.6	5.2	88.8
S5521	2313,33	sh	1.4	10.8	12.2	84.7	3.2	87.9
S5522	2313,36	sh	2.6	8.9	11.5	80.2	8.3	88.5
S5468	2313,61	clst	1.3	16.9	18.2	73.1	8.6	81.7
S5469	2313,63	coal	3.0	30.0	33.0	57.9	9.0	66.9

TABLE 10
RELATIVE AMOUNTS OF GENERATED HYDROCARBONS FROM MSSV PYROLYSIS
340° 72 hours

SAMPLE ID	%C1	%C2-C5	%C5+	%C1	%C2-C15	%C15+
S5444/coal	7.7	15.8	76.5	7.6	67.0	25.4
S5448/sh	7.1	18.7	74.2			
S5449/coal	5.6	12.5	81.9	5.6	68.2	26.2
S5460/coal	7.5	14.0	78.6	7.6	65.9	26.5
S5463/sh	8.4	18.5	73.2			
S5467/coal	9.3	16.2	74.5			
S5353/coal	2.4	7.4	90.2	2.6	52.0	45.4
S5464/coal	5.6	11.1	83.3	6.3	55.4	38.4
S5455/sh	3.3	8.6	88.1	2.5	57.5	40.0
S5353/ker	2.4	6.8	90.7			
S5460/ker	4.4	9.1	86.5			
S5514/ker	1.9	8.7	89.3			
S5515/ker	2.4	7.1	90.5	2.4	55.5	42.1
S5516/ker	1.7	6.0	92.3			
S2379/ker	2.0	6.9	91.1	1.9	49.0	49.1
S5019/ker	1.0	11.5	87.6	1.0	47.0	52.0
S5019/sh	1.1	11.1	87.8	1.3	52.7	45.9
(ker=kerogen)						
S4680 DST#2 (*)	1.0	5.4	93.6			
S4681 DST#3 (**)	1.2	7.0	91.8			

(*) MSSV pyrolysate of DST#2 fluid asphaltene 330° 72t
(**) MSSV pyrolysate of DST#3 fluid asphaltene " ".

TABLE 11
RELATIVE AMOUNTS OF GENERATED HYDROCARBONS FROM MSSV PYROLYSIS
360° 72 hours

SAMPLE ID	%C1	%C2-C5	%C5+	%C1	%C2-C15	%C15+
S5444/coal	9.0	13.5	77.5	9.3	75.9	14.8
S5448/sh	9.8	22.3	67.8			
S5449/coal	20.9	29.7	49.4	21.0	78.0	1.6
S5460/coal	11.0	21.0	68.0	11.1	79.0	10.0
S5463/sh	14.8	27.1	58.1			
S5467/coal	20.8	29.9	49.2			
S5353/coal	4.7	9.2	86.1	4.4	50.4	45.3
S5464/coal	4.2	9.0	86.8	4.0	49.5	46.5
S5455/sh	3.3	9.1	87.6	2.4	57.1	40.5
S5353/ker	11.4	10.8	77.8			
S5460/ker	12.3	20.0	67.7			
S5514/ker	3.5	10.0	86.5			
S5515/ker	3.7	12.9	83.4			
S5516/ker	7.9	10.4	81.7			

(ker=kerogen)

TABLE 12 MACERAL COMPOSITION OF SELECTED SAMPLES FROM THE IN WELL 6507/8-4.

S No	DEPTH m RKB	LIP %	VIT %	IN %
5444 c	2135.27	5	88	7
5344 sh	2178.29	4	13	83
5448 sh	2215.43	23	47	30
5353 c	2215.62	5	85	10
5449 c	2216.65	5	92	3
5451 c	2227.70	4	89	7
5455 sh	2249.36	55	45	-
5460 c	2249.69	9	81	10
5463 sh	2285.48	14	40	46
5464 c	2291.13	15	19	66
5467 c	2311.76	3	90	7

TABLE 13

CONCENTRATION OF C15+ (ppm)
EXTRACTABLE ORGANIC MATTER (EOM),
WELL 6507/8-4,

SAMPLE NO.	DEPTH (mRKB)	TOT EOM	ASPH
S5444 c	2135.27	37045	11386
S5344 sh	2178.29	3289	1209
S5448 sh	2215.43	2465	1122
S5353 c	2215.62	13535	4795
S5449 c	2216.65	24915	16337
S5451 c	2227.70	30543	21808
S5454 sst	2249.28	18714	380
S5455 sh	2249.36	5893	1908
S5460 c	2249.69	12017	6084
S5463 sh	2285.48	2462	1076
S5464 c	2291.13	18365	7587
S5467 c	2311.76	21437	12667

TABLE 14
MOLECULAR RATIOS FROM MSSV PYROLYSATES

SAMPLE ID	PYROLYSIS CONDITIONS	Pr/Ph	Pr/nC17
S5455/sh	330°/72h	6.8	0.46
	360°/72h	7.0	0.53
	340°/20h	6.5	0.50
S5464/coal	330°/72h	5.5	0.53
	360°/72h	5.8	0.56
	340°/20h	4.5	0.50
S5353/coal	330°/72h	5.3	0.83
	360°/72h	5.7	0.83
	340°/20h	4.3	0.77
	340°/72h	5.5	0.83
S5353/ker	340°/72h	6.2	0.77
S5060/ker	340°/72h	6.0	0.37
S5060/coal	"	5.7	0.50
S5514/ker	"	2.7	0.17
S5515/ker	"	3.0	0.67
S5516/ker	"	6.0	0.42
S5019/ker	"	1.6	-
S5019/sh	"	1.7	-
S4680 (*)	330°/72h	1.7	0.43
S4681 (**)	"	1.8	0.44

