6.3 Mud Report

36" hole, 30" csg.:

The 36" hole was drilled using seawater with return to the seabed. 5 m^3 high viscous pills were pumped on each connection. At 280 m a 24 m^3 high viscous pill was circulated around and a wiper trip made. 138 m^3 high viscous mud was circulated around prior to runming the 30" casing. Materials used in this section were: Bentonite, caustic soda, soda ash and lime.

26" hole, 20" csg.:

The riser was run before the 17½" pilot hole was drilled. Seawater was used with bentonite pills to raise the viscosity. After drilling out of the 30" shoe the hole was tight and 80 m^3 gel was pumpted around. During the under-reaming the mud weight was increased to 1.12 r.d. Before pulling out of running casing the hole was displaced with the high viscous mud. After the riser was pulled a 26" bis was run in the hole. The hole was tight at 481 m and consequently eamed to the casing depth using seawater with returns to the seabed. At 703 m 230 m^3 of 1.14 r.d. mud was circulated around prior to running the 20" casing. Materials used in this sections were: Bentonite, barite, lime, caustic soda, soda ash, and Spersene.

17½" hole, 13-3/8" csg.:

The 20" casing shoe was drilled out using 1.14 r.d. mud. The mud was dispersed with Spersene at the start of this interval and the drill solids were diluted with additions of prehydrated bentonite and seawater. At the 13-3/8" casing depth the mudweight was increased to 1.26 r.d. due to tight

hole. A 8 m^3 high viscous pill was pumpted prior to logging.
Materials used in this section were: Barite, bentonite, caustic soda, lime soda ash, low viscous CMC and Spersene.

12-1/4" hole,9-5/8" csg.: The 13-3/8" casing shoe was drilled out with 1.26 r.d. mud. The mud volume was maintained with pre-hydrated bentonite and seawater. The mud was treated for rheology and CMC was added for water loss control. At the end of this section larger addition of Spersene, XP-20 and caustic soda were made in anticipation of a future logging job. The mud weight was increased to 1.32 r.d. at the 9-5/8" casing depth due to tight hole.
Materials used in this section were: Barite, bentonite, low and high viscous CMC, Spersene, caustic soda, soda ash, lime and XP-20.

8-3/8" hole: The 9-5/8" casing shoe was drilled using 1.32 r.d. mud. After the hole was logged at 2531 m the mud weight was slowly decreased to 1.21 r.d. At 3500 m the pore pressure increased and the mud weight was increased again to 1.30 r.d. Due to tight hole during the logging at T.D. the mud weight was increased to 1.32 r.d. Due to the RFT getting stuck the J.T.H.P. fluid loss was lowered from 17 to 13 cm^3. The yild point was maintained around 5 Pascals down to 3500 m where it was raised to 8 Pascals to ensure good hole cleaning. The solids were maintained at a level of 10% to 14%. Due to high torque "Torque less" was added.

Materials used in this section were: Barite, bentonite, Spersene, XP-20, caustic soda, Magconol, lime, soda ash, low and high viscous CMC, Al sterate and Torque less.

DRESSER

DAILY MUD PROPERTIES

Table B-5

Well: 7120/12 - 1

DATE	Metres DEPTH	R.D. WT.	VIS SEC.	CORR. 115°F PV	CORR. 115°F YP	GELS Pascals 0	GELS Pascals 10	pH BECK [X] STRIP [ ]	FLUID LOSS 100 PSI API	FLUID LOSS 600 PSI 300 °F HT-HP	CL [X] CACL [ ] NACL [ ]	ALKALINITY PF	ALKALINITY PM	ALKALINITY MF	CA ppm	RETORT % OIL	RETORT % SOL	RETORT % WATER	V.G. METER READING @ 115° 600 R.P.M.	300 R.P.M.	200 R.P.M.	100 R.P.M.	6 R.P.M.	3 R.P.M.	Bbl CEC		TOTAL MUD COST
1.6	193	1.04	150					•																			1386
2	219	1.04	150																								2621
3	267	1.04	150																								4291
4	279	1.04	150						Ran 30" casing																		5828
5	279	1.04	150																								9050
6	557	1.08	50																								10084
7	710	1.08	55	5	15	4	10	10.5	NC	NC	16000	.8	2.9	2	1600	-	5	95	40	35	20	14	4	4	-		10939
8	555	1.10	40	5	12	4	10	Open hole to 26'											34	29	20	11	3	3	-		11585
9	702	1.14	90	6	26	8	25	Wt. up																			11857
10	703	1.04	65					Mix new mud. Ran 20"																			15679
11	703	1.14	60																								21682
12	703	1.14	60																								23629
13	703	1.14	60					Ran stack testing																			23629
14	703	1.14	70																								23629
15	703	1.14	75																								23629
16	675	1.14	45	5	15	3	9	11.5	50		7800	1.9	3	2.6	1400	0	5	95	40	35	23	15	4	4	25		28318
17	887	1.14	58	11	11	15	27	12.7	11.6		8000	1.8	4	2.6	160	0	9	91	45	28	24	24	17	16	25		31726
18	1075	1.13	62	12	15	20	29	10.7	9.4		7000	0.2	0.6	0.8	160	TR	7	93	54	42	92	32	23	20	25		39055
19	1274	1.2	50	9	10	16	19	9.7	11.2		12000	0.2	0.2	0.6	320	0	9	91	39	28	22	15	7	6	27.5		45094
20	1315	1.26	50	13	11	16	25	11.4	10.8		12000	0.3	1.1	1	240	0	11	89	47	34	29	22	17	11	27.5		45863
21	1315	1.26	50	13	11	16	25	11.4	10.8		12000	0.3	1.1	1	240	0	11	89	47	34	29	22	17	11	27.5		49766
22	1315	1.26	52	11	10	15	24	10.4	10.2		12000	0.6	1	1.4	240	0	10	90	42	31	27	21	13	10	27.5		50547
23	1315	1.26	52	11	10	15	24	11.9	11		12000	0.3	1.2	1	240	0	10	90	42	31	27	21	13	10	27.5		52801
									Ran 13 3/8" casing																		
24	1325	1.26	40	10	8	8	20	12.3	9.8	28	12000	0.9	3.8	2.3	160	0	11	89	35	25	20	13	5	4	27.5		54785
25	1389	1.26	48	14	10	15	24	11.6	8.4	18	12000	0.3	2	0.8	120	0	12	88	48	34	28	20	9	8	27.5		60395

