

# Mud Properties, daily record

Well: 2/11-9

Operator: Amoco Norway Oil Company

Anchor Drilling Fluids a.s

FSR no.	Date	Depth	M.W.	F.Vis	VG-meter readings @							A.V.	P.V.	Y.P.	Gels 10s	Gels 10 m	pH	API	HTHP	Cl-	Pf	Mf	Ca++	Solids	Sand	MBT	KCL	Glycol	PHPA	LGS	
1993		m	ppg	s/qt.	600 rpm	300 rpm	200 rpm	100 rpm	6 rpm	3 rpm	cP	cP	<	lb/100 ft <sup>2</sup>	>		cc	cc	mg/l	ml	ml	mg/l	vol%	vol%	ppb	ppb	%	ppb	ppb		
<b>30" Section: Bentonite / Sea Water Mud</b>																															
1	23-07	118.0	8.8	125	67	47	-	-	-	-	33.5	20	27	-	-	10.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	24-07	121.0	8.8	100	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	25-07	194.0	8.8	100	-	-	-	-	-	-	-	-	-	-	-	10.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>26" Section: Bentonite / Sea Water Mud</b>																															
4	26-07	194	8.8	100	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	27-07	197	8.8	100	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	28-07	364	8.8	34	18	14	13	12	9	8	9	4	10	9	12	9.5	-	-	15,000	0.1	0.3	1600	3.5	0.3	-	-	-	-	-	18	
7	29-07	530	9.0	35	32	26	25	21	18	15	16	6	20	16	26	9.0	-	-	10,000	0.1	0.5	480	5	0.3	-	-	-	-	-	36	
8	30-07	920	9.1	40	38	33	31	28	24	22	19	5	28	22	29	9.0	-	-	11,000	0.2	0.6	800	5	0.3	-	-	-	-	-	28	
9	31-07	1008	9.2	38	38	34	32	29	27	24	19	4	30	28	36	9.0	-	-	11,000	0.1	0.3	1040	6	0.3	-	-	-	-	-	40	
10	01-08	1008	9.3	35	32	27	26	24	19	18	16	5	22	23	32	9.0	-	-	16,000	0.1	0.4	960	6	0.3	-	-	-	-	-	40	
11	02-08	1008	9.3	34	17	15	13	13	10	10	8.5	2	13	10	15	9.0	-	-	16,000	0.1	0.5	1240	6	0.3	-	-	-	-	-	29	
12	03-08	1008	9.3	34	24	20	18	17	14	13	12	4	16	14	18	9.0	-	-	19,000	0.1	0.6	1340	6	0.3	-	-	-	-	-	27	
13	04-08	1008	9.4	37	28	23	21	8	14	13	14	5	18	16	22	8.5	-	-	21,000	0.1	0.5	1280	7.5	-	-	-	-	-	-	46	
14	05-08	1008	9.4	40	26	21	19	16	15	13	13	5	16	12	24	9.0	-	-	21,000	0.2	0.6	1440	8	0.3	-	-	-	-	-	56	
Section Average			9.1	48	25	21	20	17	15	14	14	4	19	17	24	9.2	7.6	-	15,556	0.1	0.5	1131	6	0.29	-	-	-	-	-	36	
<b>17 1/2" Section: ANCO 2000 Mud</b>																															
15	06-08	1008	13.5	41	42	26	16	8	3	1	21	16	10	1	3	9.5	10.0	-	51,000	-	-	120	20.5	-	-	30	3.0	1.0	14		
16	07-08	1008	13.5	49	43	26	19	12	2	2	21.5	17	9	2	5	9.0	6.0	-	56,000	0.3	0.7	80	19.4	-	-	29	3.2	1.0	21		
17	08-08	1008	13.5	48	44	27	19	13	3	2	22	17	10	2	5	8.8	7.5	-	53,000	0.3	0.9	80	19.2	tr	-	29	3.2	1.2	20		
18	09-08	1011	13.5	47	46	28	19	12	3	2	23	18	10	2	3	9.6	7.0	-	59,000	0.3	1.0	80	19.4	tr	-	32	3.4	0.9	19		
19	10-08	1014	13.5	44	44	26	17	11	3	2	22	18	8	2	3	9.6	8.5	-	63,000	0.3	1.0	100	19.3	tr	7.5	32	3.3	1.1	16		
20	11-08	1304	13.5	46	71	46	36	23	5	3	35.5	25	21	.4	13	9.0	9.0	-	59,000	0.3	0.7	100	19.5	0.3	7.5	29	3.4	1.0	25		
21	12-08	1645	13.5	58	65	43	33	22	6	5	32.5	22	21	7	35	8.3	8.3	-	53,000	0.1	0.3	400	22.4	1.0	20	28	2.8	1.0	26		
22	13-08	1698	13.5	65	81	52	41	28	12	10	40.5	29	23	10	39	8.5	8.5	-	52,500	0.1	0.3	420	21.5	1.0	25	27	3.0	1.0	24		
23	14-08	1698	13.5	64	80	51	40	28	12	10	40	29	22	10	35	8.5	9.2	-	53,000	0.1	0.3	420	21.5	1.0	25	27	3.0	1.0	27		
24	15-08	1698	13.6	61	58	36	29	21	6	5	29	22	14	5	35	8.5	9.8	-	50,000	0.1	0.4	480	24	3.0	30	28	3.0	1.0	29		
25	16-08	1698	13.5	51	59	38	30	20	5	4	29.5	21	17	6	32	8.2	7.5	-	50,000	0.1	0.3	600	24	1.5	30	27	3.4	1.0	57		
26	17-08	1698	13.5	60	59	37	30	20	5	4	29.5	22	15	6	30	8.5	7.5	-	50,000	0.5	0.3	600	24	1.5	30	30	3.4	1.0	36		
27	18-08	1698	13.8	65	70	43	28	19	6	5	35	27	16	7	25	8.3	5.8	-	51,000	0.3	0.4	500	23.2	2.0	21	27	3.2	1.0	43		
28	19-08	1698	13.8	75	84	54	41	28	7	5	42	30	24	3	12	8.4	5.5	-	52,000	0.0	0.5	480	23.2	2.0	20	29	3.1	1.0	38		

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Well: 2/11-9

Operator: Amoco Norway Oil Company

Anchor Drilling Fluids a.s

FSR no.	Date	Depth	M.W. F.Vis		VG-meter readings @						A.V. cP	P.V. cP	Y.P. <	Gels 10s	Gels 10 m	pH	API cc	HTHP cc	Cl- mg/l	Pf ml	Mf ml	Ca++ mg/l	Solids vol%	Sand vol%	MBT ppb	KCL ppb	Glycol %	PHPA ppb	LGS ppb
			m	ppg	s/qt.	600 rpm	300 rpm	200 rpm	100 rpm	6 rpm																			
29	20-08	1878	13.8	52	68	42	32	20	4	3	34	26	16	4	14	8.3	5.0	-	54,000	0.0	0.3	550	23.6	1.0	17	28	3.4	0.8	17
30	21-08	1935	13.8	58	69	42	31	19	4	3	34.5	27	15	4	15	8.3	4.5	-	55,000	0.0	0.2	625	23.6	1.0	17	27	3.4	1.2	20
31	22-08	2278	13.8	47	65	40	30	19	4	3	32.5	25	15	4	12	8.3	4.5	-	56,000	0.1	0.2	860	23.4	1.0	15	29	3.2	1.1	15
32	23-08	2397	13.8	52	66	41	29	18	4	3	33	25	16	4	11	8.3	4.3	-	62,000	0.1	0.4	660	23.6	1.0	15	30	3.2	1.1	13
33	24-08	2713	13.9	52	74	45	33	20	4	3	37	29	16	4	11	8.4	4.1	-	62,000	0.1	0.4	960	24	0.5	17	32	3.2	1.3	21
34	25-08	2892	13.9	52	67	41	29	20	4	3	33.5	26	15	4	11	8.4	4.1	-	61,000	0.1	0.4	860	24	0.8	17	30	3.2	1.3	23
35	26-08	2998	13.9	49	65	40	28	18	4	3	32.5	25	15	4	11	8.5	4.3	-	61,000	0.1	0.6	800	24	0.5	15	30	3.4	1.3	22
36	27-08	2998	13.9	50	68	42	29	18	4	3	34	26	16	4	11	8.3	4.3	-	60,000	0.1	0.4	1000	24	0.5	15	28	3.2	1.6	19
37	28-08	2998	13.9	65	77	46	32	20	4	3	38.5	31	15	4	11	8.5	4.0	-	85,000	0.1	0.4	700	24	tr	10	35	3.4	2.0	11
38	29-08	2998	13.9	69	70	42	28	19	4	3	35	28	14	4	10	8.4	4.0	-	74,000	0.1	0.4	980	24	0.5	15	33	3.2	1.8	23
39	30-08	2998	13.9	55	77	46	31	19	4	3	38.5	31	15	4	11	8.4	4.0	-	71,000	0.1	0.6	880	24	0.4	18	32	3.4	1.6	17
40	31-08	2997	13.9	66	71	43	27	20	4	3	35.5	28	15	4	10	8.3	4.0	-	71,000	0.1	0.5	900	25	0.5	18	33	3.3	1.6	23
41	01-09	2997	13.9	55	77	45	31	19	4	3	38.5	32	13	3	10	8.1	4.0	-	70,000	0.0	0.2	800	24	0.3	20	27	3.2	1.6	12
42	02-09	2997	13.9	55	76	44	28	19	4	3	38	32	12	3	10	8.2	4.0	-	70,000	0.0	0.3	800	24	0.3	20	28	3.3	1.6	9
43	03-09	2997	13.9	53	74	42	27	18	4	3	37	32	10	3	10	8.0	4.2	-	70,000	0.0	0.3	800	24	0.3	20	28	3.3	1.6	9
44	04-09	2997	13.9	54	73	44	28	18	3	3	36.5	29	15	3	11	8.0	4.5	-	68,000	0.0	0.3	800	24	0.3	20	27	3.3	1.5	9
45	05-09	2997	13.9	56	75	44	28	18	4	3	37.5	31	13	3	10	8.0	4.4	-	68,000	0.0	0.3	800	24	0.3	20	27	3.3	1.5	9
Section Average			13.7	55	66	41	29	19	5	4	33	26	15	4	15	8.5	5.9	-	60,339	0.1	0.4	588	23	0.7	16	29	3.2	1.2	21
<b>12 1/4" Section: KCL/Polymer Mud</b>																													
46	06-09	3038	14.1	53	76	46	33	20	3	2	38	30	16	3	9	8.0	4.2	-	53,000	0.0	0.3	750	24.0	0.5	20	18	3.0	1.3	7
47	07-09	3038	14.0	55	72	43	32	19	3	2	36	29	14	3	7	8.2	4.5	-	63,000	0.0	0.5	800	24.4	1.0	20	20	2.0	1.3	16
48	08-09	3048	14.0	54	65	40	28	17	3	2	32.5	25	15	3	7	8.5	4.5	14.0	57,000	0.0	0.5	800	24.3	0.8	20	17	2.2	1.2	17
49	09-09	3055	14.0	57	65	40	27	17	3	2	32.5	25	15	3	7	8.5	3.5	14.0	52,000	0.0	0.5	800	24.0	0.8	20	16	2.1	1.2	16
50	10-09	3058	14.0	53	71	43	31	18	3	2	35.5	28	15	3	6	8.5	4.2	14.3	53,000	0.0	0.4	800	24.0	1.0	18	18	2.0	1.0	12
51	11-09	3069	14.0	55	67	41	28	18	3	2	33.5	26	15	3	7	8.3	4.1	14.4	53,000	0.0	0.4	800	24.0	0.8	20	17	2.0	1.0	15
52	12-09	3069	14.0	52	69	42	29	17	3	2	34.5	27	15	3	6	8.5	4.1	14.2	53,000	0.0	0.4	800	24.0	1.0	18	18	2.0	1.0	15
53	13-09	3096	14.0	50	62	39	26	16	3	2	31	23	16	2	6	8.5	4.8	15.0	39,000	0.0	0.6	740	23.4	0.6	18	13	2.0	0.6	14
54	14-09	3215	14.2	51	66	43	33	21	4	3	33	23	20	3	8	8.5	4.8	15.2	38,000	0.0	0.5	650	25.0	0.8	18	14	1.5	0.8	30
55	15-09	3322	14.1	51	77	49	36	23	3	2	38.5	28.5	20	3	11	8.5	4.2	15.4	34,000	0.0	0.6	300	24.0	1.0	17	11	1.3	0.7	21
56	16-09	3433	14.1	54	93	58	43	27	5	3	46.5	35	23	3	11	8.7	4.2	16.4	33,000	0.1	0.7	250	24.0	0.5	17	11	1.5	0.6	21
57	17-09	3446	14.0	55	82	53	41	28	4	3	41	29	24	4	9	8.8	4.2	17.0	30,000	0.1	0.9	200	23.8	0.6	17	11	1.0	0.6	26
58	18-09	3452	14.0	53	77	49	38	24	4	3	38.5	28	21	3	9	8.5	4.3	16.8	30,000	0.0	0.5	250	24.1	0.6	17	11	1.5	0.5	32
59	19-09	3468	14.0	60	79	50	37	22	4	3	39.5	29	21	3	7	8.6	4.0	18.8	30,000	0.2	0.7	300	23.8	0.6	18	11	1.7	0.5	27

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Operator: Amoco Norway Oil Company

