

TABLE 5
KEROGEN TYPE AND MATURATION

JOB 8219 GEOCHEM SAMPLE NUMBER	DEPTH/ IDENTITY	ORGANIC MATTER DESCRIPTION				THERMAL MATURATION		
		TYPES >35%; 10-35%; <10%	REMARKS	RE- WORKED (%)	PARTICLE SIZE	PRESERV- ATION	THERMAL ALTERATION INDEX	1-10 SCALE
WELL: N 15/6-7								
8219-001A	530m	W;I-H; (Al-Am)			F-M	G	1+	1.5
8219-004A	620m	W;I-H;Am-Al			F-M	F-G	1+	1.5
8219-007A	710m	W;I-H;Am-Al			F-M	F-G	1+	1.5
8219-010A	800m	W-I;H;Al-Am			F-M	G	1+	1.5
8219-018A	1040m	W-H;Al-Am;I	sapropelisation		F-M	G	1+	1.5
8219-021A	1130m	Am*;-;W-I	*atypical, unrecognisable, after terrestrial debris?		F-M	F-G	1+ to 2-(?)	2(?)
8219-024A	1220m	Am*;W;H-I-Al	*as 8219-021A		F-M	F	1+ to 2-	2
8219-027A	1310m	Am*;-;W-H-I	*as 8219-021A		F-M	F	1+ to 2-	2
8219-029A	1370m	Am*;W;H-I	*as 8219-021A		F-M	F-G	1+ to 2-(?)	2(?)
8219-188A	SWC 1450m	W-H;Al;Am-I			F-M	G	1+	1.5
8219-035A	1550m	W-H;Am;Al-I	widespread sapropelisation		F-M	G	1+	1.5
8219-038A	1640m	H-W;Al;Am-I			F-M	F	1+/1+ to 2-	1.8
8219-189A	SWC 1650m	Am;W-H;I-Al			F-M	F-G	1+/1+ to 2-	1.8
8219-190A	SWC 1741m	W-H;Al;Am-I			F-M	G	1+ to 2-	2

Algal, Amorphous, Herbaceous, Inertinite, Resin, Wood
preservation = Poor, Fair, Good size = Fine, Medium, Coarse

TAI SCALE	1	1+ to 2-	2-	2	2 TO 2+	2+ TO 3-	3	3+	4	5
1-10 SCALE	1	2	3	4	5	6	7	8	9	10

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GEOCHEM SAMPLE NUMBER		TYPES >35%;10-35%;<10%	REMARKS	RE- WORKED (%)	PARTICLE SIZE	PRESERV- ATION	THERMAL ALTERATION INDEX	1-10 SCALE
8219-047A	1805m	W-H;Am;Al-I			F-M	F	1+ to 2-	2
8219-192A	SWC 1822m	-;Al-W-H;I-Am			F-M	F	1+ to 2-(?)	2(?)
8219-052A	1880m	W;H;Al-I-Am	dominant H at 2- to 2		F-M	F	1+ to 2-(?)	2(?)
8219-193A	SWC 1948m	-;W-Al-I-H;Am	H at 2- and 2- to 2		F-M	F	1+ to 2-	2
8219-062A	2030m	W-H;I-Al;Am	significant H at 2- to 2 and 2		F-M	F	1+ to 2-(?)	2(?)
8219-067A	2105m	H-W;Am-Al;I	widespread sapropelisation, differentiation difficult good H at 2- and 2- to 2		F-M	F-G	1+ to 2-(?)	2(?)
8219-072A	2180m	W;H-Al;Am-I	sapropelisation significant H at 2- and 2- to 2		F-M	F-G	1+ to 2-	2
8219-077A	2255m	Al;W-H;I-Am	significant H at 2-		F-M	F	1+ to 2-/2-	2.5
8219-081A	2315m	-;H-Al-W-I;Am	approaching 2-		F-M	F-G	1+ to 2-/2-	2.5
8219-196A	SWC 2367m	W;H-Al;I-Am			F-M	F	2- max	3
8219-198A	SWC 2444m	W;I;H			F-M	G	2-(?)	3(?)
8219-095A	2525m	W;H-Al;I-Am			F-M	F	2-	3
8219-100A	2600m	W;H;I-Al			F-M	G	2-	3

Algal, Amorphous, Herbaceous, Inertinite, Resin, Wood
preservation = Poor, Fair, Good size = Fine, Medium, Coarse