DATE SPUD: June 1, 1980 DATE T.D.: COST:

DAILY MUD PROPERTIES

Table B-5

Well: 7120/12 - 1

PAGE 2

DATE	DEPTH	WT.	VIS SEC.	CORR. 115°F PV	CORR. 115°F YP	GELS 0	GELS 10	pH BECK (X) STRIP ☐	FLUID LOSS 100 PSI API	FLUID LOSS 500 PSI 300 °F HT-HP	CL (X) CACL ☐ NACL ☐	ALKALINITY PF	ALKALINITY PM	ALKALINITY MF	CA ppm	RETORT % OIL	RETORT % SOL	RETORT % WATER	V.G. METER READING @ 115° 600 R.P.M.	300 R.P.M.	200 R.P.M.	100 R.P.M.	6 R.P.M.	3 R.P.M.	Bbl CEC		TOTAL MUD COST
26.6	1471	1.26	42	14	7	7	12	10.8	9.2	19	11000	0.3	2	1.5	240	0	13	87	42	28	21	14	5	4	27.5		63355
27	1535	1.26	45	14	7	9	14	10.5	9.2	19.5	11000	0.2	0.6	1	320	0	13	87	44	29	22	15	5	4	27.5		66212
28	1572	1.26	46	11	6	4	10	9.8	9.8	26	12000	0.2	0.8	0.8	320	0	12	88	34	23	19	12	3	2	27.5		69533
29	1629	1.26	43	11	6	3	9	10.9	8.4	15.4	13000	0.3	0.6	0.6	240	0	12	88	34	23	17	11	3	2	27.5		72919
30	1668	1.26	45	12	8	7	14	11.2	7.8	21	12000	0.2	0.4	0.5	160	0	12	88	40	28	23	16	10	8	27.5		76430
1.7	1668	1.26	45	12	8	7	14	11.2	7.8	21	12000	0.2	0.4	0.5	160	0	13	87	40	28	23	16	10	8	23		76430
2	1708	1.26	43	13	6	3	6	10.5	7.8	30	10000	0.3	0.5	0.4	160	0	12	88	38	25	20	15	6	5	26		78000
3	1815	1.26	40	12	4	3	4	11.0	6.2	20	13000	0.9	0.8	1.0	100	0	12	88	38	25	20	15	2	2	28		80645
4	1875	1.32	58	12	12	5	9	11.0	5.8	18	16000	0.8	1.2	1.0	150	0	13	87	48	36	28	19	5	5	28		85190
5	1875	1.32	55	12	12	5	9	11.0	5.8	18	16000	0.8	1.2	1.0	150	0	13	87	48	36	28	19	5	5	28		85190
6	1875	1.32	55	13	12	5	9	11.0	6.0	20	16000	0.7	1.0	1.0	200	0	14	86	50	37	22	16	5	5	28		86464
7	1860	1.32	55	14	12	5	9	11.5	7.0	22	16000	1.0	1.5	1.8	280	0	14	86	52	38	20	18	5	6	28		86642
											RAN 9 5/8"															
8	1860	1.32	52	15	7	3	8	11.5	8.0	35	16000	2.0	1.9	1.5	400	0	14	86	44	29	19	14	3	3	28		88724
9	1914	1.32	44	12	5	3	4	11.5	5.8	18	16000	1.3	1.8	1.9	150	0	14	86	34	22	16	11	2	2	26		91858
10	1914	1.32	43	12	5	2	4	11.5	5.8	18	16000	1.2	1.8	1.8	150	0	14	86	34	22	16	11	2	2	26		91858
11	1914	1.32	45	12	5	2	4	11.5	6.6	22	16000	1.2	1.4	1.8	150	0	14	86	34	22	16	11	2	2	26		91858
											RIG STRIKE															
15.8	1948	1.32	44	12	4	2	3	11.0	7.0	30	16000	1.4	1.8	1.9	300	0	14	86	32	20	15	9	2	1	24		95629
16	1980	1.32	44	12	4	2	3	10.3	5.0	15	16000	0.8	1.2	1.3	200	0	14	86	32	20	14	8	2	1	25		98643
17	2025	1.32	46	12	3	2	3	11.0	5.0	15	16000	1.2	1.7	1.6	150	0	14	86	30	18	13	8	2	1	26		99649
18	2056	1.32	46	16	4	3	5	11.0	4.5	17	14500	0.7	1.9	1.5	240	0	14	86	40	24	19	12	2	2	26		100374
19	2116	1.32	43	15	3	2	3	10.5	4.5	17	15000	0.7	1.7	1.5	280	0	14	86	36	21	17	9	2	2	26		100816
20	2186	1.32	44	14	3	2	4	11.0	4.4	16	15500	1.2	1.9	1.6	200	0	14	86	34	20	17	11	2	2	26		102497
21	2206	1.32	44	14	3	2	3	10.8	4.2	16	15000	1.0	1.8	1.3	200	0	14	86	34	20	15	9	2	1	26		102871
22	2260	1.32	44	14	3	2	3	11.0	4.4	16	15000	1.3	1.9	1.8	200	0	14	86	34	20	15	9	2	1	26		103155
23	2239	1.32	44	13	3	2	3	10.8	4.8	17	15500	1.2	1.8	1.6	280	0	14	86	32	19	14	9	2	1	27		104179
24	2289	1.32	49	14	5	3	4	10.3	4.2	16	15000	0.8	1.8	1.6	240	0	14	86	38	24	19	12	2	2	27		105397