Anchor Drilling Fluids a.s

FSR no.	Date 1993	Depth m	M.W. F.Vis		VG-meter readings @						A.V. cP	P.V. cP	Y.P. <	Gels 10s lb/100 ft <sup>2</sup>	Gels 10 m >	pH	API cc	HTHP cc	Cl- mg/l	Pf ml	Mf ml	Ca++ mg/l	Solids vol%	Sand vol%	MBT ppb	KCL ppb	Glycol %	PHPA ppb	LGS ppb
			ppg	s/qt.	600 rpm	300 rpm	200 rpm	100 rpm	6 rpm	3 rpm																			
60	20-09	3499	14.0	52	76	48	36	21	4	3	38	28	20	3	9	8.5	3.9	16.0	30,000	0.0	0.6	250	23.8	0.7	17	11	2.0	0.8	23
61	21-09	3507	14.1	51	67	43	35	19	4	2	33.5	24	19	3	7	8.5	3.6	15.8	30,000	0.0	0.6	260	24.0	0.6	18	11	2.0	0.8	23
62	22-09	3588	14.0	53	82	51	38	23	5	3	41	31	20	3	7	8.7	3.6	14.6	30,000	0.0	0.8	220	24.1	0.6	18	10	1.9	0.8	25
63	23-09	3671	14.1	52	68	42	30	18	4	3	34	26	16	3	6	8.7	3.4	14.2	30,000	0.1	0.8	220	24.2	0.7	18	10	1.8	0.8	27
64	24-09	3681	14.0	52	77	47	34	21	4	3	38.5	30	17	3	9	8.7	3.4	14.8	29,500	0.0	0.8	160	24.0	0.7	17	10	1.6	0.8	27
65	25-09	3701	14.1	53	67	42	31	18	4	2	33.5	25	17	3	7	8.8	3.6	13.6	30,000	0.1	1.1	140	24.0	0.6	17	10	1.5	0.8	23
66	26-09	3713	14.1	55	69	42	31	18	4	2	34.5	27	15	3	7	8.6	3.8	13.8	29,500	0.1	1.1	140	24.3	0.5	17	10	1.5	0.7	29
67	27-09	3778	14.2	55	84	51	38	24	5	3	42	33	18	3	10	8.7	3.6	14.8	30,000	0.1	1.3	140	24.7	0.6	17	10	1.3	0.7	30
68	28-09	3816	14.2	55	84	51	41	23	5	3	42	33	18	4	11	8.7	3.8	14.4	30,000	0.1	1.3	120	24.6	0.5	17	11	1.4	0.7	28
Section Average			14.1	54	74	46	34	21	4	2	37	28	18	3	8	8.5	4.0	13.8	38,565	0.0	0.7	430	24.1	0.7	18	13	1.8	0.8	22
<b>12 1/4" Section: KCL/Polymer Mud - Lost Radioactive Source 3816 m</b>																													
69	29-09	3816	14.2	55	84	51	41	23	5	3	42	33	18	4	11	8.7	3.8	14.4	30,000	0.1	1.3	120	24.6	0.5	17	11	1.4	0.7	28
70	30-09	3816	14.2	59	86	53	40	24	3	2	43	33	20	3	11			RADIATION CONTAMINATED MUD MIN.TESTING.											
71	01-10	3816	14.2	60	93	57	43	26	5	3	46.5	36	21	4	13	9.0	4.5	NR	NR	0.2	1.8	200	25.0	0.7	17	11	1.4	0.7	
72	02-10	3816	14.2	66	88	54	40	25	4	3	44	34	20	3	11	8.3		RADIATION CONTAMINATED MUD MIN.TESTING.											
73	03-10	3816	14.3	68	85	53	42	26	5	4	42.5	32	21	5	28			RADIATION CONTAMINATED MUD MIN.TESTING.											
74	04-10	3816	14.2	71	92	55	43	31	5	4	46	37	18	3	15	11.7	6.5	NR	29,000	1.4	2.3	320	25.6	0.8	15	11	1.4	0.5	5
75	05-10	3816	14.2	60	91	55	43	27	4	3	45.5	36	19	4	19			RADIATION CONTAMINATED MUD MIN.TESTING.											
76	06-10	3349	14.2	68	93	56	42	27	5	4	46.5	37	19	4	25	11.8	8.0	NR	29,000	1.3	2.4	550	27.0		15	11	1.0	0.5	72
77	07-10	3349	14.2	58	80	49	34	20	3	2	40	31	18	5	18	12.3	7.8	NR	25,000	1.6	3.3	592	26.5		NR	NR	1.0	NR	66
78	08-10	3349	14.2	55	79	48	33	20	3	2	39.5	31	17	4	17			RADIATION CONTAMINATED MUD MIN.TESTING.											
79	09-10	3349	14.2	60	77	48	37	19	3	2	38.5	29	19	3	7	8.6	5.0	17.5	32,000	0.1	1.1	200	24.0	-	10	11	DISP.	MUD	15
80	10-10	3349	14.2	60	68	44	34	21	4	3	34	24	20	3	8	8.5	4.8	17.5	32,000	0.05	1.0	200	24.0	-	10	11	-	-	15
81	11-10	3349	14.2	58	69	44	33	22	4	3	34.5	25	19	3	7	8.5	5.0	18.0	32,000	0.1	1.0	200	24.0	-	10	11	-	N/R	15
82	12-10	3349	14.2	58	63	44	37	23	4	3	31.5	19	25	3	7	8.5	5.2	NR	30,000	0.1	1.0	200	24.0	-	NR	10	-	1.8	16
83	13-10	3349	14.1	53	62	41	32	22	4	3	31	21	20	3	7	8.4	5.3	NR	32,000	0.1	0.9	375	23.5	-	NR	11	-	NR	12
84	14-10	3349	14.1	52	56	37	29	18	4	2	28	19	18	3	6	8.4	5.6	NR	31,000	0.0	0.9	400	23.5	-	10	11	-	NR	13
85	15-10	3349	10.2	55	56	38	29	18	11	7	28	18	20	2	5	8.4	5.4	NR	31,000	0.1	0.9	380	9.0	-	8	11	-	NR	11
86	16-10	3349	14.2	70	50	33	22	14	5	3	25	17	16	3	7	8.4	4.8	NR	30,000	0.1	0.1	320	23.3	-	3	11	-	NR	3
87	17-10	3349	14.2	54	55	36	25	16	7	3	27.5	19	17	4	6	8.5	4.8	NR	31,000	0.1	0.9	340	23.3	-	3	11	-	-	2
88	18-10	3349	14.2	60	61	40	29	21	13	7	30.5	21	19	5	11	8.9	4.0	NR	33,000	0.2	1.1	120	23.4	-	2	11	-	-	3
89	19-10	3349	14.2	64	77	51	42	27	6	4	38.5	26	25	4	9	10.5	7.8	NR	31,000	0.5	1.4	460	27.0	-	5	11	-	-	1
90	20-10	3350	15.5	58	68	45	31	22	6	3	34	23	22	3	8	10.3	7.2	NR	31,000	0.4	1.4	440	28.0	0.01	3	11	-	-	1

# Mud Properties, daily record

Well: 2/11-9

Operator: Amoco Norway Oil Company

Anchor Drilling Fluids a.s

FSR no.	Date 1993	Depth m	M.W. F.Vis		VG-meter readings @						A.V. cP	P.V. cP	Y.P. <	Gels 10s lb/100 ft <sup>2</sup>	Gels 10 m >	pH	API cc	HTHP cc	Cl- mg/l	Pf ml	Mf ml	Ca++ mg/l	Solids vol%	Sand vol%	MBT ppb	KCL ppb	Glycol %	PHPA ppb	LGS ppb
			ppg	s/qt.	600 rpm	300 rpm	200 rpm	100 rpm	6 rpm	3 rpm																			
91	21-10	3350	14.2	56	51	33	21	14	5	3	25.5	18	15	3	6	11.0	6.8	NR	32,000	0.9	1.8	640	23.5	0.01	3	11	-	-	6
92	22-10	3389	14.2	63	77	52	41	27	7	5	38.5	25	27	5	10	11.5	7.6	19.0	30,000	1.2	2.8	640	23.5	0.02	5	11	-	-	7
93	23-10	3390	14.2	62	70	46	36	23	7	4	35	24	22	5	14	10.8	10.4	22.0	30,000	1.3	2.8	600	23.5	0.03	8	11	-	-	7
94	24-10	3402	14.2	53	78	52	43	29	7	5	39	26	26	5	11	11.5	7.2	21.0	30,000	0.8	3.2	1000	23.5	0.01	8	11	-	-	7
95	25-10	3470	14.2	56	80	52	39	25	6	4	40	28	24	4	12	10.6	5.4	18.2	31,000	0.8	2.9	700	23.6	0.01	8	11	-	-	8
96	26-10	3470	14.2	60	79	50	42	34	6	4	39.5	29	21	5	13	10.8	5.6	18.6	30,000	0.9	3.0	640	23.6	0.02	8	11	-	-	9
97	27-10	3434	14.2	65	68	44	32	21	6	4	34	24	20	4	10	12.6	6.6	23.4	29,500	1.3	3.6	880	24.0	0.04	10	10	-	-	16
98	28-10	3497	14.2	50	70	44	33	21	4	3	35	26	18	4	19	13.1	5.6	24.0	30,000	2.0	3.4	800	25.0	0.04	10	10	-	-	35
99	29-10	3501	14.2	58	79	49	35	21	4	3	39.5	30	19	4	19	12.5	6.3	24.5	30,000	1.3	3.1	850	25.0	0.04	10	10	-	-	35
100	30-10	3501	14.2	60	80	49	37	27	5	3	40	31	18	5	16	12.7	6.6	25.2	30,000	1.4	3.3	875	24.5	0.04	10	11	-	-	25
101	31-10	3264	14.2	54	73	45	31	18	4	3	36.5	28	17	4	16	12.5	6.5	26.0	30,000	1.3	3.2	500	25.2	0.04	10	10	-	-	39
102	01-11	3293	14.2	61	79	50	38	29	4	3	39.5	29	21	4	17	12.7	8.0	36.0	30,000	1.4	4.0	880	24.7	0.03	12	11	-	-	29
103	02-11	3296	14.2	72	87	51	44	30	6	4	43.5	36	15	5	25	12.1	7.6	38.0	29,000	0.4	2.6	800	24.5	0.04	12	11	-	-	26
104	03-11	3309	14.2	52	70	43	31	19	3	2	35	27	16	3	16	11.2	6.8	36.0	30,000	0.3	1.8	860	24.7	0.03	11	11	-	-	29
105	04-11	3310	14.2	63	85	53	38	24	5	3	42.5	32	21	4	17	12.0	7.0	-	30,000	0.4	1.7	800	27.7	0.04	11	11	-	-	29
106	05-11	3360	14.2	53	64	41	30	19	3	2	32.0	23	18	3	10	10.5	5.6	28.0	29,000	0.20	4.5	1250	26	0.75	12	11	-	-	26
107	06-11	3445	14.2	59	75	48	36	22	4	3	37.5	27	21	5	11	10.2	5.6	23.8	30,000	0.09	3.5	1200	24	0.75	12	11	-	-	16
108	07-11	3456	14.2	55	78	49	38	22	4	3	39.0	29	20	3	11	9.8	5.5	25.5	30,000	0.10	3.2	900	24	0.75	12	11	-	-	16
109	08-11	3509	14.2	56	78	49	41	26	5	4	39.0	29	20	4	10	9.2	5.2	25.5	31,000	0.10	2.5	1000	24	0.75	12	11	-	-	19
110	09-11	3509	14.2	52	71	45	35	22	5	4	35.5	26	19	4	11	9.3	5.4	24.8	30,000	0.02	3.5	1000	24.5	0.75	12	11	-	-	25
111	10-11	3508	14.2	55	70	45	34	22	4	3	35.0	25	20	4	10	9.3	5.5	25.0	30,000	0.02	3.5	1000	24.5	0.8	12	11	-	-	25
112	11-11	3509	14.2	56	80	52	39	29	5	3	40.0	28	24	5	10	9.5	6.0	25.8	31,000	0.14	2.7	860	24.5	0.8	12	11	-	-	25
113	12-11	3529	14.2	56	80	52	45	32	9	6	40.0	28	24	5	11	9.2	5.8	27.0	31,000	0.12	2.9	1000	24.5	0.6	12	10	-	-	25
114	13-11	3565	14.2	54	78	51	44	31	9	6	39.0	27	24	7	12	8.9	6.0	27.4	31,000	0.12	3.0	520	24.6	0.7	12	10	-	-	27
115	14-11	3572	14.2	56	79	52	43	31	9	6	39.5	27	25	7	11	9.0	6.2	34.0	31,000	0.15	4.2	-	24.6	0.7	11	11	-	-	27
116	15-11	3572	14.2	54	72	48	40	29	8	5	36.0	24	24	6	10	9.1	6.0	32.0	31,000	0.16	4.4	460	24.6	0.6	10	10	-	-	27
117	16-11	3576	14.2	58	87	56	45	33	9	6	43.5	31	25	6	10	9.2	5.4	34.0	31,000	0.16	4.8	460	24.8	0.6	10	10	-	-	30
118	17-11	3692	14.2	52	78	52	43	29	7	5	39.0	26	26	5	10	9.2	4.4	25.0	31,000	0.15	5.0	560	25	0.6	10	10	-	-	34
119	18-11	3800	14.2	52	81	52	42	29	6	5	40.5	29	23	5	10	9.1	4.8	20.0	31,000	0.18	5.0	440	25.2	0.5	10	10	-	-	38
12 1/4" Section: KCl/Polymer Mud From 3816 m																													
120	19-11	3850	14.6	51	77	49	38	25	6	4	38.5	28	21	5	11	9.0	5.0	21.0	31,000	0.20	4.2	360	27.0	0.5	14	10	-	-	44