TAI SCALE	1	1+ to 2-	2-	2	2 TO 2+	2+ TO 3-	3	3+	4	5
1-10 SCALE	1	2	3	4	5	6	7	8	9	10

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		TYPES >35%; 10-35%; <10%	REMARKS	RE- WORKED (%)	PARTICLE SIZE	PRESERV- ATION	THERMAL ALTERATION INDEX	1-10 SCALE
8219-108A	2720m	W;H-I-Al;Am			F-M	F-G	2- to 2	3.5
8219-113B	2795m	W;H-I-Al;Am			F-M	F-G	2- to 2	3.5
8219-153A	3239m	Al*;I-Am;W-H	*(commonly) passing to amorphous		F-M/C	G	2	4
8219-205A	SWC 3274m	Al*;Am**;I-W-H	*passing to amorphous **after Al, includes incompletely developed material		F-C	G	2	4
8219-160A	3300m	Al*;Am**-I-W;H	*as 8219-205A **		F-C	G	2	4
8219-207A	SWC 3321.5m	I;Al-W;Am-H			M	G	2	4
8219-208A	SWC 3351m	(I;Al-W;Am-H)	frequently obscured by contamination, differentiation difficult		F-M	F	2(?)	4(?)
8219-169A	3381m	I;W-Al;Am-H			F-M	F	2(?)	4(?)

Algal, Amorphous, Herbaceous, Inertinite, Resin, Wood
preservation = Poor, Fair, Good size = Fine, Medium, Coarse

TAI SCALE	1	1+ to 2-	2-	2	2 TO 2+	2+ TO 3-	3	3+	4	5
1-10 SCALE	1	2	3	4	5	6	7	8	9	10

TABLE 6
VITRINITE REFLECTANCE DATA

JOB 8219 GEOCHEM SAMPLE NUMBER	DEPTH/ IDENTITY	SAMPLE TYPE	AVERAGE REFLECTIVITY R _o (%), (NUMBER OF PARTICLES)			REMARKS
			1	2	3	

WELL: N 15/6-7

8219-001A	530m	WR	0.20(5)	0.34(1)	0.68(2)	
8219-004A	620m	WR	0.31(10)	0.50(1)		
8219-007A	710m	WR	0.35(9)	0.71(2)		
8219-010A	800m	WR	<u>0.29</u> (4)	0.51(4)		
8219-018A	1040m	WR	<u>0.29</u> (20)	0.52(1)		
8219-021A	1130m	KC	<u>0.34</u> (30)			
8219-024A	1220m	KC	<u>0.33</u> (30)			
8219-027A	1310m	WR	0.32(14)	0.46(2)		
8219-029A	1370m	KC	<u>0.36</u> (30)			
8219-188A	SWC 1450m	WR	0.32(20)			
8219-035A	1550m	WR	<u>0.35</u> (17)			
8219-189A	SWC 1650m	WR	<u>0.37</u> (19)			
8219-190A	SWC 1741m	WR	<u>0.37</u> (18)			
8219-192A	SWC 1822m	WR	NO DETERMINATION POSSIBLE			
8219-052A	1880m	WR	0.35(3)	0.52(1)	0.78(1)	
8219-193A	SWC 1948m	WR	NO DETERMINATION POSSIBLE			
8219-062A	2030m	WR	0.57(2)	1.01(2)		
8219-067A	2105m	WR	<u>0.40</u> (8)			
8219-072A	2180m	WR	<u>0.42</u> (15)	0.62(1)		
8219-077A	2255m	WR	0.70(4)			
8219-081A	2315m	WR	0.42(16)	0.69(3)		
8219-196A	SWC 2367m	WR	<u>0.44</u> (1)	0.77(7)		
8219-198A	SWC 2444m	WR	0.40(40)			
8219-095A	2525m	WR	<u>0.47</u> (7)	0.75(2)		
8219-100A	2600m	WR	0.44(36)			
8219-108A	2720m	WR	<u>0.49</u> (15)			

CT-ditch cuttings; CO-core; WR-whole rock; KC-kerogen concentrate. Preferred values underlined.

TABLE 6
VITRINITE REFLECTANCE DATA

JOB 8219 GEOCHEM SAMPLE NUMBER	DEPTH/ IDENTITY	SAMPLE TYPE	AVERAGE REFLECTIVITY R _o (%), (NUMBER OF PARTICLES)			REMARKS
			1	2	3	
8219-113B	2795m	WR	<u>0.50</u> (4)	0.66(1)		
8219-153A	3239m	WR	0.46(3)			
8219-205A	SWC 3274m	WR	0.47(3)			
8219-207A	SWC 3321.5m	WR	0.47(17)	0.92(1)		
8219-208A	SWC 3351m	WR	<u>0.56</u> (9)			
8219-169A	3381m	WR	0.54(14)	0.81(4)	1.02(1)	

CT-ditch cuttings; CO-core; WR-whole rock; KC-kerogen concentrate. Preferred values underlined. *Reworked