DATE SPUD: June 1, 1980 DATE T.D.: COST:

DRESSER

DAILY MUD PROPERTIES

Well: 7120/12 - 1

Table B-5

DATE	DEPTH	R.D. WT.	VIS SEC.	CORR. 115°F PV	CORR. 115°F YP	GELS Pascals 0	GELS Pascals 10	pH BECK ☒ STRIP ☐	FLUID LOSS 100 PSI API	FLUID LOSS 600 PSI 300 °F HT-HP	CL ☒ CACL ☐ NACL ☐	ALKALINITY PF	ALKALINITY PM	ALKALINITY MF	CA ppm	RETORT % OIL	RETORT % SOL	RETORT % WATER	V.G. METER READING @ 115° 600 R.P.M.	300 R.P.M.	200 R.P.M.	100 R.P.M.	6 R.P.M.	3 R.P.M.	Bbl CEC		TOTAL MUD COST
25.8	2321	1.32	44	19	5	2	4	10.8	4.2	16	15000	.9	1.8	1.4	240	0	14	86	48	29	16	12	2	1	27		105461
26	2380	1.32	46	15	3	2	6	10.6	4.2	16.2	15000	.6	1.6	1.4	280	0	14	86	36	21	17	10	2	1	25		106186
27	2439	1.32	46	15	3	2	8	10.3	3.8	15.8	15000	.4	1.2	.9	200	0	14	86	36	21	16	10	2	1	27		106186
28	2516	1.32	51	18	6	3	7	11.1	4.2	16	15000	.7	1.6	1.3	120	0	14	86	36	21	16	10	2	1	27		106633
29	2531	1.32	47	18	6	3	7	10.8	4.4	17	15000	.6	1.5	1.3	160	0	14	86	48	30	21	17	5	2	27		106633
30	2548	1.32	50	18	6	4	14	11.1	4.4	16.8	16000	.6	1.5	1.3	240	0	14	86	47	29	23	15	4	3	25		106892
31	2548	1.32	50	18	6	4	14	11.1	4.4	16.8	16000	.6	1.5	1.3	240	0	14	86	47	29	23	15	4	3	25		106892
1.9	2673	1.28	46	14	4	2	9	10.6	5.0	18.6	14500	.4	1.1	1.0	160	0	12	88	36	22	16	10	3	2	25		107997
2	2632	1.26	51	16	6	3	14	10.1	4.6	16.6	14500	.4	1.1	.9	160	0	12	88	45	29	23	15	4	3	25		109494
3	2689	1.26	52	19	7	3	16	10.7	4.6	16	15500	.6	1.5	1.2	200	0	12	88	52	33	26	17	5	3	22.5		109575
4	2728	1.26	53	19	7	3	16	10.9	4.4	16.6	16000	.6	1.7	1.3	200	0	12	88	52	33	25	16	5	3	22.5		109657
5	2790	1.21	42	14	4	2	13	10.5	5.6	18	16000	.4	1.3	1.0	240	0	10	90	35	21	17	11	3	2	22.5		112168
6	2850	1.21	44	14	5	4	16	11.0	5.6	18	14500	.4	1.4	.8	200	0	10	90	38	24	19	13	4	3	22.5		112264
7	2905	1.21	45	14	5	4	16	10.4	6.2	19	14000	.3	1.0	.5	240	0	10	90	37	23	18	12	4	3	22.5		112558
8	2928	1.21	52	18	5	3	9	11.2	5.0	17	16000	.5	1.7	1.0	160	0	10	90	46	28	21	13	3	2	22.5		115128
9	2975	1.22	48	18	5	3	7	11.0	5.0	17	16000	.7	1.6	1.0	180	0	10	90	46	28	21	13	3	2	23		115919
10	3033	1.22	45	17	4	2	6	10.8	5.0	17	16000	.7	1.4	1.0	250	0	10	90	42	25	19	14	2	1	23		115958
11	3104	1.22	45	17	4	2	4	10.3	5.2	18	16000	.4	1.1	.8	300	0	10	90	42	25	19	14	2	1	23		116356
12	3180	1.22	45	18	4	2	4	11.4	4.4	16	16000	1.2	2.0	1.6	150	0	10	90	44	26	18	11	2	1	24		117796
13	3212	1.22	47	18	5	3	4	11.0	4.2	17	14000	.9	1.9	1.3	150	0	10	90	46	28	19	14	2	2	28		119459
14	3273	1.22	45	16	3	2	5	10.5	4.0	16	14500	.7	1.3	1.0	200	0	10	90	38	22	15	11	2	1	29		119419
15	3318	1.21	47	16	3	2	5	11.5	4.8	18	15000	1.2	2.0	1.3	200	0	10	90	38	22	16	10	2	1	28		121904
16	3334	1.21	47	16	3	3	5	11.5	4.8	18	15000	1.2	2.0	1.3	160	0	10	90	38	22	16	10	2	1	28		121904
17	3356	1.21	54	16	5	4	7	11.5	4.8	17	15000	1.4	2.0	1.8	200	0	10	90	42	26	19	12	2	2	30		123189
18	3397	1.21	51	16	5	4	7	11.5	4.6	17	15000	1.4	2.0	1.8	200	0	10	90	42	26	19	12	2	2	30		124058
19	3448	1.21	58	17	8	5	8	11.3	4.6	16	15500	1.5	2.0	1.8	300	0	10	90	50	33	24	15	3	3	30		125172
20	3489	1.22	56	18	8	4	9	11.0	4.6	16	15500	1.2	1.5	1.7	400	0	10	90	52	34	24	15	3	3	30		125483
21	3521	1.26	63	20	10	3	9	10.5	5.4	20	15500	.8	1.0	1.2	300	0	12	88	60	40	28	19	3		28		127802