# Mud Properties, daily record

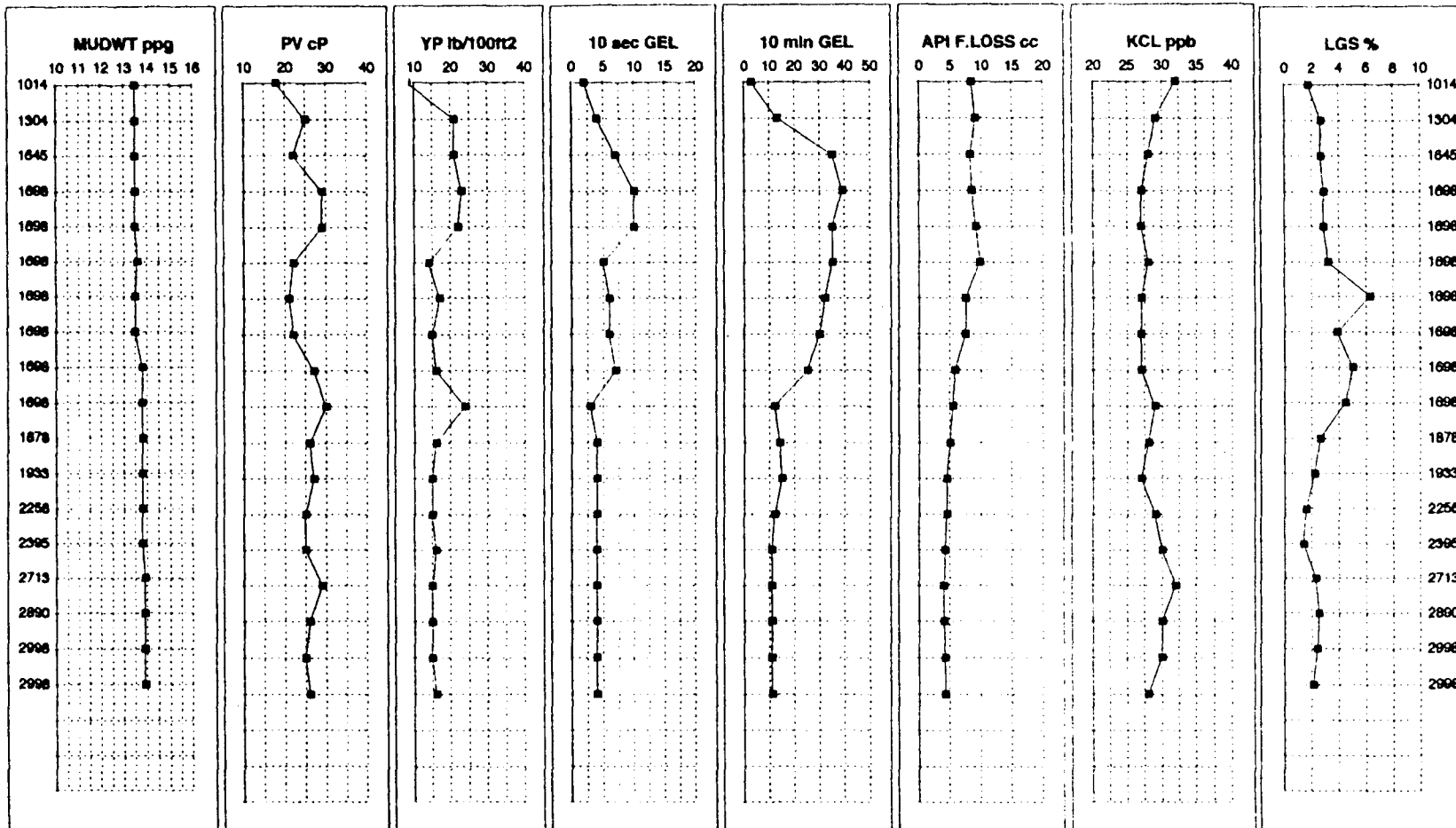
Well: 2/11-9

Operator: Amoco Norway Oil Company

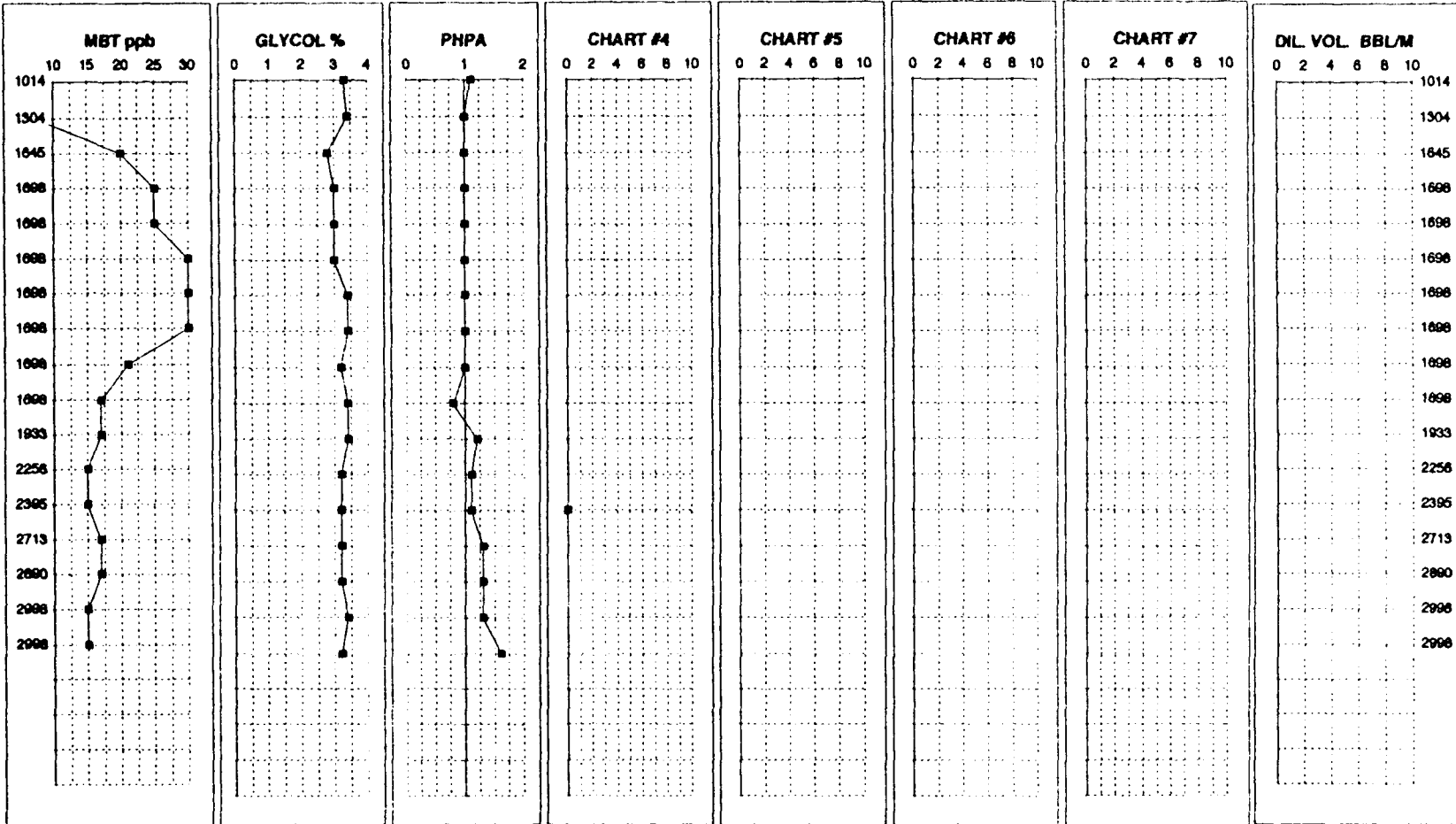
Anchor Drilling Fluids a.s

FSR no.	Date	Depth	M.W. F.Vis		VG-meter readings @						A.V.	P.V.	Y.P.	Gels		pH	API	HTHP	Cl-	Pf	Mf	Ca++	Solids	Sand	MBT	KCL	Glycol	PHPA	LGS
			ppg	s/qt.	600 rpm	300 rpm	200 rpm	100 rpm	6 rpm	3 rpm				10s	10 m														
.	.	m			rpm	rpm	rpm	rpm	rpm	rpm	cP	cP	<	lb/100 ft <sup>2</sup>	>	.	cc	cc	mg/l	ml	ml	mg/l	vol%	vol%	ppb	ppb	%	ppb	ppb
121	20-11	3950	14.6	50	80	51	41	27	6	4	40.0	29	22	5	14	9.0	4.6	20.0	33,000	0.15	4.2	320	27.0	0.5	14	11	-	-	42
122	21-11	3976	14.9	50	87	54	41	27	6	5	43.5	33	21	6	14	9.0	4.3	19.5	31,000	0.22	3.6	340	28.6	0.4	14	11	-	-	53
123	22-11	3976	14.9	52	84	52	39	28	6	4	42.0	32	20	6	13	9.0	4.6	22.0	31,000	0.20	3.4	360	28.0	0.4	14	11	-	-	42
124	23-11	3976	15.0	52	81	52	42	28	6	5	40.5	29	23	7	18	8.5	4.8	32.0	33,000	0.18	3.2	300	29.0	0.4	15	11	-	-	52
125	24-11	4023	14.9	57	90	56	39	25	5	3	45.0	34	22	4	13	8.5	3.4	17.8	32,000	0.16	3.2	300	28.5	0.5	14	11	-	-	50
126	25-11	4064	14.9	57	87	52	40	25	6	4	43.5	35	17	4	14	8.8	3.4	18.5	31,000	0.20	3.6	340	28.3	0.5	12	11	-	-	47
127	26-11	4102	14.9	61	90	54	41	26	6	4	45.0	36	18	5	15	8.8	3.6	19.0	31,000	0.20	3.8	340	28.5	0.5	11	11	-	-	51
128	27-11	4102	14.9	55	94	56	41	27	6	5	47.0	38	18	5	15	8.9	3.6	18.0	31,000	0.20	3.7	340	28.3	0.5	11	11	-	-	47
129	28-11	4145	14.9	54	80	49	38	24	7	5	40.0	31	18	6	17	8.7	4.0	21.0	33,000	0.20	4.0	340	28.5	0.5	10	11	-	-	46
130	29-11	4195	14.9	56	86	51	39	24	5	4	43.0	35	16	5	16	8.6	3.7	18.0	32,000	0.20	4.0	400	29.0	0.5	10	11	-	-	50
131	30-11	4210	14.9	59	90	53	36	25	6	4	45.0	37	16	5	19	8.4	3.6	18.0	32,000	0.20	4.0	360	29.0	0.5	10	11	-	-	53
132	01-12	4224	14.9	55	85	50	37	22	5	4	42.5	35	15	4	14	8.4	3.6	18.0	32,000	0.20	4.0	320	28.5	0.5	9	11	-	-	50
133	02-12	4224	14.9	58	79	47	31	20	4	3	39.5	32	15	3	14	8.5	3.6	20.0	32,000	0.10	3.8	360	28.9	0.4	10	11	-	-	58
134	03-12	4228	14.9	54	80	48	35	24	5	4	40.0	32	16	4	14	8.4	3.6	22.0	32,000	0.10	4.0	360	28.8	0.4	10	11	-	-	56
135	04-12	4255	14.9	59	74	44	30	17	4	3	37.0	30	14	3	11	8.2	3.6	20.0	32,000	0.10	4.0	380	29.0	0.4	9	11	-	-	61
136	05-12	4255	14.9	56	70	42	31	19	3	2	35.0	28	14	3	12	8.2	3.8	21.0	32,000	0.10	4.0	380	28.7	0.3	9	12	-	-	54
137	06-12	4293	14.9	52	73	43	29	17	4	2	36.5	30	13	3	10	9.0	3.7	17.0	31,000	0.20	3.8	480	28.0	0.5	9	10	-	-	42
138	07-12	4335	14.9	52	84	50	37	22	4	2	42.0	34	16	3	13	9.0	3.7	24.0	31,000	0.30	4.0	420	30.0	0.8	10	11	-	-	60
139	08-12	4375	14.9	50	82	50	30	22	4	3	41.0	32	18	4	14	8.5	3.8	20.0	28,000	0.10	3.3	380	30.0	1.0	10	11	-	-	71
140	09-12	4406	14.9	52	91	55	42	25	6	5	45.5	36	19	4	15	8.9	4.1	19.0	28,000	0.30	3.4	260	29.5	1.0	10	11	-	-	71
141	10-12	4406	14.9	49	78	48	33	20	4	3	39.0	30	18	3	13	9.4	4.2	19.0	27,000	0.40	3.8	380	28.5	0.7	10	11	-	-	53
142	11-12	4406	14.9	50	79	48	37	22	4	3	39.5	31	17	3	14	8.7	4.1	19.0	30,000	0.30	3.9	360	28.5	0.7	10	11	-	-	51
143	12-12	4406	14.9	52	87	52	38	23	4	3	43.5	35	17	4	13	8.6	3.6	19.0	30,000	0.25	3.8	360	28.5	0.7	10	11	-	-	51
144	13-12	4406	14.9	51	78	46	32	21	4	3	39.0	32	14	4	15	8.5	4.1	19.0	29,000	0.25	3.7	280	28.5	0.7	10	11	-	-	49
145	14-12	4406	14.9	53	80	47	36	20	4	3	40.0	33	14	4	14	8.5	4.6	19.0	29,000	0.25	3.8	280	28.5	0.7	10	11	-	-	48
146	15-12	4406	14.9	55	77	46	33	20	5	3	38.5	31	15	3	13	9.2	5.4	-	29,000	0.28	3.8	460	28	0.7	10	10	-	-	43
147	16-12	4406	14.9	57	79	48	34	22	6	4	39.5	31	17	4	15	10.4	6.2	-	29,000	0.30	4.4	640	28.5	0.7	10	10	-	-	52
148	17-12	4406	14.9	55	76	45	35	23	4	3	38.0	31	14	3	14	10.5	7.0	-	30,000	0.28	4.6	760	28.5	0.6	10	10	-	-	79
149	18-12	4406	14.9	58	78	46	37	22	5	3	39.0	32	14	4	15	-	7.4	-	29,000	0.32	4.8	960	28.5	0.6	10	10	-	-	70
150	19-12	650	14.9	51	67	39	29	19	4	3	33.5	28	11	3	11	12.0	8.6	-	29,000	0.34	4.4	1100	29	0.6	10	10	-	-	65
Section Average			14.9	54	81	49	36	23	5	4	41	32	17	4	14	8.6	4.4	20.0	30,645	0.26	4.6	420	29	0.7	11	11	-	-	54