TABLE 7
CONCENTRATION (PPM) OF EXTRACTED C₁₅₊ MATERIAL IN ROCK

JOB 8219 GEOCHEM SAMPLE NUMBER	L I T H O	DEPTH/ IDENTITY	TOTAL EXTRACT	HYDROCARBONS			NON HYDROCARBONS			
				Saturates	Aromatics	TOTAL	Preciptd. Asphaltenes	Eluted NSO's	Non-Eluted NSO's	TOTAL

WELL: N 15/6-7

8219-081A		2315m	6874	379	13	392	330	6138	14	6481
8219-082A		2330m	4185	298	46	343	364	3469	3	3837
8219-212	SWC	2336m	3374	682	97	779	1200	1379	15	2595
8219-083AR		2345m	3059	247	27	274	345	2435	6	2786
8219-083A		2345m	6441	1153	1228	2380	676	3378	7	4061
8219-131A		3039m	6194	3444	389	3833	780	1564	17	2361
8219-139A		3111m	5073	42	52	94	1586	3385	8	4979
8219-143A		3147m	2464	108	35	143	258	2058	5	2322
8219-156A		3264m	14095	6611	2257	8868	1828	3373	26	5227

TABLE 8
COMPOSITION (NORMALISED %) OF C₁₅₊ MATERIAL

JOB 8219 GEOCHEM SAMPLE NUMBER	L I T H O	DEPTH/ IDENTITY	HYDROCARBONS		NON HYDROCARBONS		
			Saturates	Aromatics	Preciptd. Asphaltenes	Eluted NSO's	Non-Eluted NSO's

WELL: N 15/6-7

8219-081A		2315m	5.52	0.19	4.80	89.29	0.20
8219-082A		2330m	7.11	1.09	8.70	82.89	0.08
8219-212	SWC	2336m	20.21	2.89	35.56	40.88	0.46
8219-083AR		2345m	8.06	0.89	11.26	79.59	0.20
8219-083A		2345m	17.90	19.06	10.50	52.44	0.11
8219-131A		3039m	55.60	6.29	12.58	25.26	0.28
8219-139A		3111m	0.82	1.03	31.26	66.74	0.15
8219-143A		3147m	4.37	1.42	10.46	83.53	0.21
8219-156A		3264m	46.91	16.01	12.97	23.93	0.18

S-shale, SS-sandstone, L-limestone, D-dolomite, M-mixed, see Table 1.

TABLE 9
SIGNIFICANT C₁₅₊ RATIOS

JOB 8219	L I T H O	DEPTH/ IDENTITY	TOC (%)	mg/g TOC						HYDROCARBONS % TOTAL EXTRACT	SATURATES AROMATIC
				TOTAL EXTRACT	SATURATES	AROMATIC	TOTAL HYDROCARBONS	ELUTED NSO'S	ASPHALTENES		

WELL: N 15/6-7

8219-081A		2315m	1.58	435.03	24.01	0.82	24.83	388.45	20.89	5.71	29.29
8219-082A		2330m	1.36	307.75	21.89	3.37	25.25	255.10	26.77	8.21	6.50
8219-212	SWC	2336m	1.75	192.82	38.97	5.57	44.54	78.83	68.57	23.10	7.00
8219-083AR		2345m	1.57	194.86	15.70	1.73	17.43	155.09	21.95	8.95	9.08
8219-083A		2345m	1.57	410.26	73.42	78.19	151.61	215.16	43.06	36.95	0.94
8219-131A		3039m	0.03	20647.35	11478.90	1298.28	12777.18	5214.59	2598.35	61.88	8.84
8219-139A		3111m	0.15	3381.74	27.70	34.70	62.40	2256.93	1057.23	1.85	0.80
8219-143A		3147m	0.11	2240.28	98.01	31.80	129.81	1871.32	234.35	5.79	3.08
8219-156A		3264m	8.04	175.32	82.23	28.07	110.30	41.96	22.74	62.92	2.93