DATE SPUD: June 1, 1980 DATE T.D.: COST

DRESSER

DAILY MUD PROPERTIES

Table B-5

Well: 7120/12 - 1

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DATE	DEPTH	Rd WT.	VIS SEC.	CORR. 115°F PV	Pascals YP	GELS 0	GELS 10	pH BECK ☒ STRIP ☐	FLUID LOSS 100 PSI API	FLUID LOSS 600 PSI 300 °F HT-HP	CL ☒ CACL ☐ NACL ☐	ALKALINITY PF	ALKALINITY PM	ALKALINITY MF	CA ppm	RETORT % OIL	RETORT % SOL	RETORT % WATER	V.G. METER READING @ 115° 600 R.P.M.	300 R.P.M.	200 R.P.M.	100 R.P.M.	6 R.P.M.	3 R.P.M.	Bbl CEC		TOTAL MUD COST
22.9	3538	1.30	58	20	10	5	9	11.5	5	18	15500	1.4	1.7	1.9	200	0	13	87	60	40	28	19	4	3	28		149766
23	3574	1.30	56	18	8	5	9	11.6	5.2	18	15000	1.5	1.8	2.1	200	0	13	87	52	34	23	16	4	3	28		150982
24	3574	1.32	58	17	6	4	8	11.4	4.8	17	15000	1.3	1.7	1.8	200	0	13	87	46	29	21	14	3	3	28		151446
25	3574	1.32	58	17	6	4	8	11.4	4.8	17	15000	1.3	1.7	1.8	200	0	13	87	46	29	21	14	3	3	28		151446
26	3574	1.32	59	18	6	4	9	11.4	4.8	17	15000	1.2	1.6	1.8	200	0	13	87	48	30	22	15	3	3	28		151446
27	3574	1.32	59	18	6	4	9	11.4	4.8	17	15000	1.2	1.6	1.8	200	0	13	87	48	30	22	15	4	3	28		151446
28	3574	1.32	67	21	8	5	10	11.5	3.4	13	15000	1.4	1.8	1.8	200	0	13	87	58	37	25	18	5	4	30		157227
29	3574	1.32	66	21	8	5	10	11.5	3.4	13	15000	1.4	1.8	1.8	200	0	13	87	58	37	25	18	5	4	30		157227
30	3574	1.32	66	24	7	5	16	10.6	3.8	13	15000	0.7	1.5	1.3	200	0	13	87	61	37	28	17	4	3	30		158058
1.10	3574	1.32	66	24	7	5	16	10.6	3.8	13	15000	0.7	1.5	1.3	200	0	13	87	61	37	28	17	4	3	27		158058
2	1850	1.32	73	26	9	5	14	PLUG & ABANDON																			164693

DATE SPUD: DATE T.D.: COST:

RFT RESULTS

Well: 7120/12-1

RUN 1

	DEPTH (m RKB)	H.P. (PSI)	F.P. (PSI)	PERM.
1/1	1608,5	2992	2482,5	POOR
2/1	1705	3191,5	2670,5	"
3/1	1782	3351	-	TIGHT
4/1	1829,5	3438,5	-	"
5/1	1862	3487	-	"

RUN 2

	DEPTH (m RKB)	H.P. (PSI)	F.P. (PSI)	PERM.
1/2	2060	3875,5	3215,5	FAIR
2/2	2072	3897,5	3233	"
3/2	2086	3923,5	3256	FAIR
4/2	2118,5	3985	3306	GOOD
5/2	2210	4153	3444	FAIR
6/2	2269	4264,5	3533	"
7/2	2332	4381,5	3628	"
8/2	2380	4472	3734	POOR
9/2	2418,5	4542	3762	FAIR
10/2	2469	4634	3822	POOR
11/2	2540	4767,5	-	TIGHT
12/2	2536,5	4762,5	-	"