# AMOCO S. HOD 2/11-9 17 1/2" MUD PROPERTIES

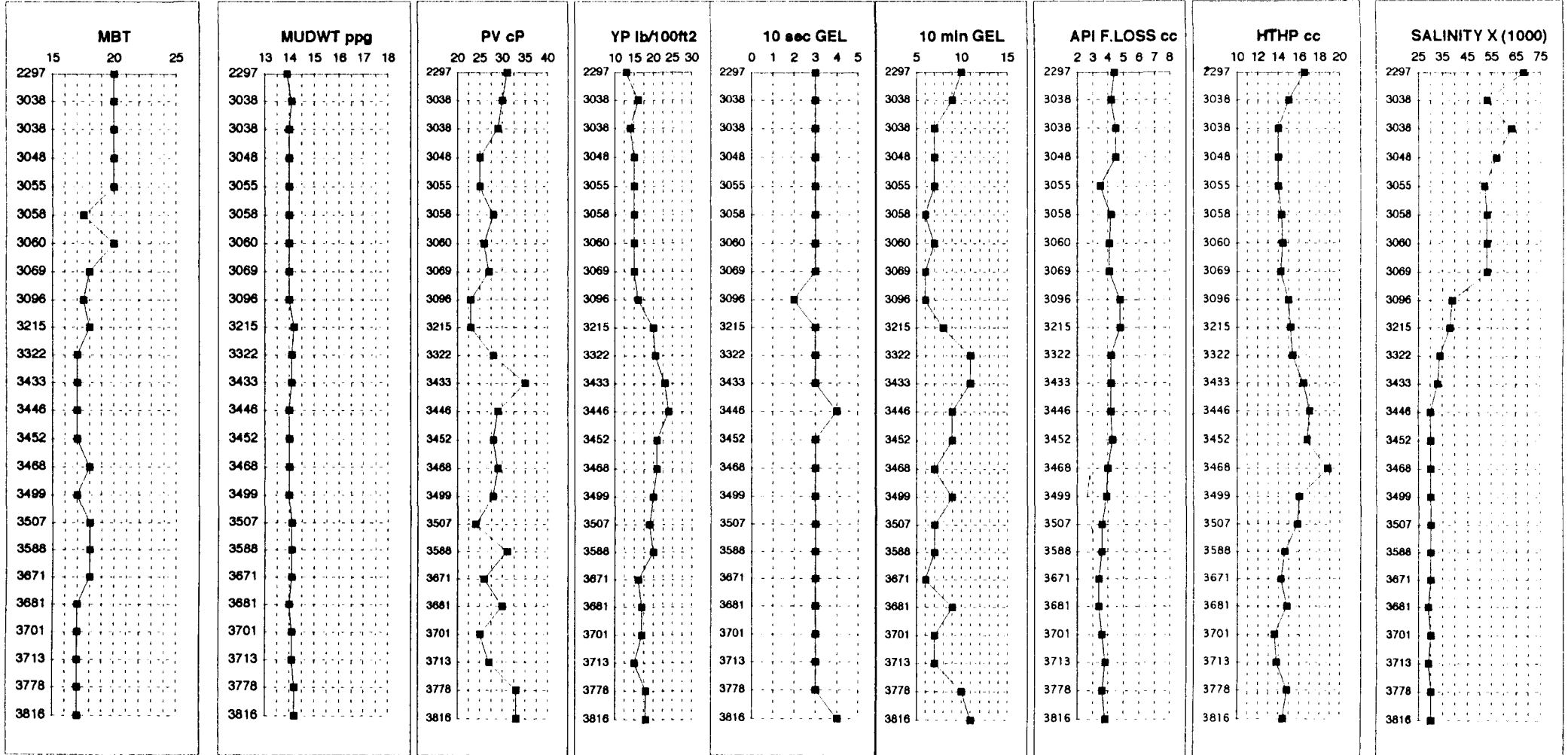


**AMOCO S. HOD 2/11-9  
17 1/2" MUD PROPERTIES**



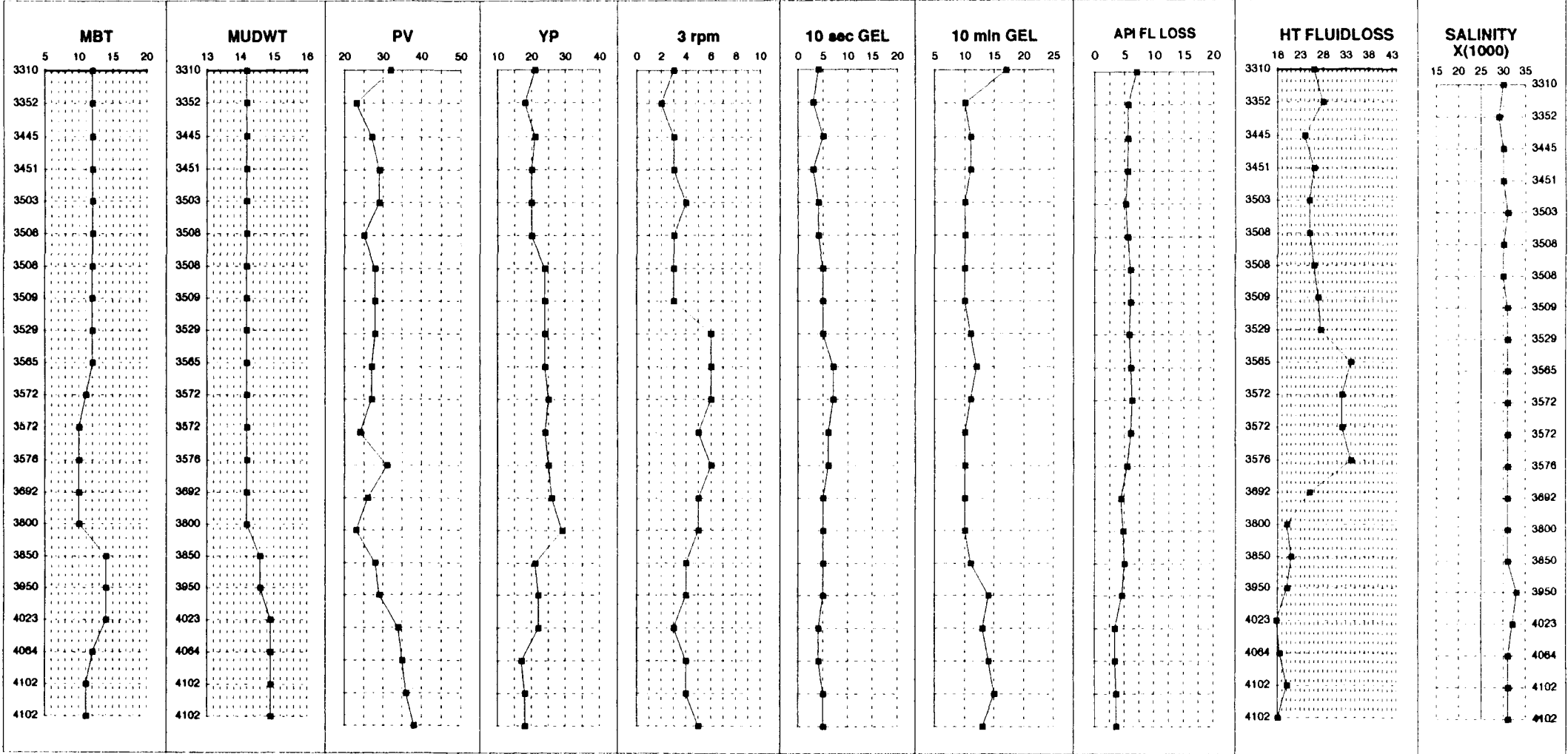
# AMOCO S. HOD 2/11-9 ORIGINAL WELL

## 12 1/4" MUD PROPERTIES





**AMOCO S. HOD 2/11-9 ST-1  
12 1/4" MUD PROPERTIES**





# Geochemical Report for

## Well NOCS 2/11-9

Authors:

Peter Barry Hall  
Henning Jensen  
Ian L. Ferriday  
Sunil Bharati

3A-94-1261-1

24 JUNI 1994

**REGISTRERT**  
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Norway

Date : 07.03.94

## Chapter 1

# INTRODUCTION

## 1.1 General Comments

The following sample sets were supplied by Amoco Norway:

Unwashed bagged samples: 190-550 m, 560-890 m, 900-1230 m, 1240-1530 m, 1550-1790 m, 1800-2080 m, 2090-2330 m, 2430-2590 m, 2600-2799 m, 2802-2895 m, 2898-2997 m, 3303-3499 m, 3403-3499 m, 3499-3598 m, 3598-3688 m, 3668-3778 m, 3781-3868 m, 3871-3960 m, 3963-4053 m, 4056-4152 m (4101-4152 m), 4155-4269 m, 4272-4371 m, 4374-4404 m.

Canned samples: 2750-3800 m, sidetrack 3300-4410 m (30 m intervals).

The traces of migrated hydrocarbons in the Upper Cretaceous Shetland Gp. chalk sequence in well NOCS 2/11-9 has been compared with the two Hod oils 2/11-2 and 2/11-6A. The comparison includes in particular the  $C_{15+}$   $\delta^{13}C$  isotope values and the GC-MS analyses. The comparison, included in the relevant sections in this report, treats source as well as maturity.

## 1.2 Analytical Program

The analytical program is presented below, with number of samples for each analysis type. The samples used for the analyses are shown in the Figure 2, including types of samples and the depth.

<u>Analysis type</u>	<u>No of samples</u>	<u>Figures</u>	<u>Tables</u>
Gas analysis	35	3a-c	1a-c
Lithology description	52+	2	2
TOC	52	4	2,3
Rock-Eval pyrolysis	52	5-11	3
Thermal extraction GC (GHM, S <sub>1</sub> )	4	12a-b	
Pyrolysis GC (GHM, S <sub>2</sub> )	4	13a-b,14	4
Soxtec Extraction of organic matter	10		
MPLC/HPLC separation	10	15	5a-d
Saturated hydrocarbon GC	10	16,18a-c	6
Aromatic hydrocarbon GC	10	17,19a-e	7a-b
Vitrinite reflectance	38	20	8
Visual kerogen microscopy	20	21	8,9
Isotope composition C <sub>15</sub> + fractions	5	22,23	10a-b
GC - MS of saturated and aromatic HC	5	24a-?, 25a-?	11a-i

- 1-

Table 1a: C1 to C7 hydrocarbons in HEADSPACE gas  
( $\mu\text{l}$  gas/kg rock)

Project: 2/11-9

Well: NOCS 2/11-9

Depth unit of measure: m

\* Indicated values in ml gas/kg rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 --- nC4
3020.00	333	46	126	19	64	33	588	255	43.4	0.30
3050.00	249	30	91	15	52	33	437	188	43.0	0.29
3060.00	53	4	11	4	15	60	87	34	39.1	0.27
3100.00	303	783	4323	1061	3822	3525	10292	9989	97.1	0.28
3130.00	60	2	321	165	598	1074	1146	1086	94.8	0.28
3190.00	-	-	-	-	-	-	-	-	-	-
3220.00	39	4	20	6	41	71	110	71	64.6	0.15
3250.00	36	12	214	34	298	255	594	558	93.9	0.11
3280.00	99	13	68	56	177	595	413	314	76.0	0.32
3310.00	48	6	14	5	25	83	98	50	51.0	0.20
3330.00	15	2	10	6	40	95	73	58	79.5	0.15
3340.00	35	5	44	15	135	190	234	199	85.0	0.11
3360.00	14	2	4	3	12	43	35	21	60.0	0.25
3390.00	11	1	6	2	12	32	32	21	65.6	0.17
3420.00	8	1	5	2	14	38	30	22	73.3	0.14
3450.00	6	1	3	1	5	15	16	10	62.5	0.20
3480.00	11	5	28	15	53	163	112	101	90.2	0.28
3510.00	9	2	8	4	15	37	38	29	76.3	0.27
3540.00	30	4	20	7	60	275	121	91	75.2	0.12
3570.00	51	5	13	5	21	49	95	44	46.3	0.24
3600.00	11	3	35	28	99	179	176	165	93.8	0.28
3630.00	2	1	4	1	8	28	16	14	87.5	0.13
3660.00	24	13	273	185	830	1880	1325	1301	98.2	0.22

- 2-

Table 1a: C1 to C7 hydrocarbons in HEADSPACE gas  
( $\mu$ l gas/kg rock)

Project: 2/11-9

Well: NOCS 2/11-9

Depth unit of measure: m

\* Indicated values in ml gas/kg rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 --- nC4
3710.00	12	2	10	8	35	186	67	55	82.1	0.23
3740.00	31	15	65	29	124	420	264	233	88.3	0.23
3770.00	12	2	7	3	9	17	33	21	63.6	0.33
3780.00	13	1	1	-	3	16	18	5	27.8	-
3810.00	46	11	24	10	64	88	155	109	70.3	0.16
3840.00	102	44	22	3	11	22	182	80	44.0	0.27
3870.00	81	31	35	7	29	59	183	102	55.7	0.24
3900.00	145	95	224	68	271	536	803	658	81.9	0.25
4080.00	95	24	11	1	6	19	137	42	30.7	0.17
4110.00	69	31	55	11	64	97	230	161	70.0	0.17
4140.00	536	184	37	4	18	38	779	243	31.2	0.22
4170.00	1341	240	52	4	8	18	1645	304	18.5	0.50
4200.00	15947	1413	250	14	29	31	17653	1706	9.7	0.48

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Table 1b: C1 to C7 hydrocarbons in CUTTINGS gas  
( $\mu\text{l}$  gas/kg rock)

Project: 2/11-9

Well: NOCS 2/11-9

Depth unit of measure: m

\* Indicated values in ml gas/kg source rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 --- nC4
3020.00	5	-	1	-	1	3	7	2	28.6	-
3050.00	16	1	1	-	2	4	20	4	20.0	-
3060.00	13	2	1	-	1	6	17	4	23.5	-
3100.00	27	7	165	212	967	7708	1378	1351	98.0	0.22
3130.00	33	6	4	1	7	274	51	18	35.3	0.14
3190.00	25	4	2	1	1	21	33	8	24.2	1.00
3220.00	35	7	10	5	52	387	109	74	67.9	0.10
3250.00	33	6	4	1	12	153	56	23	41.1	0.08
3280.00	29	5	3	1	3	112	41	12	29.3	0.33
3310.00	24	4	2	1	3	76	34	10	29.4	0.33
3330.00	12	2	1	1	3	106	19	7	36.8	0.33
3340.00	26	4	2	1	2	51	35	9	25.7	0.50
3360.00	19	3	1	-	1	26	24	5	20.8	-
3390.00	15	2	1	1	2	46	21	6	28.6	0.50
3420.00	13	2	1	1	2	99	19	6	31.6	0.50
3450.00	19	3	2	1	2	42	27	8	29.6	0.50
3480.00	20	4	2	1	4	109	31	11	35.5	0.25
3510.00	16	3	2	1	2	51	24	8	33.3	0.50
3540.00	10	2	1	-	1	23	14	4	28.6	-
3570.00	40	4	3	2	7	69	56	16	28.6	0.29
3600.00	12	2	4	7	33	852	58	46	79.3	0.21
3630.00	10	2	1	1	1	53	15	5	33.3	1.00
3660.00	12	2	5	8	55	867	82	70	85.4	0.15



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Table 1b: C1 to C7 hydrocarbons in CUTTINGS gas  
( $\mu$ l gas/kg rock)

Project: 2/11-9

Well: NOCS 2/11-9

Depth unit of measure: m \* Indicated values in ml gas/kg source rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 --- nC4
3710.00	22	5	3	-	2	35	32	10	31.3	-
3740.00	36	7	7	4	23	763	77	41	53.3	0.17
3770.00	18	3	3	2	9	410	35	17	48.6	0.22
3780.00	12	1	1	1	1	37	16	4	25.0	1.00
3810.00	15	2	1	1	6	125	25	10	40.0	0.17
3840.00	25	9	14	3	20	127	71	46	64.8	0.15
3870.00	23	4	5	1	8	127	41	18	43.9	0.13
3900.00	42	13	53	40	236	2018	384	342	89.1	0.17
4080.00	19	5	25	6	32	186	87	68	78.2	0.19
4110.00	33	2	4	8	-	69	47	14	29.8	-
4140.00	194	43	29	4	14	72	284	90	31.7	0.29
4170.00	390	112	37	5	16	84	560	170	30.4	0.31
4200.00	1881	602	180	14	52	108	2729	848	31.1	0.27

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Table 1c: C1 to C7 hydrocarbons in HEADSPACE and CUTTINGS gas  
( $\mu\text{l}$  gas/kg rock)

Project: 2/11-9

Well: NOCS 2/11-9

Depth unit of measure: m

\* Indicated values in ml gas/kg source rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 --- nC4
3020.00	338	46	127	19	65	36	595	257	43.2	0.29
3050.00	265	31	92	15	54	37	457	192	42.0	0.28
3060.00	66	6	12	4	16	66	104	38	36.5	0.25
3100.00	330	790	4488	1273	4789	11233	11670	11340	97.2	0.27
3130.00	93	8	325	166	605	1348	1197	1104	92.2	0.27
3190.00	25	4	2	1	1	21	33	8	24.2	1.00
3220.00	74	11	30	11	93	458	219	145	66.2	0.12
3250.00	69	18	218	35	310	408	650	581	89.4	0.11
3280.00	128	18	71	57	180	707	454	326	71.8	0.32
3310.00	72	10	16	6	28	159	132	60	45.5	0.21
3330.00	27	4	11	7	43	201	92	65	70.7	0.16
3340.00	61	9	46	16	137	241	269	208	77.3	0.12
3360.00	33	5	5	3	13	69	59	26	44.1	0.23
3390.00	26	3	7	3	14	78	53	27	50.9	0.21
3420.00	21	3	6	3	16	137	49	28	57.1	0.19
3450.00	25	4	5	2	7	57	43	18	41.9	0.29
3480.00	31	9	30	16	57	272	143	112	78.3	0.28
3510.00	25	5	10	5	17	88	62	37	59.7	0.29
3540.00	40	6	21	7	61	298	135	95	70.4	0.11
3570.00	91	9	16	7	28	118	151	60	39.7	0.25
3600.00	23	5	39	35	132	1031	234	211	90.2	0.27
3630.00	12	3	5	2	9	81	31	19	61.3	0.22