(ker=kerogen)
(*) : DST#2 fluid asphaltene pyrolysate
(**) : DST#3 fluid asphaltene pyrolysate

TABLE 15

BIOMARKER RATIOS FOR SELECTED MSSV PYROLYSATES

SAMPLE	%Ts	29αß/30αß	%27	%28	%29	δ22S	DIA27/29	%αß/αß+ßα	%22S	%ßß	%20S	%TtX	%BIS	%DIA27/REG27	h/s	C34/C35	C27ααα/C29ααα
S4680 DST#2 ASPH	0	0.6	45.7	31.9	22.4	1.7	N.D.	68	55.1	35	32.2	0	0	0	1.2	-	0.8
S4681 DST#3 ASPH	0	0.6	39.7	32.3	28.0	1.7	N.D.	69	53.9	39	40.2	0	0	0	1.1	1.6	1.7
S5353 COAL	0	1.6	0	0	TR	1.4	N.D.	45		0	0	0	0	0	-	0	0
S5444 COAL	0	1.6	N.D.	N.D.	TR		TR	54		38	38.8	0	0	0	-	0	0

N.D. = Not detected
- = Denominator in ratio = 0 (N.D.)
TR = Traces

TABLE 16
ROCK EXTRACT AND FLUID SAMPLES SELECTED
FOR BIOMARKER ANALYSES

SAMPLE ID.	WELL	DEPTH (mRKB)	SAMPLE TYPE
S4682	6507/8-4	2126-2135	FLUID DST#4
S4681	"	2150-2161.5 2163.5-2168	FLUID DST#3
S5444	"	2135.27	COAL
S5353	"	2215.62	"
S5449	"	2216.65	"
S5454	"	2249.28	SST/ASPH
S5455	"	2249.36	CLST
S5460	"	2249.69	COAL
S5514	2/1-6	4149.9	CLST
S5515	6407/9-2	1639.0	"
S5516	6507/3-1	4011.25	COAL

TABLE 17

BIOMARKER RATIOS FOR SELECTED EXTRACTS AND FLUIDS.

SAMPLE	%Ts	29αß/30αß	%27	%28	%29	δ22S	DIA27/29	%αß/αß+ßα	%22S	%ßß	%20S	%TtX	%BIS	%DIA27/REG27	h/s	C34/C35	C27ααα/C29ααα
S5353	0	3.7	N.D.	N.D.	N.D.		N.D.	39		30	11.4	0	0	0			
S5444	60	0.4	38.4	28.6	33.0	2.3	1.0	90	66.9	51	46.0	63	32	493	3.7	1.1	0.2
S5454	58	0.5	35.4	31.1	33.5	1.7	1.3	90	59.7	59	65.9	71	39	-	-	0.8	0.0
S4682 DST#4	69	0.4	36.4	28.1	35.4	1.0	1.8	88	54.6	56	52.1	47	19	-	-	-	0.0
S4681 DST#3	59	0.4	39.7	29.8	30.5	1.7	1.1	90	60.7	59	62.5	73	28	-	-	0.7	0.0
S5516	61	0.5	0.0	23.6	76.4	2.3	0.0	91	60.2	60	47.9	79	0	-	-	0.0	0.0
S5515	0	2.0	26.0	37.9	36.1	0	-	67	0.0	38	0.0	0	31	10.6	0.6	0.0	0.9
S5514	50	0.2	46.1	28.1	25.8	1.3	1.7	100	58.9	57	70.0	87	0	-	-	-	0.0

N.D. = Not detected
- = Denominator in ratio = 0 (N.D.)

LEGEND TO TABLE 15 AND TABLE 17

% Ts = Ts/Ts+Tm (m/z 191)

29αß/30αß = norhopane (29αß)/ hopane (C30αß) (m/z 191)

% 27 = % 27ßß isosterane = C27αßß20S+R/(C27+C28+C29)αßß20S+R (m/z 218)

% 28 = % 28ßß isosterane = C28αßß20S+R/(C27+C28+C29)αßß20S+R (m/z 218)

% 29 = % 29ßß isosterane = C29αßß20S+R/(C27+C28+C29)αßß20S+R (m/z 218)

δ 22S = Triterpane ((C31/C32)+(C32/C33)+(C33/C34)) /3 αß22S (m/z 191)

DIA27/29 = C27 DIA ßα 20 S+R/C29 DIA ßα 20 S+R (m/z 217)

% αß/αß+ßα = Hopane αß/hopane αß+moretane ßα (C30) (m/z 191)

% 22S = Triterpane 22S = ((C31S/C31S+C1R3)+(C32S/C32S+C32R)+(C33S/C33S+C33R))/3 (m/z 191)

% ßß =
Ethylsterane αßß20S+R/ethylsterane ααα20S+R + αßß20S+R (m/z 217)

% 20S = Etylsterane ααα20S/etylsterane ααα20S+R (m/z 217)

% Ttx = Triterpane X/triterpane X+normoretane (=C29ßα) (m/z 191)

DIA27/REG27 = 100*((C27 DIA R+S ßα/(C27 DIA + C27 ααα R+S)) (m/z 217)

h/s = C30-hopane/C27 R+S ααα sterane (m/z 191, 217)

C27ααα/C29ααα = C27R ααα(reg.sterane)/C29R ααα (reg.sterane) (m/z 217)

C34/C35 = C34 αß R+S hopane/C35 αß R+S hopane (m/z 191)

%BIS = C28 bisnorhopane/C30 norhopane (m/z 191)

TABLE 18

DATA FOR FLUID ASPHALTENE PYROLYSATES

(340° 72h)

SAMPLE	*** GOR	$\frac{C2-C5}{C5+}$
6507/8-4 DST 2	0,07	0,06
6507/8-4 DST 3	0,08	0,07