RUN 3

	DEPTH (m RKB)	H.P. (PSI)	F.P. (PSI)	PERM.
1/3	2627	4971,5	4159,5	POOR
2/3	2713	5105	-	SEAL FAIL
3/3	2713,5	5105	-	"
4/3	2712,5	5105	-	"
5/3	2959	5627,5	-	TIGHT

RUN 4

	DEPTH (m RKB)	H.P. (PSI)	F.P. (PSI)	PERM.
1/4	3491	6569	-	SEAL FAIL
2/4	3491,8	6564	-	"
3/4	3491,2	6559	-	"
4/4	3490,5	6560	-	"
5/4	3476,6	6541	-	TIGHT
6/4	3475	6544	-	"
7/4	3476	6542	-	SEAL FAIL
8/4	2960,5	5616	-	TIGHT
9/4	2960	5619	-	"

ATTEMPTED SEGREGATED SAMPLE AT 3491, 3476,6, 2959 AND 2960,5 m: NO RECOVERY

DST RESULTS

NO DST'S WERE PERFORMED

Checked: B. LÆRKERÖD
Date: 5/3-81

2. RFT RESULTS

The RFT measurements were taken in three runs:
run no. 1: in the interval 1608.5 mrkb to 1852 mrkb
run no. 2: in the interval 2060 mrkb to 2540 mrkb
run no. 3: in the interval 2627 mrkb to 3476.6 mrkb

In run no. 3, only one pressure measurement was positive, namely at 2627 mrkb. Otherwise it was not possible to take any more measurements or samples. Due to operational problems sampling was given first priority but several attempts at approximately 3476 mrkb and 2960 mrkb were unsuccessful.

The conlcusions to be drawn from the RFT is that no overpressure was detected where measurements were taken. A few points could indicate slight overpressures, but this is interpreted as the formation being supercharged.

A summary of the pressure measurements is given in table no. C.4 and fig. C.1.

Table C.4

WELL 7120/12-1

SUMMARY: RFT-PRESSURE MEASUREMENTS

	HYDROSTATIC PRESSURE (PSIA)		FORMATION PRESSURE (PSIA)		
DEPTH MRKB	MEASURED	TEMP. CORRECTED	MEASURED	TEMP. CORRECTED	RUN
1608.5	2983	2992.0	2475	2482.5	
1705	3182	3191.5	2662	2670.5	
1782	3341	3351	tight	-	1
1829.5	3428	3438.5	tight	-	at 133° F
1852	3476	3487	tight	-	
2060	3862	3875.6	3204	3215.5	
2072	3884	3897.5	3221	3233	
2086	3910	3923.5	3244	3256	
2118.5	3971	3985	3294	3306	
2210	4139	4153	3431	3444	2
2269	4250	4264.5	3519	3533	
2332	4367	4381.7	3616	3628	at 150° F
2380	4457	4472	3721	3734	
2418.5	4527	4542	3749	3762	
2469	4619	4634	3824	3822	
2536.5	4747	4762.5	tight	-	
2540	4752	4767.5	tight	-	
2627	4945	4971.7	4136	4159.5	3
2959	5599	5627.5	tight	-	at 200° F

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CONTINENTAL SHELF INSTITUTE

REPORT TITLE

SOURCE ROCK ANALYSES OF WELL 7120/12-1

CLIENT

NORSK HYDRO

CLIENT's REF.:	REPORT NO.:
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AUTHOR (S):
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DEPARTMENT:	RESPONSIBLE SCIENTIST:
Organic Geochemistry	Malvin Bjorøy

SUMMARY:

See next page.

KEY WORDS

Source rock

SUMMARY

The analysed sequence of the well was divided into zones.

Zone A; 700 - 1315 m: The whole is found to be immature with a fair potential as a source rock for gas and oil.

Zone B; 1315 - 1660 m: Mixture of claystone and sandstone lithologies, which is found to be immature. The dark grey claystone has a rich potential as a source rock for gas while the grey silty claystone was a fair/good potential as a source rock for gas.

Zone C; 1660 - 2005 m: Claystone lithologies. The whole zone is found to be immature increasing to moderate mature with rich potential as a source rock for gas and heavy oil.

Zone D; 2005 - 2095 m: This zone has a mixture of claystone, limestone and sandstone lithologies. Cavings makes interpretation difficult. The zone is tentatively found to be immature with a good potential as a source rock for gas.

Zone E; 2095 - 2175 m: Mainly sandstone.

Zone F; 2125 - 2455 m: Mixture of sandstone and claystone lithologies. The whole zone is found to be moderate mature. The claystone in the zone, down to 2335 m has a rich potential as a source rock for gas and heavy oil while the sequence from 2335 - 2400 m has a fair potential as a source rock for gas and heavy oil. The lower part of the zone has a rich potential as a source rock for gas and heavy oil.

Zone G; 2455 - 2850 m: The shale in the zone is found to be moderate mature with a poor to fair potential as a source rock for oil and gas.

Zone H; 2850 - 3574 m: As zone F.

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EXPERIMENTAL AND DESCRIPTION OF INTERPRETATION LEVELS

Headspace gas analyses

One ml. of the headspace gas from each of the cans was analysed gas chromatographically for light hydrocarbons. The results are shown in Table Ia. The canned samples were washed with temperated water on 4, 2, 1 and 0.125 mm sieves to remove drilling mud and thereafter dried at 35°C.