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Table 1c: C1 to C7 hydrocarbons in HEADSPACE and CUTTINGS gas  
( $\mu\text{l}$  gas/kg rock)

Project: 2/11-9

Well: NOCS 2/11-9

Depth unit of measure: m \* Indicated values in ml gas/kg source rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 --- nC4
3660.00	36	15	278	193	885	2747	1407	1371	97.4	0.22
3710.00	34	7	13	8	37	221	99	65	65.7	0.22
3740.00	67	22	72	33	147	1183	341	274	80.4	0.22
3770.00	30	5	10	5	18	427	68	38	55.9	0.28
3780.00	25	2	2	1	4	53	34	9	26.5	0.25
3810.00	61	13	25	11	70	213	180	119	66.1	0.16
3840.00	127	53	36	6	31	149	253	126	49.8	0.19
3870.00	104	35	40	8	37	186	224	120	53.6	0.22
3900.00	187	108	277	108	507	2554	1187	1000	84.3	0.21
4080.00	114	29	36	7	38	205	224	110	49.1	0.18
4110.00	102	33	59	19	64	166	277	175	63.2	0.30
4140.00	730	227	66	8	32	110	1063	333	31.3	0.25
4170.00	1731	352	89	9	24	102	2205	474	21.5	0.38
4200.00	17828	2015	430	28	81	139	20382	2554	12.5	0.35

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Table 2 : Lithology description for well NOCS 2/11-9

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description			
1250.00						0062
		100	Sh/Clst: brn gy, lt ol gy, slt, mic			0062-1L
1500.00						0063
		100	Sh/Clst: lt gn gy			0063-1L
1800.00						0064
		100	Sh/Clst: gy brn, dsk brn, dsk y brn			0064-1L
1900.00						0065
		100	Sh/Clst: brn gy			0065-1L
		tr Ca	: or gy			0065-2L
2000.00						0066
		100	Sh/Clst: lt brn gy, lt gn gy			0066-1L
		tr Ca	: or gy			0066-2L
2150.00						0001
	0.71	100	Sh/Clst: lt ol gy to lt gn gy, m lt gy			0001-1L
		tr Ca	: lt or gy			0001-2L
2210.00						0002
	0.69	100	Sh/Clst: lt ol gy to lt gn gy, m lt gy			0002-4L
		tr Ca	: lt or gy			0002-5L

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Table 2 : Lithology description for well NOCS 2/11-9

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int Cvd	TOC%	%	Lithology description				
2270.00						0005	
	0.86	100	Sh/Clst: lt ol gy to lt gn gy, m lt gy, pyr tr Ca : lt or gy, w				0005-1L 0005-2L
2330.00						0007	
	0.94	100	Sh/Clst: lt ol gy to lt gn gy, m lt gy tr Ca : lt or gy, w				0007-1L 0007-2L
2390.00						0008	
	0.91	100	Sh/Clst: lt ol gy to lt gn gy, m lt gy tr Ca : lt or gy, w				0008-1L 0008-2L
2450.00						0009	
	1.01	100	Sh/Clst: lt ol gy to lt gn gy, m lt gy tr Ca : lt or gy, w				0009-1L 0009-2L
2510.00						0010	
	0.88	100	Sh/Clst: lt ol gy to lt gn gy, m lt gy tr Ca : lt or gy, w				0010-1L 0010-2L
2520.00						0011	
	0.81	100	Sh/Clst: lt ol gy to lt gn gy, m lt gy tr Ca : lt or gy, w				0011-1L 0011-2L

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Table 2 : Lithology description for well NOCS 2/11-9

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int Cvd	TOC%	%	Lithology description				
2630.00						0012	
	0.89	100	Sh/Clst: lt ol gy to lt gn gy, m lt gy tr Ca : lt or gy, w			0012-1L 0012-2L	
2690.00						0013	
	0.83	100	Sh/Clst: lt ol gy to lt gn gy, m lt gy tr Ca : lt or gy, w			0013-1L 0013-2L	
2750.00						0014	
	0.92	100	Sh/Clst: lt ol gy to lt gn gy, m lt gy tr Ca : lt or gy, w			0014-1L 0014-2L	
2810.00						0015	
	0.82	100	Sh/Clst: lt ol gy to lt gn gy, m lt gy, m drk gy, calc tr Ca : lt or gy, w			0015-1L 0015-2L	
2870.00						0016	
	1.89	95	Sh/Clst: lt ol gy to lt gn gy, m lt gy, m drk gy, brn gy, calc 5 Ca : lt or gy			0016-1L 0016-2L	
2930.00						0017	
		80	Sh/Clst: lt ol gy to lt gn gy, m lt gy, m drk gy, brn gy, calc			0017-1L	
	2.89	20	Sh/Clst: brn gy to dsk y brn			0017-2L	

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Table 2 : Lithology description for well NOCS 2/11-9

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int Cvd	TOC%	%	Lithology description				
2960.00						0018	
		60	Sh/Clst:	lt gy, lt bl gy, tuf		0018-1L	
		40	Sh/Clst:	lt gy to m gy		0018-2L	
		tr	Sh/Clst:	ol gy to dsk y gy, gy red		0018-3L	
2990.00						0019	
	1.43	90	Sh/Clst:	m drk gy, m gy to drk gy		0019-1L	
		10	Ca	: lt or gy, w, slt, s, glauc		0019-2L	
3020.00						0020	
	0.37	50	Sh/Clst:	lt bl gy, lt gn gy, gy red		0020-1L	
		50	Cont	: cem		0020-2L	
3050.00						0021	
	0.25	80	Sh/Clst:	lt bl gy, lt gn gy		0021-1L	
		20	Sh/Clst:	gy red, s		0021-2L	
3060.00						0022	
	0.09	100	Ca	: w, st		0022-1L	
3100.00						0023	
	0.14	100	Ca	: w, st		0023-1L	
3130.00						0024	
	0.10	100	Ca	: w, st		0024-1L	

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Table 2 : Lithology description for well NOCS 2/11-9

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description			
3190.00						0025
	0.09	100	Ca		: w, st	0025-1L
3220.00						0026
		100	Ca		: w, st	0026-1L
3250.00						0027
	0.09	100	Ca		: w, st	0027-1L
3280.00						0028
	0.09	100	Ca		: w, st	0028-1L
3310.00						0029
	0.16	100	Ca		: w, lt or pi, st	0029-1L
3330.00						0031
		100	Ca		: w, lt gy w, lt or pi, st	0031-1L
3340.00						0030
	0.14	100	Ca		: w, lt gy w, lt or pi, st	0030-1L
3360.00						0032
		80	Ca		: w, lt gy w, lt or pi, st	0032-1L
		20	Ca		: gy red, cly	0032-2L



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Table 2 : Lithology description for well NOCS 2/11-9

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
3390.00						0033
			100	Ca : w, lt gy w, lt or pi, st		0033-1L
3420.00						0034
		0.19	100	Ca : w, lt gy w, lt or pi, st		0034-1L
3450.00						0035
			100	Ca : w, lt gy w, lt or pi, st		0035-1L
3480.00						0036
		0.18	100	Ca : w, lt gy w, lt or pi, st, hd tr Chert : w		0036-1L 0036-2L
3510.00						0061
			100	Ca : w, lt gy w, lt or pi, st, hd tr Chert : w		0061-1L 0061-2L
3540.00						0037
		0.11	100	Ca : w, lt gy w, lt or pi, st, hd		0037-1L
3570.00						0038
		0.11	80	Ca : w, lt gy w, lt or pi, st, hd		0038-1L
		0.63	10	Sh/Clst: ol gy, gn gy, drk gy		0038-2L
			10	Cont : prp		0038-4L
				tr Chert : w		0038-3L

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Table 2 : Lithology description for well NOCS 2/11-9

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int Cvd	TOC%	%	Lithology description				
3600.00						0039	
	0.14	100	Ca		: w, lt gy w, lt or pi, st, hd	0039-1L	
3630.00						0040	
		100	Ca		: w, lt gy w, lt or pi, st, hd	0040-1L	
3660.00						0041	
	0.24	100	Ca		: w, lt gy w, pl red, st, hd tr Sh/Clst: drk gy	0041-1L 0041-2L	
3690.00						0042	
		100	Ca		: w, lt gy w, pl red, st, hd tr Sh/Clst: drk gy	0042-1L 0042-2L	
3710.00					Shet Hidr Upper Cretaceous	0043	
	0.14	100	Ca		: w, lt gy w, pl red, st, hd	0043-1L	
3740.00						0044	
	0.11	90	Ca		: w, lt gy w, pl red, st, hd, glauc, ool	0044-1L	
		10	Sh/Clst:		gn gy, gy red, brn blk	0044-2L	
3770.00						0045	
		80	Ca		: w, lt gy w, pl red, st, hd, glauc, ool	0045-1L	
	0.61	20	Sh/Clst:		m gy, m drk gy to drk gy, brn blk, calc	0045-2L	

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Table 2 : Lithology description for well NOCS 2/11-9

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description			
3780.00						0046
		80	Ca	:	w, lt gy w, pl red, st, hd, glauc, ool	0046-1L
	0.75	20	Sh/Clst:	:	m gy, m drk gy to drk gy, brn blk, calc	0046-2L
3810.00						0047
	0.16	80	Ca	:	w, lt gy w, pl red, st, hd, glauc, ool	0047-1L
		20	Sh/Clst:	:	gy red, m brn, gn gy	0047-2L
3840.00						0048
		40	Sh/Clst:	:	gy red, m brn, gn gy, calc	0048-2L
		30	Ca	:	w, lt gy w, st, hd	0048-1L
	1.31	30	Sh/Clst:	:	m drk gy to drk gy, calc	0048-3L
3870.00						0049
		80	Ca	:	w, lt gy w, cly, st	0049-1L
		20	Sh/Clst:	:	gy red, m brn, gn gy, calc	0049-2L
		tr	Sh/Clst:	:	drk gy	0049-3L
3900.00						0050
	0.20	90	Ca	:	w, lt gy w, cly, st	0050-1L
		10	Sh/Clst:	:	gy red, m brn, gn gy, calc	0050-2L
		tr	Sh/Clst:	:	drk gy	0050-3L
3930.00						0051
		90	Ca	:	w, lt gy w, cly, st	0051-1L
	2.12	10	Sh/Clst:	:	drk gy to gy blk	0051-2L

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Table 2 : Lithology description for well NOCS 2/11-9

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4020.00						0052
	3.06	60	Sh/Clst:	m gy to drk gy, gy blk		0052-1L
		30	Sh/Clst:	gy red		0052-2L
		5	Ca	: w, lt gy w		0052-3L
		5	Cont	: prp		0052-4L
4080.00						0053
	0.49	70	Sh/Clst:	gy red to m brn, gn gy, m gy, s, glauc		0053-1L
		20	Cont	: prp		0053-3L
		10	Ca	: w, lt gy w		0053-2L
4110.00						0054
	0.22	70	Sh/Clst:	gy red to m brn, gn gy, m gy, s, glauc		0054-1L
		20	Cont	: prp		0054-3L
		10	Ca	: w, lt gy w		0054-2L
		tr	Ca	: blk		0054-4L
4140.00						0055
		40	Sh/Clst:	gy red to m brn, gn gy, m gy, s, glauc		0055-1L
	1.84	40	Sh/Clst:	brn blk		0055-4L
		15	Cont	: prp		0055-3L
		5	Ca	: w, lt gy w		0055-2L
4170.00						0056
		40	Sh/Clst:	gy red to m brn, gn gy, m gy, s, glauc, wx		0056-1L
	2.96	40	Sh/Clst:	brn blk		0056-3L
		20	Cont	: prp		0056-2L

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Table 2 : Lithology description for well NOCS 2/11-9

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4200.00						0057
	2.76			40 Sh/Clst: m brn, gn gy, slt, s		0057-2L
				25 Sh/Clst: brn blk, trbofgs		0057-1L
				10 Sh/Clst: m gy, ol gy, wx		0057-4L
	cvd			10 S/Sst : w, m brn, gn gy, carb, cly, glauc		0057-7L
				5 Ca : lt gy w		0057-3L
				5 Coal : blk		0057-5L
				5 Cont : prp		0057-6L
4230.00						0074
				50 Sh/Clst: gy red to dsk brn, gn gy, s		0074-1L
				10 S/Sst : w, red brn, gn gy, slt, cly		0074-2L
				10 Sh/Clst: m gy, ol gy, wx		0074-3L
				10 Sh/Clst: blk		0074-4L
				10 Cont		0074-6L
				10 Sh/Clst: brn blk, trbofgs		0074-7L
				tr Coal : blk		0074-5L
4260.00						0058
				70 Sh/Clst: gy red to dsk brn, gn gy, s, calc		0058-1L
				10 S/Sst : w, red brn, slt, cly		0058-2L
				10 Sh/Clst: m gy, ol gy, wx		0058-3L
	4.01			10 Sh/Clst: blk		0058-4L
				tr Coal : blk		0058-5L
4290.00						0075
				30 S/Sst : w, red brn, gn gy, slt, cly		0075-2L
				20 Sh/Clst: gy red to dsk brn, gn gy, s		0075-1L
				20 Sh/Clst: m gy, ol gy, wx		0075-3L
				20 Sh/Clst: brn blk, trbofgs		0075-4L
				10 Sh/Clst: blk, s		0075-5L
				tr Coal : blk		0075-6L

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Table 2 : Lithology description for well NOCS 2/11-9

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int Cvd	TOC%	%	Lithology description				
4320.00					trb	0059	
	0.92	45	Sh/Clst: ol gy to drk gy, trbofgs				0059-1L
	21.15	15	Coal : blk				0059-2L
		10	Sh/Clst: brn gy, wx				0059-3L
		10	Sh/Clst: blk				0059-4L
		10	Coal				0059-5L
		10	Cont : prp				0059-6L
4350.00						0076	
		70	Sh/Clst: gy red to dsk brn, gn gy, s, trbofgs				0076-1L
		10	S/Sst : w, red brn, gn gy, slt, cly				0076-2L
		10	Sh/Clst: m gy, ol gy, wx				0076-3L
		10	Sh/Clst: blk				0076-4L
		tr	Coal : blk				0076-5L
4410.00					trb	0060	
	0.83	60	Sh/Clst: ol gy to drk gy, dsk y brn, slt, lam, trbofgs				0060-1L
		20	Sh/Clst: brn gy, wx				0060-3L
		15	Coal : blk				0060-2L
		5	Cont : prp				0060-4L