TABLE 10
COMPOSITION (NORMALISED %) OF C₁₅₊ SATURATE (PARAFFIN - NAPHTHENE) HYDROCARBONS

GEOCHEM SAMPLE NUMBER	081A	082A	212	083A	083A	131A
DEPTH	2315m	2330m	2336m	2345m	2345m	3039m
SAMPLE TYPE						
nC15	17.35	14.96	16.72	16.23	17.88	10.54
nC16	13.29	12.14	22.46	10.10	15.55	12.79
nC17	10.33	9.01	19.87	7.21	13.77	12.65
nC18	9.60	8.69	8.29	6.13	11.98	11.77
nC19	6.64	5.87	4.34	4.45	9.65	12.38
nC20	5.54	5.31	3.38	3.73	8.49	11.26
nC21	3.69	3.38	2.33	2.40	5.63	8.08
nC22	3.34	4.46	2.98	3.49	4.65	6.75
nC23	3.38	4.42	3.90	6.25	4.20	5.05
nC24	2.13	3.06	2.11	2.28	2.06	3.44
nC25	2.20	2.98	1.84	2.52	1.52	2.15
nC26	1.65	2.17	1.40	1.56	0.84	1.09
nC27	2.30	3.14	1.58	2.52	0.96	0.68
nC28	3.76	5.07	2.63	3.37	0.97	0.36
nC29	2.97	3.14	1.10	2.52	0.35	0.23
nC30	4.24	6.68	3.11	4.57	0.74	0.10
nC31	1.55	2.65	1.01	3.49	0.22	0.07
nC32	1.82	1.29	0.44	4.81	0.16	0.06
nC33	1.95	1.13	0.31	5.29	0.19	0.18
nC34	1.42	0.32	0.13	4.09	0.11	0.21
nC35	0.85	0.16	0.06	3.00	0.08	0.14
Paraffin	6.32	5.63	9.96	5.85	14.24	14.53
Isoprenoid	2.04	1.96	2.26	3.33	3.08	3.86
Naphthene	91.64	92.41	87.78	90.82	82.68	81.61
CPI 1 Index	0.99	0.94	1.02	1.26	1.11	1.04
CPI 2 Index	0.78	0.74	0.66	0.86	0.89	1.29
CPI 3 Index	0.85	0.87	0.78	1.02	1.06	0.94
Prist/Phytane	4.00	2.05	1.96	2.71	1.80	1.22
Prist/nC17	2.14	2.13	0.59	2.03	0.69	0.78
Phytane/nC18	0.58	1.07	0.72	0.88	0.44	0.68

Job Number : 8219

$$C.P.I. 1 = \frac{1}{2} \left[\frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{20} + C_{22} + C_{24} + C_{26}} + \frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{22} + C_{24} + C_{26} + C_{28}} \right]$$

$$C.P.I. 2 = \frac{1}{2} \left[\frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{24} + C_{26} + C_{28} + C_{30}} + \frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{26} + C_{28} + C_{30} + C_{32}} \right]$$

$$C.P.I. 3 = \frac{2 \times (C_{27})}{C_{26} + C_{28}}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE 10
COMPOSITION (NORMALISED %) OF C₁₅₊ SATURATE (PARAFFIN - NAPHTHENE) HYDROCARBONS

GEOCHEM SAMPLE NUMBER	139A	143A	156A
DEPTH	3111m	3147m	3264m
SAMPLE TYPE			
nC15	6.61	2.26	12.38
nC16	7.75	3.11	11.82
nC17	8.56	3.92	9.65
nC18	9.22	5.20	9.05
nC19	9.25	6.37	8.44
nC20	8.63	7.01	8.03
nC21	8.29	7.86	6.57
nC22	7.82	8.86	5.46
nC23	7.41	9.43	5.05
nC24	6.54	8.34	4.60
nC25	5.86	8.22	3.18
nC26	4.38	7.96	3.13
nC27	3.64	6.30	2.27
nC28	2.22	5.25	2.17
nC29	1.82	4.35	1.72
nC30	0.74	2.35	1.87
nC31	0.61	1.64	1.36
nC32	0.22	0.67	1.36
nC33	0.27	0.59	0.78
nC34	0.10	0.21	0.58
nC35	0.05	0.10	0.51
Paraffin	29.05	32.98	10.67
Isoprenoid	3.41	2.40	3.83
Naphthene	67.54	64.62	85.50
CPI 1 Index	1.06	1.02	0.96
CPI 2 Index	1.22	1.06	0.86
CPI 3 Index	1.10	0.95	0.86
Prist/Phytane	2.44	2.22	0.79
Prist/nC17	0.61	1.04	0.94
Phytane/nC18	0.23	0.35	1.26

Job Number : 8219

$$C.P.I. 1 = \frac{1}{2} \left[\frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{20} + C_{22} + C_{24} + C_{26}} + \frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{22} + C_{24} + C_{26} + C_{28}} \right]$$

$$C.P.I. 2 = \frac{1}{2} \left[\frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{24} + C_{26} + C_{28} + C_{30}} + \frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{26} + C_{28} + C_{30} + C_{32}} \right]$$

$$C.P.I. 3 = \frac{2 \times (C_{27})}{C_{26} + C_{28}}$$

CT - ditch cuttings CC - core SWC - sidewall core