Occluded gas

An aliquote of the 1-2 mm fraction of each sample before drying was crushed in water using an airtight ball mill, and one ml of the headspace analysed gas chromatographically. The results are shown in Table Ib.

Total Organic Carbon (TOC)

Picked cuttings of the various lithologies in each sample were crushed in a centrifugal mill. Aliquotes of the samples where then weighed into Leco cruisibles and treated with hot 2N HCl to remove carbonate and washed twice with destilled water to remove traces of HCl. The cruisibles were then places in a vacuum oven at 50°C and evacuated to 20 mm Hg for 12 hrs. The samples were then analysed on a Leco E C 12 carbon determinator, to determine the total organic carbon (TOC).

Extractable Organic Matter (EOM)

From the TOC results samples were selected for extraction. Of the selected samples, approximately 100 gm of each was extracted in a flow through system (Radke et al., 1978 (Anal. chem. 49, 663-665)) for 10 min. using dichloromethane (DCM) as solvent. The DCM used as solvent was distilled in an all glass apparatus to remove contaminants.

Activated copper filings were used to remove any free sulphur from the samples.

After extraction, the solvent was removed on a Buchi Rotavapor and transferred to a 50 ml flask. The rest of the solvent was then removed and the amount of extractable organic matter (EOM) determined.

Chromatographic Separation

The extractable organic matter (EOM) was separated into saturated fraction, aromatic fraction and non hydrocarbon fraction using a MPLC system with hexane as eluant (Radke et al., Anal. Chem, 1980). The various fractions were evaluated on a Buchi Rotavator and transferred to glas-vials and dried in a stream of nitrogen. The various results are given in Table III-VI.

Gas chromatographic analyses

The saturated fraction was diluted with n-hexane and analysed on a HP 5730 A gaschromatograph, fitted with a 25 m OV101 glasscapillary column and an automatic injection system. Hydrogen (0.7 ml/min.) was used as carrier gas and the injection was performed in the splitt mode (1:20).

Vitrinite Reflectance

Samples, taken at various intervals, were sent for vitrinite reflectance measurements at Geoconsultants, Newcastle-upon-Tyne. The samples were mounted in Bakelite resin blocks; care being taken during the setting of the plastic to avoid temperatures in excess of 100°C. The samples where then ground, initially on a diamond lap followed by two grades of corundum paper. All grinding and subsequent polishing stages in the preparation were carried out using isopropyl alcohol as lubricant, since water leads to the swelling and disintegration of the clay fraction of the samples.

Polishing of the samples was performed on Selvyt cloths using three grades of alumina, 5/20, 3/50 and Gamma, followed by careful cleaning of the surface.

Reflectance determinations were carried out on a Leitz M.P.V. microphotometer under oil immersion, R.I. 1.516 at a wavelength of 546 nm. The field measured was varied to suit the size of the organic particle, but was usually of the order of 2 micron diameter.

The surface of the polished block was searched by the operator for suitable areas of vitrinitic material in the sediment. The reflectance of the organic particle was determined relative to optical glass standards of known reflectance. Where possible, a minimum of twenty individual particles of vitrinite was measured, although in many cases this number could not be achieved.

The samples were also analysed in UV light, and the colour of the fluoressing material determined. Below, a scale comparing the vitrinite reflectance measurements and the fluorescence measurements is given.

VITRINITE REFLECTANCE R.AVER. 546nm 1·516		0·20		0·30		0·40	0·50	0·60	0·70	0 80	0 90	1·00	1·10
% CARBON CONTENT DAF.		57		62		70	73	76	79	80·5	82·5	84	85·5
LIPTINITE FLUOR. EXC. 400nm B 530nm	nm	725	750	790		820	840		860	890		940	
	COLOUR	G	$G/_Y$	Y		$Y/_O$	L.O.	M.O.	D.O.		$O/_R$		R
	ZONE	1	2	3		4	5	6	7		8		9

NOTE LIPTINITE NM = NUMERICAL MEASUREMENT OF OVERALL SPORE COLOUR AND NOT PEAK FLUORESCENCE WAVELENGTH

RELATIONSHIP BETWEEN LIPTINITE FLUORESCENCE COLOUR, VITRINITE REFLECTANCE AND CARBON CONTENT IS VARIABLE WITH DEPOSITIONAL ENVIRONMENT AND CATAGENIC HISTORY. THE ABOVE IS ONLY A GUIDE. LIPTINITE WILL OFTEN APPEAR TO PROGRESS TO DEEP ORANGE COLOUR AND THEN FADE RATHER THAN DEVELOP O/R AND RED SHADE. TERMINATION OF FLUORESCENCE IS ALSO VARIABLE.

07/I/3/mk

Processing of Samples and Evaluation of Visual Kerogen

Crushed rock samples were treated with hydrochloric and hydrofluoric acids to remove the minerals. A series of microscopic slides contain strew mounts of the residue:

T-slide represents the total acid insoluble residue.
N-slide represents a screened residue (15µ meshes).
O-slide contains palynodebris remaining after flotation ($Zn\ Br_2$) to remove disturbing heavy minerals.
X-slides contain oxidized residues, (oxidizing may be required due to sapropel which embeds palynomorphs, or to high coalification preventing the identification of the various groups).

T and/or O slides are necessary to evaluate kerogen composition/palynofacies which is closely related to sample lithology.