Table 3 : Rock-Eval table for well NOCS 2/11-9

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
2150.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	1.80	3.47	1.64	2.12	0.71	489	231	5.3	0.34	344	0001-1L
2210.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	1.88	4.17	1.79	2.33	0.69	604	259	6.1	0.31	346	0002-4L
2270.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	2.30	4.74	1.76	2.69	0.86	551	205	7.0	0.33	348	0005-1L
2330.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	2.49	4.16	1.76	2.36	0.94	443	187	6.7	0.37	341	0007-1L
2390.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	1.42	4.73	1.62	2.92	0.91	520	178	6.2	0.23	351	0008-1L
2450.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	2.36	5.45	2.20	2.48	1.01	540	218	7.8	0.30	345	0009-1L
2510.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	1.51	4.35	1.64	2.65	0.88	494	186	5.9	0.26	346	0010-1L
2520.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	2.03	5.32	2.14	2.49	0.81	657	264	7.4	0.28	350	0011-1L
2630.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	2.08	4.71	1.82	2.59	0.89	529	204	6.8	0.31	346	0012-1L
2690.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	2.06	5.44	1.95	2.79	0.83	655	235	7.5	0.27	349	0013-1L

Table 3 : Rock-Eval table for well NOCS 2/11-9

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
2750.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	1.88	4.66	1.79	2.60	0.92	507	195	6.5	0.29	343	0014-1L
2810.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy, m drk gy	0.50	2.62	1.32	1.98	0.82	320	161	3.1	0.16	355	0015-1L
2870.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy, m drk gy, brn gy	6.81	9.28	1.31	7.08	1.89	491	69	16.1	0.42	427	0016-1L
2930.00	cut	Sh/Clst: brn gy to dsk y brn	1.03	10.79	1.12	9.63	2.89	373	39	11.8	0.09	430	0017-2L
2960.00	com	bulk	0.86	3.90	1.31	2.98	0.98	398	134	4.8	0.18	425	0067-0B
2990.00	cut	Sh/Clst: m drk gy, m gy to drk gy	1.45	4.74	1.34	3.54	1.43	331	94	6.2	0.23	425	0019-1L
3020.00	cut	Sh/Clst: lt bl gy, lt gn gy, gy red	0.13	0.63	1.39	0.45	0.37	170	376	0.8	0.17	361	0020-1L
3050.00	cut	Sh/Clst: lt bl gy, lt gn gy	0.10	0.46	1.07	0.43	0.25	184	428	0.6	0.18	357	0021-1L
3060.00	cut	Ca : w	0.07	0.05	0.85	0.06	0.09	56	944	0.1	0.58	339	0022-1L
3100.00	cut	Ca : w	0.44	0.42	0.74	0.57	0.14	300	529	0.9	0.51	422	0023-1L
3130.00	cut	Ca : w	0.06	0.05	0.82	0.06	0.10	50	820	0.1	0.55	396	0024-1L
3190.00	cut	Ca : w	0.09	0.08	0.86	0.09	0.09	89	956	0.2	0.53	408	0025-1L
3250.00	cut	Ca : w	0.08	0.07	0.76	0.09	0.09	78	844	0.2	0.53	327	0027-1L



Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
3280.00	cut	Ca : w	0.05	0.09	0.82	0.11	0.09	100	911	0.1	0.36	414	0028-1L
3310.00	cut	Ca : w, lt or pi	0.21	0.28	0.82	0.34	0.16	175	513	0.5	0.43	397	0029-1L
3340.00	cut	Ca : w, lt gy w, lt or pi	0.10	0.17	0.96	0.18	0.14	121	686	0.3	0.37	396	0030-1L
3420.00	cut	Ca : w, lt gy w, lt or pi	0.19	0.28	0.85	0.33	0.19	147	447	0.5	0.40	416	0034-1L
3480.00	cut	Ca : w, lt gy w, lt or pi	0.46	0.27	0.60	0.45	0.18	150	333	0.7	0.63	414	0036-1L
3540.00	cut	Ca : w, lt gy w, lt or pi	0.11	0.20	1.80	0.11	0.11	182	1636	0.3	0.35	432	0037-1L
3570.00	cut	Ca : w, lt gy w, lt or pi	0.07	0.07	0.89	0.08	0.11	64	809	0.1	0.50	427	0038-1L
3570.00	cut	Sh/Clst: ol gy, gn gy, drk gy	0.18	0.76	0.76	1.00	0.63	121	121	0.9	0.19	430	0038-2L
3600.00	cut	Ca : w, lt gy w, lt or pi	0.11	0.09	0.87	0.10	0.14	64	621	0.2	0.55	433	0039-1L
3660.00	cut	Ca : w, lt gy w, pl red	0.11	0.36	1.04	0.35	0.24	150	433	0.5	0.23	391	0041-1L
3710.00	cut	Ca : w, lt gy w, pl red	0.04	0.04	0.51	0.08	0.14	29	364	0.1	0.50	345	0043-1L
3740.00	cut	Ca : w, lt gy w, pl red	0.05	0.03	0.38	0.08	0.11	27	345	0.1	0.63	-	0044-1L
3770.00	cut	Sh/Clst: m gy, m drk gy to drk gy, brn blk	0.28	0.40	0.66	0.61	0.61	66	108	0.7	0.41	348	0045-2L
3780.00	cut	Sh/Clst: m gy, m drk gy to drk gy, brn blk	0.36	0.75	1.57	0.48	0.75	100	209	1.1	0.32	430	0046-2L

Table 3 : Rock-Eval table for well NOCS 2/11-9

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
3810.00	cut	Ca : w, lt gy w, pl red	0.04	0.02	0.77	0.03	0.16	13	481	0.1	0.67	399	0047-1L
3840.00	cut	Sh/Clst: m drk gy to drk gy	0.12	0.76	1.22	0.62	1.31	58	93	0.9	0.14	437	0048-3L
3900.00	cut	Ca : w, lt gy w	0.09	0.04	1.41	0.03	0.20	20	705	0.1	0.69	441	0050-1L
3930.00	cut	Sh/Clst: drk gy to gy blk	0.19	2.18	0.48	4.54	2.12	103	23	2.4	0.08	442	0051-2L
4020.00	cut	Sh/Clst: m gy to drk gy, gy blk	0.26	4.04	0.38	10.63	3.06	132	12	4.3	0.06	444	0052-1L
4080.00	cut	Sh/Clst: gy red to m brn, gn gy, m gy	0.08	0.37	0.85	0.44	0.49	76	173	0.5	0.18	435	0053-1L
4110.00	cut	Sh/Clst: gy red to m brn, gn gy, m gy	0.09	0.24	0.40	0.60	0.22	109	182	0.3	0.27	411	0054-1L
4140.00	cut	Sh/Clst: brn blk	0.25	0.65	0.43	1.51	1.84	35	23	0.9	0.28	435	0055-4L
4170.00	cut	Sh/Clst: brn blk	0.39	2.30	0.34	6.76	2.96	78	11	2.7	0.14	445	0056-3L
4200.00	cut	Sh/Clst: brn blk	0.43	1.44	0.33	4.36	2.76	52	12	1.9	0.23	443	0057-1L
4260.00	cut	Sh/Clst: blk	0.46	5.79	0.28	20.68	4.01	144	7	6.3	0.07	442	0058-4L
4320.00	cut	Sh/Clst: ol gy to drk gy	0.07	0.65	0.15	4.33	0.92	71	16	0.7	0.10	442	0059-1L
4320.00	cut	Coal : blk	3.66	46.12	0.50	92.24	21.15	218	2	49.8	0.07	446	0059-2L
4410.00	cut	Sh/Clst: ol gy to drk gy, dsk y brn	0.15	0.18	0.19	0.95	0.83	22	23	0.3	0.45	398	0060-1L

Table 3b: Values for Rock-Eval standard BLACK VEN MARL

Well NOCS 2/11-9

TMax	S1	S2	S3
421	0.52	19.16	1.94
420	0.48	19.19	1.77
419	0.43	18.62	1.91

Table 4 : Pyrolysis GC Data (S2 peak) as Percentage of Total Area for Well NOCS 2/11-9

Depth unit of measure: m

Depth	Typ	Lithology	C1	C2-C5	C6-C14	C15+	S2 from Rock-Eval	Sample
2150.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	8.43	47.55	39.23	4.79	3.47	0001-1L
3280.00	cut	Ca : w	26.03	16.80	49.88	7.29	0.09	0028-1L
3480.00	cut	Ca : w, lt gy w, lt or pi	13.41	14.00	66.59	6.00	0.27	0036-1L
4170.00	cut	Sh/Clst: brn blk	27.53	14.34	37.11	21.03	2.30	0056-3L

Depth unit of measure: m

Depth	Typ	Lithology	Rock Extracted (g)	EOM (mg)	Sat (mg)	Aro (mg)	Asph (mg)	NSO (mg)	HC (mg)	Non-HC (mg)	TOC(e) (%)	Sample
2330.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	10.3	15.5	0.3	1.6	1.4	12.2	1.9	13.6	0.94	0007-1L
2520.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	11.7	49.4	1.3	1.5	1.9	44.7	2.8	46.6	0.81	0011-1L
2930.00	cut	Sh/Clst: brn gy to dsk y brn	7.8	18.7	2.3	4.5	6.8	5.1	6.8	11.9	2.89	0017-2L
3100.00	cut	Ca : w	10.5	8.4	3.5	1.5	1.1	2.4	5.0	3.5	0.14	0023-1L
3310.00	cut	Ca : w, lt or pi	11.2	2.1	0.2	0.9	0.3	0.7	1.0	1.0	0.16	0029-1L
4020.00	cut	Sh/Clst: m gy to drk gy, gy blk	10.3	9.4	1.2	2.3	4.4	1.5	3.5	5.9	3.06	0052-1L
4140.00	cut	Sh/Clst: brn blk	7.4	6.1	1.4	1.8	1.7	1.2	3.2	2.9	1.84	0055-4L
4170.00	cut	Sh/Clst: brn blk	6.4	3.5	0.3	1.0	1.2	0.9	1.4	2.1	2.96	0056-3L
4260.00	cut	Sh/Clst: blk	5.0	12.2	0.8	2.7	6.8	1.9	3.5	8.7	4.01	0058-4L
4320.00	cut	Coal : blk	3.7	49.9	2.4	6.6	39.1	1.8	9.0	40.9	21.10	0059-2L

Schlumberger

Geco-Prakla

GEOLAB NOR

Table 5 b: Concentration of EOM and Chromatographic Fraction (wt ppm rock) for well NOCS 2/11-9

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
2330.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	1498	30	156	135	1175	187	1310	0007-1L
2520.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	4229	113	128	160	3826	242	3987	0011-1L
2930.00	cut	Sh/Clst: brn gy to dsk y brn	2404	290	580	871	661	871	1532	0017-2L
3100.00	cut	Ca : w	805	328	142	104	228	471	333	0023-1L
3310.00	cut	Ca : w, lt or pi	186	13	80	26	66	93	93	0029-1L
4020.00	cut	Sh/Clst: m gy to drk gy, gy blk	906	116	218	426	145	334	572	0052-1L
4140.00	cut	Sh/Clst: brn blk	817	182	243	229	162	425	391	0055-4L
4170.00	cut	Sh/Clst: brn blk	542	47	165	188	141	212	330	0056-3L
4260.00	cut	Sh/Clst: blk	2433	159	538	1353	381	697	1735	0058-4L
4320.00	cut	Coal : blk	13408	647	1771	10513	475	2419	10989	0059-2L

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
2330.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	159.37	3.29	16.67	14.40	125.01	19.96	139.41	0007-1L
2520.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	522.15	14.06	15.85	19.87	472.37	29.91	492.24	0011-1L
2930.00	cut	Sh/Clst: brn gy to dsk y brn	83.19	10.06	20.08	30.15	22.89	30.15	53.04	0017-2L
3100.00	cut	Ca : w	575.38	234.92	102.14	74.90	163.42	337.06	238.32	0023-1L
3310.00	cut	Ca : w, lt or pi	116.87	8.35	50.09	16.70	41.74	58.44	58.44	0029-1L
4020.00	cut	Sh/Clst: m gy to drk gy, gy blk	29.64	3.80	7.13	13.95	4.75	10.94	18.70	0052-1L
4140.00	cut	Sh/Clst: brn blk	44.43	9.91	13.22	12.49	8.81	23.13	21.30	0055-4L
4170.00	cut	Sh/Clst: brn blk	18.33	1.59	5.58	6.37	4.78	7.17	11.16	0056-3L
4260.00	cut	Sh/Clst: blk	60.68	3.97	13.44	33.76	9.52	17.40	43.28	0058-4L
4320.00	cut	Coal : blk	63.55	3.07	8.40	49.83	2.26	11.47	52.08	0059-2L

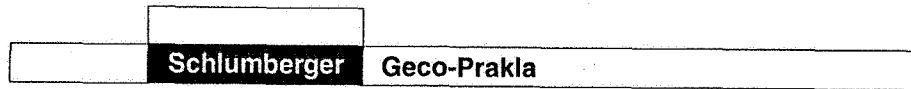


Table 5 d: Composition of material extracted from the rock (%) for well NOCS 2/11-9

Depth unit of measure: m

Depth	Typ	Lithology	Sat	Aro	Asph	NSO	HC	Non-HC	Sat	HC	Sample
			EOM	EOM	EOM	EOM	EOM	EOM	EOM	Aro	
2330.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	2.07	10.46	9.04	78.44	12.52	87.48	19.75	14.32	0007-1L
2520.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	2.69	3.04	3.81	90.47	5.73	94.27	88.67	6.08	0011-1L
2930.00	cut	Sh/Clst: brn gy to dsk y brn	12.10	24.14	36.24	27.52	36.24	63.76	50.11	56.84	0017-2L
3100.00	cut	Ca : w	40.83	17.75	13.02	28.40	58.58	41.42	230.00	141.43	0023-1L
3310.00	cut	Ca : w, lt or pi	7.14	42.86	14.29	35.71	50.00	50.00	16.67	100.00	0029-1L
4020.00	cut	Sh/Clst: m gy to drk gy, gy blk	12.83	24.06	47.06	16.04	36.90	63.10	53.33	58.47	0052-1L
4140.00	cut	Sh/Clst: brn blk	22.31	29.75	28.10	19.83	52.07	47.93	75.00	108.62	0055-4L
4170.00	cut	Sh/Clst: brn blk	8.70	30.43	34.78	26.09	39.13	60.87	28.57	64.29	0056-3L
4260.00	cut	Sh/Clst: blk	6.54	22.14	55.64	15.69	28.68	71.32	29.52	40.21	0058-4L
4320.00	cut	Coal : blk	4.83	13.21	78.41	3.55	18.04	81.96	36.57	22.02	0059-2L



Table 6: Saturated Hydrocarbon Ratios for well NOCS 2/11-9

Depth unit of measure: m

Depth	Typ	Lithology	Pristane	Pristane	Pristane/nC17	Phytane	CPI1	nC17	Sample
			nC17	Phytane	Phytane/nC18	nC18		nC17+nC27	
2330.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	4.69	4.64	4.57	1.03	1.99	0.32	0007-1L
2520.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	3.16	5.08	4.30	0.73	2.07	0.40	0011-1L
2930.00	cut	Sh/Clst: brn gy to dsk y brn	6.01	6.15	5.30	1.13	1.38	0.70	0017-2L
3100.00	cut	Ca : w	0.57	0.97	1.30	0.43	1.08	0.67	0023-1L
3310.00	cut	Ca : w, lt or pi	0.48	1.30	1.10	0.43	1.02	0.87	0029-1L
4020.00	cut	Sh/Clst: m gy to drk gy, gy blk	0.78	3.31	3.26	0.24	1.21	0.70	0052-1L
4140.00	cut	Sh/Clst: brn blk	0.75	2.39	2.18	0.34	1.15	0.72	0055-4L
4170.00	cut	Sh/Clst: brn blk	0.66	2.24	2.06	0.32	1.14	0.66	0056-3L
4260.00	cut	Sh/Clst: blk	0.77	3.31	3.41	0.23	1.17	0.64	0058-4L
4320.00	cut	Coal : blk	0.73	3.92	3.89	0.19	1.16	0.76	0059-2L

Table 7a: Aromatic Hydrocarbon Ratios for well NOCS 2/11-9

Depth unit of measure: m

Depth	Typ	Lithology	MNR	DMNR	BPhR	2/1MP	MPI1	MPI2	Rc	DBT/P	4/1MDBT (3+2) /1MDBT	Sample	
2330.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	0.74	1.02	0.15	-	-	-	-	-	-	0007-1L	
2520.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	0.64	0.74	0.12	-	-	-	-	-	-	0011-1L	
2930.00	cut	Sh/Clst: brn gy to dsk y brn	1.43	2.54	0.07	0.85	0.61	0.61	0.77	-	-	0017-2L	
3100.00	cut	Ca : w	0.90	0.95	-	0.66	0.65	0.69	0.79	-	1.47	0023-1L	
3310.00	cut	Ca : w, lt or pi	-	-	-	-	-	-	-	-	-	0029-1L	
4020.00	cut	Sh/Clst: m gy to drk gy, gy blk	1.41	3.35	0.29	1.09	0.73	0.77	0.84	0.11	3.36	1.83	0052-1L
4140.00	cut	Sh/Clst: brn blk	1.54	3.61	0.51	1.28	0.80	0.82	0.88	0.10	3.28	1.92	0055-4L
4170.00	cut	Sh/Clst: brn blk	0.86	3.18	0.26	1.31	0.80	0.85	0.88	0.09	2.45	1.39	0056-3L
4260.00	cut	Sh/Clst: blk	1.16	2.99	0.26	1.14	0.80	0.84	0.88	0.17	6.60	3.87	0058-4L
4320.00	cut	Coal : blk	1.38	3.05	0.28	1.17	0.82	0.90	0.89	0.17	3.77	2.32	0059-2L

Depth unit of measure: m

Depth	Typ	Lithology	F1	F2	Sample
2330.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	-	-	0007-1L
2520.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	-	-	0011-1L
2930.00	cut	Sh/Clst: brn gy to dsk y brn	0.44	0.22	0017-2L
3100.00	cut	Ca : w	0.38	0.20	0023-1L
3310.00	cut	Ca : w, lt or pi	-	-	0029-1L
4020.00	cut	Sh/Clst: m gy to drk gy, gy blk	0.50	0.26	0052-1L
4140.00	cut	Sh/Clst: brn blk	0.54	0.28	0055-4L
4170.00	cut	Sh/Clst: brn blk	0.54	0.29	0056-3L
4260.00	cut	Sh/Clst: blk	0.50	0.27	0058-4L
4320.00	cut	Coal : blk	0.52	0.28	0059-2L

Table 8 : Thermal Maturity Data for well NOCS 2/11-9

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Depth unit of measure: m

Depth	Typ	Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation	Spore Fluorescence Colour	SCI	T <sub>max</sub> (°C)	Sample
1250.00	cut	Sh/Clst: brn gy, lt ol gy	0.43	3	0.02	-	-	-	0062-1L
1500.00	cut	Sh/Clst: lt gn gy	0.70	3	0.09	-	-	-	0063-1L
1800.00	cut	Sh/Clst: gy brn, dsk brn, dsk y brn	0.31	16	0.05	-	-	-	0064-1L
1900.00	cut	Sh/Clst: brn gy	0.30	15	0.04	-	-	-	0065-1L
2000.00	cut	Sh/Clst: lt brn gy, lt gn gy	0.31	7	0.04	-	-	-	0066-1L
2150.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	0.24	4	0.03	-	-	344	0001-1L
2210.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	NDP	-	-	-	-	346	0002-4L
2270.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	-	-	-	-	5.5	348	0005-1L
2330.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	0.26	4	0.04	-	-	341	0007-1L
2390.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	-	-	-	-	5.0-6.0	351	0008-1L
2450.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	0.27	13	0.04	-	-	345	0009-1L

Table 8 : Thermal Maturity Data for well NOCS 2/11-9

Depth unit of measure: m

Depth	Typ Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation	Spore Fluorescence Colour	SCI	T <sub>max</sub> (°C)	Sample
2520.00	cut Sh/Clst: lt ol gy to lt gn gy, m lt gy	0.38	10	0.04	-	-	350	0011-1L
2690.00	cut Sh/Clst: lt ol gy to lt gn gy, m lt gy	0.40	10	0.06	-	-	349	0013-1L
2810.00	cut Sh/Clst: lt ol gy to lt gn gy, m lt gy, m drk gy	0.40	11	0.04	-	5.5-6.0	355	0015-1L
2870.00	cut Sh/Clst: lt ol gy to lt gn gy, m lt gy, m drk gy, brn gy	-	-	-	-	6.0	427	0016-1L
2930.00	cut Sh/Clst: lt ol gy to lt gn gy, m lt gy, m drk gy, brn gy	0.38	9	0.04	-	6.0-6.5	-	0017-1L
2960.00	com bulk	NDP	-	-	-	-	425	0067-0B
2990.00	cut Sh/Clst: m drk gy, m gy to drk gy	0.57	3	0.02	-	6.5	425	0019-1L
3020.00	cut Sh/Clst: lt bl gy, lt gn gy, gy red	NDP	-	-	-	-	361	0020-1L
3050.00	cut Sh/Clst: lt bl gy, lt gn gy	NDP	-	-	-	-	357	0021-1L
3280.00	cut Ca : w	NDP	-	-	-	-	414	0028-1L
3390.00	cut Ca : w, lt gy w, lt or pi	NDP	-	-	-	-	-	0033-1L

Table 8 : Thermal Maturity Data for well NOCS 2/11-9

Depth unit of measure: m

Depth	Typ Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation	Spore Fluorescence Colour	SCI	T <sub>max</sub> (°C)	Sample
3570.00	cut bulk	NDP	-	-	-	-	-	0038-0B
3570.00	cut Sh/Clst: ol gy, gn gy, drk gy	-	-	-	-	7.0-7.5(?)	430	0038-2L
3660.00	cut bulk	-	-	-	-	7.5(??)	-	0041-0B
3740.00	cut bulk	NDP	-	-	-	-	-	0044-0B
3740.00	cut Sh/Clst: gn gy, gy red, brn blk	-	-	-	-	7.5(??)	-	0044-2L
3770.00	cut Sh/Clst: m gy, m drk gy to drk gy, brn blk	0.62	3	0.01	-	NDP/8.0(??)	348	0045-2L
3780.00	cut Sh/Clst: m gy, m drk gy to drk gy, brn blk	1.18	5	0.05	-	7.5-8.0	430	0046-2L
3810.00	cut Sh/Clst: gy red, m brn, gn gy	NDP	-	-	-	-	-	0047-2L
3840.00	cut Sh/Clst: m drk gy to drk gy	0.99	6	0.05	-	7.5	437	0048-3L
3930.00	cut Sh/Clst: drk gy to gy blk	1.00	8	0.06	-	7.0-7.5	442	0051-2L
4020.00	cut Sh/Clst: m gy to drk gy, gy blk	0.88	2	0.02	-	8.5	444	0052-1L
4080.00	cut Sh/Clst: gy red to m brn, gn gy, m gy	NDP	-	-	-	-	435	0053-1L

Table 8 : Thermal Maturity Data for well NOCS 2/11-9

Depth unit of measure: m

Depth	Typ Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation	Spore Fluorescence Colour	SCI	T <sub>max</sub> (°C)	Sample
4110.00	cut Sh/Clst: gy red to m brn, gn gy, m gy	NDP	-	-	-	-	411	0054-1L
4140.00	cut Sh/Clst: brn blk	0.68	7	0.06	-	8.5-9.0(?)	435	0055-4L
4170.00	cut Sh/Clst: brn blk	0.71	5	0.03	-	8.0-8.5	445	0056-3L
4200.00	cut Sh/Clst: m brn, gn gy	-	-	-	-	8.5-9.0(??)	-	0057-2L
4200.00	cut Coal : blk	0.81	12	0.04	-	-	-	0057-5L
4230.00	com bulk	0.76	19	0.06	-	-	-	0077-0B
4260.00	cut Sh/Clst: m gy, ol gy	-	-	-	-	8.5-9.0(??)	-	0058-3L
4260.00	cut Sh/Clst: blk	0.86	6	0.04	-	-	442	0058-4L
4290.00	com bulk	0.76	18	0.04	-	-	-	0078-0B
4320.00	cut Sh/Clst: ol gy to drk gy	-	-	-	-	7.5-8.0(??)	442	0059-1L
4320.00	cut Coal : blk	0.83	12	0.05	-	-	446	0059-2L
4350.00	com bulk	0.88	12	0.07	-	-	-	0079-0B
4410.00	cut Coal : blk	0.94	17	0.08	-	-	-	0060-2L

Table 8 : Thermal Maturity Data for well NOCS 2/11-9

Depth unit of measure: m

Depth	Typ	Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation	Spore Fluorescence Colour	SCI	T <sub>max</sub> (°C)	Sample
4410.00	com	bulk	-	-	-	-	8.5(?)	-	0068-0B



Depth unit of measure: m

Depth	Typ	Lithology	L	A	L	S	C	D	I	S	I	M	S	V	C	V	A	Sample
			P	m	i	p	u	R	A	N	F	n	i	c	I	T	e	
			%	r	D	P	i	s	R	u	F	D	r	R	l	i	D	
				e	o	l	l	n	e	s	t	e	r	%	n	n	e	V
				t	l	l	l	e	l	t	u	r	o				V	
2270.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	90	**	**	*		*		5		*		5		*		0005-1L
2390.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy	80	**	**	*		*		5		*		15	*	**		0008-1L
2810.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy, m drk gy	90	**	**	*				5		*		5		*		0015-1L
2870.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy, m drk gy, brn gy	95	**	**	*			TR			*		5		*		0016-1L
2930.00	cut	Sh/Clst: lt ol gy to lt gn gy, m lt gy, m drk gy, brn gy	75	**	*	*		*		TR		*		25		*		0017-1L
2990.00	cut	Sh/Clst: m drk gy, m gy to drk gy	85	*	*	**		*		TR		*		15	*	*		0019-1L
3570.00	cut	Sh/Clst: ol gy, gn gy, drk gy	80	*	**	*		* *		20		*		TR		*		0038-2L
3660.00	cut	bulk	95	*	**	*		?		5		*		TR		*		0041-0B
3740.00	cut	Sh/Clst: gn gy, gy red, brn blk	85	*	**	*				15		*		TR	*	**		0044-2L
3770.00	cut	Sh/Clst: m gy, m drk gy to drk gy, brn blk	90	**	**	*		?		10	*	*	**	TR		*		0045-2L
3780.00	cut	Sh/Clst: m gy, m drk gy to drk gy, brn blk	80	**	**	*		?		15	*	*	**	5	*	*		0046-2L
3840.00	cut	Sh/Clst: m drk gy to drk gy	65	**	*	*		* *		20	*	*	*	15	*	*		0048-3L

Table 9 : Visual Kerogen Composition Data for well NOCS 2/11-9

Depth unit of measure: m

Depth	Typ	Lithology	L	A	L	S	C	D			I	S	I	M	S	V	C	V	A	Sample							
			I	m	i	p	u	R	A	B	N	F	n	c	B	I	T	o	i		m						
			P	o	p	/	t	e	l	n	c	i	r	t	E	u	m	d	r	e	t	R	l	l	D	r	t
			T	r	e	o	c	i	a	f	i	t	L	T	i	s	t	n	o	I	%	n	n	t	V	V	
			%	L	t	l	l	n	e	l	t	L	%	n	s	t	n	o	I	%	n	n	t	V	V		
3930.00	cut	Sh/Clst: drk gy to gy blk	40	*	*	**	*	*					20	**	*					40	**	*				0051-2L	
4020.00	cut	Sh/Clst: m gy to drk gy, gy blk	50	**	*	**	*	*					20	**	*					30	**	*				0052-1L	
4140.00	cut	Sh/Clst: brn blk	90	**	?	*		*					5	*	**					5			*			0055-4L	
4170.00	cut	Sh/Clst: brn blk	55	**	?	*		*					15	*	*					30	**		*			0056-3L	
4200.00	cut	Sh/Clst: m brn, gn gy	75	**	?	*		*					10	*	*					15	**		*			0057-2L	
4260.00	cut	Sh/Clst: m gy, ol gy	45	**	?	*		*					30	**	*					25	**	*	*			0058-3L	
4320.00	cut	Sh/Clst: ol gy to drk gy	40	*	*	**	*						25	*	**	*				35	**	*				0059-1L	
4410.00	com	bulk	100	**	?	*		?					TR		*					TR	*		**			0068-0B	

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Saturated	Aromatic	NSO	Asphaltenes	Kerogen	Sample
2330.00	cut	Sh/Clst	-27.63	-28.75	-27.75	-28.26	-27.62	-	0007-1
2930.00	cut	Sh/Clst	-27.27	-28.62	-27.84	-27.31	-26.97	-	0017-2
3100.00	cut	Ca	-	-29.04	-28.51	-28.37	-28.43	-	0023-1
4140.00	cut	Sh/Clst	-	-28.29	-24.80	-25.10	-24.19	-	0055-4
4320.00	cut	Coal	-23.21	-26.92	-23.57	-23.51	-23.19	-	0059-2

Table 10B: Tabulation of cv values from carbon isotope data for well NOCS 2/11-9

Depth unit of measure: m

<u>Depth</u>	<u>Typ</u>	<u>Lithology</u>	<u>Saturated</u>	<u>Aromatic</u>	<u>cv value</u>	<u>Sample</u>
2330.00	cut	Sh/Clst	-28.75	-27.75	-0.52	0007-1
2930.00	cut	Sh/Clst	-28.62	-27.84	-1.05	0017-2
3100.00	cut	Ca	-29.04	-28.51	-1.47	0023-1
4140.00	cut	Sh/Clst	-28.29	-24.80	4.87	0055-4
4320.00	cut	Coal	-26.92	-23.57	4.13	0059-2