Screened or oxidized residues are normally required to consentrate the larger fragments, and to study palynomorphs (pollen, spores and dinoflagellates) and cuticles for paleodating and colour evaluation.

So far visual evaluations of kerogen have been undertaken from residues mounted in glycerine jelly, and studied by Leitz Dialux in normal light (halogene) using x10 and x63 objectives. By x63 magnification it is possible to distinguish single particles of diameters about 2 and, if wanted, to make a more refined classification of the screened residues (particles >15 µm).

The colour evaluation is based on colour tones of spores and pollen (preferably) with support from other types of kerogen (woody material, cuticles and sapropel). These colours are dependant upon the maturity, but also are under influence of the paleo-environment (lithology of the rock, oxidation and decay processes). The colours and the estimated colour index of an individual sample may therefore deviate from those of the neighbouring samples. The techniques in visual kerogen studies are adopted from Staplin (1969) and Burgess (1974).

In interpretation of the maturity from the estimated colour indices we follow a general scheme that is calibrated against vitrinite reflectance values (Ro).

Ro	0.45	0.6	0.9	1.0	1.3	
colour index	2-	2	2+	3-	3	3+
Maturity intervals	Mature mature	Mature (oil window)			Condensate window	

Rock-Eval Pyrolyses

100 mg crushed sample was put into a platinum cruisible whose bottom and cover are made of sintered steel and analysed on a Rock-Eval pyrolyser.

RESULTS AND DISCUSSION

Light Hydrocarbon Analyses

On the basis of the light hydrocarbon analyses, the analysed sequence of the well, 700-3574 m, was divided into eight zones.

A: 700-1315 m.
B: 1315-1660 m.
C: 1660-2005 m.
D: 2005-2095 m.
E: 2095-2125 m.
F: 2125-2455 m.
G: 2455-2850 m.
H: 2850-3574 m.

Zone A, 700-1315 m: This zone consists mainly of claystone. Small variations are seen in the abundance and composition of the light hydrocarbons, but most of the zone has a fair abundance of C_1 - C_4 hydrocarbons and a poor abundance of C_5+ hydrocarbons.

Zone B, 1315-1660 m: This zone is separated from zone A due to the increase in the abundance of C_5+ hydrocarbons and an increase in the wetness of the gas. This is probably due to the change in lithology observed in the middle part of this zone, from claystone to sandstone.

Zone C, 1660-2005 m: A zone with very variable lithology which is the probable cause for the variation in light hydrocarbon results. The abundance of the C_1 - C_4 hydrocarbons is good throughout the zone but the composition is very variable (Table I).

Zone D, 2005 - 2095 m: The abundance of C_1 - C_4 hydrocarbons decreases with increasing depth while the iC_4/nC_4 ratio drops sharply at 2500 m compared with the zone above.

Zone E, 2095-2125 m: This zone consists mainly of sandstone and the abundance of light hydrocarbons is low indicating that it does not contain migrated hydrocarbons.

Zone F, 2125-2455 m: The upper part of this zone consists mainly of sandstone, with increasing abundance of claystone from approximately 2200 m. This part of the zone, 2200-2455 m has a very mixed lithology. The abundance of C_1 - C_4 hydrocarbons shows a sharp increase at the top of this zone and the whole of the zone has a good abundance of C_1 - C_4 hydrocarbons and a fair abundance of C_5+ hydrocarbons.

This could indicate some migrated hydrocarbons in the sandstone in this zone.

Zone G, 2455-2850 m: The upper part of this zone consists mainly of sandstone, changing to mainly shale from approximately 2600 m. The abundance of both C_1 - C_4 and C_5+ hydrocarbons drops sharply and is found to be poor for both categories.

Zone H, 2850-3120 m: The lithology of the samples from this zone shows a mixture of fine grained sandstone and silty shale. The zone is separated out from zone E on the basis of an increase in the abundance of the C_5+ hydrocarbons together with an increase in the wetness of the gas, this is, however, very erratic for a large number of samples.

Total Organic Carbon

Zone A: The abundance of organic carbon in the claystone is relatively constant, approximately 1.5% throughout the zone.

Zone B: This zone consists of various claystone, siltstone and limestone lithologies. The abundance of organic carbon varies considerably within this zone, but most of the claystone is found to have a good to rich abundance of organic carbon.

Zone C: This zone consists mainly of claystone with a rich abundance of organic carbon. A general increase in the abundance of organic carbon is found with increasing depth.

Zone D: This zone consists of a mixture of three lithologies, claystone, limestone and sandstone. The claystone has TOC values similar to the zone above while the abundance of TOC in the limestone is good for such a lithology.

Zone E: This zone consists mainly of sandstone, and organic carbon was not measured.

Zone E: The upper part is found to be similar to zone E. From approximately 2720 m, claystone samples, with very high abundance of organic carbon, are again encountered. This is seen down to approximately 2350 m where the claystone has a far lower abundance of organic carbon. The lowermost two samples in the zone are again found to have a rich abundance of organic carbon.

Zone G: The claystone in zone F varies considerably. The upper part has a good to rich abundance of organic carbon, but with a very strong variation from sample to sample. From approximately 2580 m, the claystone in the samples is found to have a fair potential of organic carbon.

Zone H: This zone is quite different from the other zones and most of the samples analysed are clayst/siltstone. The variation in the upper part is large while the samples from approximately 3100 m have a good abundance of organic carbon. The lower part of the zone is again found to be claystone.