Depth unit of measure: m

Depth	Lithology	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9	Rat.10	Rat.11	Rat.12	Rat.13	Rat.14	Sample
2330.00	Sh/Clst	5.41	0.84	0.22	0.67	0.40	-	0.65	0.97	0.39	0.09	0.68	0.45	0.60	19.83	0007-1
2930.00	Sh/Clst	5.04	0.83	0.23	0.90	0.47	0.06	1.71	1.91	0.63	0.02	0.74	0.47	0.33	40.59	0017-2
3100.00	Ca	0.96	0.49	0.12	0.57	0.36	0.05	0.12	0.20	0.10	0.04	0.90	0.37	0.12	60.27	0023-1
4140.00	Sh/Clst	7.19	0.88	0.25	0.95	0.49	0.06	0.03	0.03	0.03	0.17	0.81	0.46	0.18	59.92	0055-4
4320.00	Coal	16.15	0.94	0.25	0.85	0.46	0.09	0.05	0.06	0.05	0.01	0.86	0.44	0.13	59.38	0059-2



## List of Triterpane Distribution Ratios

Ratio 1:  $27Tm / 27Ts$

Ratio 2:  $27Tm / 27Tm+27Ts$

Ratio 3:  $27Tm / 27Tm+30a\beta+30\beta a$

Ratio 4:  $29a\beta / 30a\beta$

Ratio 5:  $29a\beta / 29a\beta+30a\beta$

Ratio 6:  $30d / 30a\beta$

Ratio 7:  $28a\beta / 30a\beta$

Ratio 8:  $28a\beta / 29a\beta$

Ratio 9:  $28a\beta / 28a\beta+30a\beta$

Ratio 10:  $24/3 / 30a\beta$

Ratio 11:  $30a\beta / 30a\beta+30\beta a$

Ratio 12:  $29a\beta+29\beta a / 29a\beta+29\beta a+30a\beta+30\beta a$

Ratio 13:  $29\beta a+30\beta a / 29a\beta+30a\beta$

Ratio 14:  $32a\beta S / 32a\beta S+32a\beta R (\%)$

Table 11B: Variation in Sterane Distribution (peak height) SIR for Well NOCS 2/11-9

Depth unit of measure: m

<u>Depth</u>	<u>Lithology</u>	<u>Ratio1</u>	<u>Ratio2</u>	<u>Ratio3</u>	<u>Ratio4</u>	<u>Ratio5</u>	<u>Ratio6</u>	<u>Ratio7</u>	<u>Ratio8</u>	<u>Ratio9</u>	<u>Ratio10</u>	<u>Sample</u>
2330.00	Sh/Clst	0.18	1.07	60.50	0.41	0.99	0.25	0.19	0.43	0.01	0.77	0007-1
2930.00	Sh/Clst	0.53	13.75	68.67	1.45	0.89	0.12	0.10	0.52	0.16	1.27	0017-2
3100.00	Ca	0.45	31.29	59.44	1.01	0.70	0.24	0.17	0.42	0.46	1.07	0023-1
4140.00	Sh/Clst	0.80	34.69	63.85	1.35	0.72	0.63	0.52	0.47	0.53	1.35	0055-4
4320.00	Coal	0.61	25.11	60.98	0.38	0.76	0.15	0.11	0.44	0.34	1.04	0059-2



List of Sterane Distribution Ratios

Ratio 1:  $27d\beta S / 27d\beta S + 27aaR$

Ratio 2:  $29aaS / 29aaS + 29aaR$  (%)

Ratio 3:  $2 * (29\beta\beta R + 29\beta\beta S) / (29aaS + 29aaR + 2 * (29\beta\beta R + 29\beta\beta S))$  (%)

Ratio 4:  $27d\beta S + 27d\beta R + 27daS + 27daR / 29d\beta S + 29d\beta R + 29daS + 29daR$

Ratio 5:  $29\beta\beta R + 29\beta\beta S / 29\beta\beta R + 29\beta\beta S + 29aaS$

Ratio 6:  $21a + 22a / 21a + 22a + 29aaS + 29\beta\beta R + 29\beta\beta S + 29aaR$

Ratio 7:  $21a + 22a / 21a + 22a + 28daR + 28aaS + 29daR + 29aaS + 29\beta\beta R + 29\beta\beta S + 29aaR$

Ratio 8:  $29\beta\beta R + 29\beta\beta S / 29aaS + 29\beta\beta R + 29\beta\beta S + 29aaR$

Ratio 9:  $29aaS / 29aaR$

Ratio 10:  $29\beta\beta R + 29\beta\beta S / 29aaR$

Schlumberger

Geco-Prakla

GEOLAB NOR



Depth unit of measure: m

<u>Depth</u>	<u>Lithology</u>	<u>Ratio1</u>	<u>Ratio2</u>	<u>Ratio3</u>	<u>Ratio4</u>	<u>Ratio5</u>	<u>Sample</u>
2330.00	Sh/Clst	0.22	0.18	0.08	0.08	0.13	0007-1
2930.00	Sh/Clst	0.39	0.27	0.10	0.13	0.14	0017-2
3100.00	Ca	0.44	0.41	0.18	0.19	0.23	0023-1
4140.00	Sh/Clst	0.73	0.63	0.38	0.44	0.51	0055-4
4320.00	Coal	-	0.95	0.68	-	-	0059-2

Ratio1:  $a1 / a1 + g1$

Ratio2:  $b1 / b1 + g1$

Ratio3:  $a1 + b1 / a1 + b1 + c1 + d1 + e1 + f1 + g1$

Ratio4:  $a1 / a1 + e1 + f1 + g1$

Ratio5:  $a1 / a1 + d1$

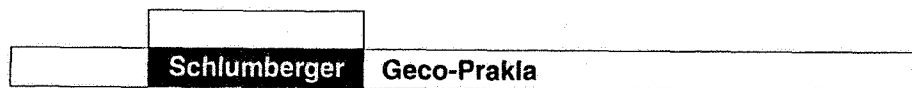


Table 11D: Variation in Monoaromatic Sterane Distribution (peak height) for Well NOCS 2/11-9

Depth unit of measure: m

<u>Depth</u>	<u>Lithology</u>	<u>Ratio1</u>	<u>Ratio2</u>	<u>Ratio3</u>	<u>Ratio4</u>	<u>Sample</u>
2330.00	Sh/Clst	0.09	0.05	0.04	0.03	0007-1
2930.00	Sh/Clst	0.12	0.06	0.07	0.06	0017-2
3100.00	Ca	0.36	0.22	0.23	0.17	0023-1
4140.00	Sh/Clst	0.35	0.30	0.23	0.20	0055-4
4320.00	Coal	0.32	0.33	0.20	0.22	0059-2

Ratio1: A1 / A1 + E1  
 Ratio2: B1 / B1 + E1

Ratio3: A1 / A1 + E1 + G1  
 Ratio4: A1+B1 / A1+B1+C1+D1+E1+F1+G1+H1+I1



Depth unit of measure: m

<u>Depth</u>	<u>Lithology</u>	<u>Ratio1</u>	<u>Ratio2</u>	<u>Sample</u>
2330.00	Sh/Clst	0.84	0.23	0007-1
2930.00	Sh/Clst	0.64	0.61	0017-2
3100.00	Ca	0.30	0.84	0023-1
4140.00	Sh/Clst	0.17	0.93	0055-4
4320.00	Coal	0.48	0.70	0059-2

Ratio1:  $\frac{C1+D1+E1+F1+G1+H1+I1}{C1+D1+E1+F1+G1+H1+I1 + c1+d1+e1+f1+g1}$

Ratio2:  $g1 / g1 + I1$



Table 11F: Raw triterpane data (peak height) m/z 191 SIR for Well NOCS 2/11-9

Depth unit of measure: m

Depth	Lithology	23/3	24/3	25/3	24/4	26/3	27Ts	27Tm	28aß	25nor30aß	Sample
		29aß	29Ts	30d	29ßa	30O	30aß	30ßa	30G	31aßS	
		31aßR	32aßS	32aßR	33aßS	33aßR	34aßS	34aßR	35aßS	35aßR	
2330.00	Sh/Clst	910430.8 3279553.0 4978580.0	447042.6 676747.5 212540.8	220398.6 0.0 859075.7	238320.1 2554565.0 0.0	73496.0 0.0 283412.9	371138.6 4870532.0 19906.6	2007137.0 2298439.0 117684.3	3166895.0 0.0 0.0	0.0 810904.6 58996.4	0007-1
2930.00	Sh/Clst	58790.8 3020356.0 1784472.0	68373.8 656615.2 440162.6	0.0 217628.0 644184.3	129172.4 961786.7 175647.7	19174.7 0.0 280497.1	268397.1 3364915.0 112436.8	1352051.0 1173834.0 165950.9	5762694.0 0.0 52665.5	0.0 1923652.0 85800.7	0017-2
3100.00	Ca	171942.2 1495998.0 806132.9	113942.9 602548.1 671688.2	49834.2 143437.1 442695.2	129781.8 206230.4 470574.3	42121.3 0.0 318067.0	408592.0 2635505.0 218127.3	393984.0 291614.4 150691.9	303455.0 0.0 145919.5	0.0 1142077.0 104415.2	0023-1
4140.00	Sh/Clst	1081878.0 3123697.0 1074244.0	566868.1 287161.0 651355.8	262347.1 209930.7 435725.3	282840.0 374531.7 317845.0	119512.7 0.0 217718.9	187618.4 3286992.0 185239.1	1349340.0 755144.3 109857.9	85831.2 0.0 70209.1	0.0 1464912.0 46968.3	0055-4
4320.00	Coal	76162.4 2913084.0 1405868.0	34288.0 139511.1 1022891.0	11069.5 319807.5 699858.4	339490.4 258157.3 343918.0	7449.3 0.0 218097.7	81702.3 3433373.0 166064.7	1319308.0 561658.2 109223.7	177878.9 0.0 51367.5	0.0 1944883.0 33134.0	0059-2

Depth unit of measure: m

Depth	Lithology	21a	22a	27d $\beta$ S	27d $\beta$ R	27daS	27daR	28d $\beta$ S	28d $\beta$ R	28daS*	Sample
		29d $\beta$ S*	28daR*	27aaR	29d $\beta$ R	29daS	28aaS	29daR*	28 $\beta$ $\beta$ S		
		28aaR	29aaS	29 $\beta$ $\beta$ R	29 $\beta$ $\beta$ S	29aaR					
2330.00	Sh/Clst	602839.0 255281.8 558746.9	280500.7 165093.9 16416.0	184906.9 842945.1 915173.8	114220.1 429617.0 257424.8	149281.9 92606.4 1515019.0	78573.0 447329.0	85462.3 503152.0	65278.3 166796.2	297364.0	0007-1
2930.00	Sh/Clst	185084.2 449426.6 374295.8	49408.7 177215.8 112975.0	669474.3 604307.3 777648.1	499353.9 378443.1 122421.5	247975.2 132567.2 708491.3	226314.5 69800.1	387528.0 169363.9	276623.0 98847.2	263283.0	0017-2
3100.00	Ca	216268.5 387240.0 269767.4	116451.4 223696.0 191878.9	428203.0 516294.4 271291.4	258117.2 200611.2 178097.2	98744.0 84932.8 421377.3	118024.6 118504.9	164769.7 218083.8	99583.3 192396.3	208270.8	0023-1
4140.00	Sh/Clst	460672.7 273546.4 33137.5	247206.3 123817.2 77114.0	343723.4 85098.0 110482.0	197859.0 147778.8 85861.0	95448.4 57977.9 145186.1	114079.4 35402.5	157944.3 78753.2	90820.0 77806.3	73868.4	0055-4
4320.00	Coal	36782.4 78613.2 27698.9	19734.2 36190.6 46012.4	28112.8 17908.0 82260.4	29211.2 57374.7 60922.8	13050.3 26771.2 137218.4	8899.1 26172.9	39199.5 47976.8	22066.5 43251.6	9461.0	0059-2

\* 28daS coel with 27aaS, 29d $\beta$ S coel with 27 $\beta$  $\beta$ R, 28daR coel with 27 $\beta$  $\beta$ S, 29daR coel with 28 $\beta$  $\beta$ R

Table 11H: Raw triaromatic sterane data (peak height) m/z 231 for Well NOCS 2/11-9

Depth unit of measure: m

Depth	Lithology	a1	b1	c1	d1	e1	f1	g1	Sample
2330.00	Sh/Clst	26476.6	20172.5	51467.4	179653.9	101982.9	97061.5	92087.7	0007-1
2930.00	Sh/Clst	200794.7	113493.2	345022.7	1226531.0	354986.9	643266.3	311897.0	0017-2
3100.00	Ca	355289.2	319884.9	436615.4	1197411.0	527697.4	550367.5	453825.0	0023-1
4140.00	Sh/Clst	125729.3	76764.9	50016.5	120406.7	57017.4	56669.3	46001.8	0055-4
4320.00	Coal	0.0	107291.4	6175.4	20204.4	9271.2	9223.3	5844.6	0059-2

Depth unit of measure: m

Depth	Lithology	A1	B1	C1	D1	E1	F1	G1	H1	I1	Sample
2330.00	Sh/Clst	53965.2	29794.2	88340.8	118451.4	562428.6	68827.0	802969.6	727411.6	302975.1	0007-1
2930.00	Sh/Clst	236800.3	105870.8	404109.8	372038.4	1694768.0	244989.1	1433686.0	755941.8	203099.0	0017-2
3100.00	Ca	184656.6	93771.9	138977.3	172309.1	329151.2	57823.8	302208.0	240817.7	86941.0	0023-1
4140.00	Sh/Clst	9393.9	7645.3	8822.0	6986.2	17749.5	6575.9	13274.4	9315.2	3392.8	0055-4
4320.00	Coal	6463.2	6884.1	3197.6	3227.1	13908.7	3471.3	12442.0	7461.0	2522.5	0059-2

Table 11J: Raw sterane data (peak height) m/z 218 SIR for Well NOCS 2/11-9

Depth unit of measure: m

Depth	Lithology	27 $\beta$ BR	27 $\beta$ SS	28 $\beta$ BR	28 $\beta$ SS	29 $\beta$ BR	29 $\beta$ SS	30 $\beta$ BR	30 $\beta$ SS	Sample
2330.00	Sh/Clst	199182.6	127548.5	324514.6	235179.4	604370.2	306364.4	308480.6	261850.1	0007-1
2930.00	Sh/Clst	164672.5	87313.3	139460.1	113990.7	310487.9	133736.8	15827.3	18934.7	0017-2
3100.00	Ca	295900.8	218655.0	209478.9	188244.6	237192.5	205060.3	47205.4	56199.1	0023-1
4140.00	Sh/Clst	147997.2	95263.2	79681.1	73944.4	99954.3	90691.8	16346.9	17069.9	0055-4
4320.00	Coal	27384.9	13825.3	45641.0	42196.5	75514.4	63520.3	3832.8	8513.5	0059-2