Sidewall cores and corechips

A number of sidewall cores and corechips were analysed (Table II b.), and the results from these analyses agree well with the analyses on the cutting samples throughout the well.

Extraction and Chromatographic Separation

A number of samples were extracted and the extractable organic matter chromatographically analysed. Below, the samples are described zone by zone.

Zone A: Six samples from this zone were analysed (Table III-VII), and all were found to have a poor abundance of extractable hydrocarbons. The low extractability is verified by the carbon normalized values. The composition of the hydrocarbons vary considerably between the analysed samples in this zone, but apart from the sample from 1775, which has a very high yield of saturates, there is a general increase of saturates compared to

aromatics with increasing depth. The gas chromatograms of the saturated hydrocarbon fractions vary considerably from sample to sample. The sample from 760 m has a pristane/nC_{17} ratio, a high CPI value and distinct peaks in the sterane/triterpane region typical for immature kerogen of terrestrial origin. The next sample, 775 m, has a completely different distribution with a bimodal n-alkane distribution and a far lower CPI value. It is believed the large amount of high n-alkanes might be due to reworked material. Sample, 895 m, also has a bimodal n-alkane distribution but with a high CPI value.

A chromatogram such as this indicates an input from a mixture of terrestrial and amorphous material. The gas chromatogram of the saturated fraction of the sample from 1000 m is rather strange. The isoprenoids are rather small, and the n-alkanes havean unusual a strange distribution with a very low CPI value. nC_{28} is particularly large. Two unidentified peaks are registered after nC_{21} and nC_{23}. These two peaks are also seen in the sample from 895 m. This strange chromatogram might be due to some contamination from a mud additive. The gas chromatogram of the saturated fraction from 1090 m is relatively similar to the uppermost analysed sample, typical for an immature sample of terrestrial origin. The lowermost analysed sample in this zone, 1210 m, has a chromatogram similar to the one from 775 m with a bimodal distribution. The heavy n-alkanes could be from reworked terrestrial matter.

Zone B: Nine samples from this zone were extracted (Table III-VII). All the samples, except 1525 m have a poor or poor/fair abundance of extractable hydrocarbons. The sample from 1525 m has a good abundance of extractable hydrocarbons. Similar results are seen for the organic carbon normalized results. The composition of the hydrocarbons varies considerably from sample to sample, indicating a variation of the kerogen input. One sample, 1375 m has a very low aromatic content while all the rest of the samples are found to have a saturated content slightly above the aromatic content. There is no general trend in the variation. The gas chromatograms of the saturated hydrocarbon fraction show a similar variation to those from zone A. The sample from 1345 m has a bimodal distribution with a low pristane/nC_{17} ratio and high CPI value indicating an input from both amorphous (front end) and immature terrestrial material (heavy end). The sample from 1375 m shows a large unresolved envelope in the nC_{20} - nC_{30} region. This type of gas chromatogram is observed earlier for outcrop samples, both on Sval-

bard and on Andøya, and could be due to a weathering effect, probably on material which later has been reworked. The sample from 1390 m has a typical pattern for an immature sample with a high pristane/nC_{17} ratio and a high CPI value. The samples from 1420 and 1465 m show the strange distribution with very large heavy n-alkane envelope, probably from reworked material. The two strange peaks after nC_{21} and nC_{23} are registered in these two samples. The gas chromatogram of the saturated hydrocarbon distribution of the sample from 1525 m shows a very small pristane/nC_{17} ratio and high CPI typical for immature terrestrial material together with a series of peaks between nC_{15} and nC_{22}. These peaks are not identified, but could be sesquiterpanes.

The gas chromatograms of the samples from 1555 m and 1600 m are typical for immature hydrocarbons from terrestrial material. The pristane/nC_{17} ratio is low for both samples indicating an input of either more mature hydrocarbons or more likely, some hydrocarbons from an amorphous source. The sample form 1615 m has a large abundance of heavy n-alkanes with a high CPI value, typical for immature terrestrial material. This is in agreement with the large concentration of steranes/triterpanes recorded. A large strange peak is recorded after nC_{26}.

Zone C: A total of nineteen samples from this zone, fourteen cuttings samples and five core samples were extracted (Table III-VII). The results from the core samples are in good agreement with the results from the cuttings, and these are found to have a good abundance of extractable hydrocarbons. This is in good agreement with the organic carbon normalized results, except for the sample from 1667 m which has a rich extractability. The extractability of the cutting samples varies slightly. The uppermost sample, 1660 m, is found to have a similar extractability to those from the zone above, i.e. a poor abundance of extractable hydrocarbons. This increases to a fair abundance of extractable hydrocarbons in the next sample, 1675 m. The samples from 1690 m to 1900 m all have a good abundance while in the lower part of the zone all have a rich abundance of extractable hydrocarbons. When the extracted results are normalized to organic carbon, far lower values are found. This is probably due to the low maturity of the samples. A very small proportion of hydrocarbons are produced from the kerogen at this maturity. The composition of hydrocarbons varies from sample to sample, but on the whole there are more aromatic hydrocarbons than saturated. This also indicates a low maturity. The gas chromatograms of the saturated

hydrocarbon fractions show similar distributions as those found for samples in zones A and B. The cutting samples from 1664 m, 1666.7 m and 1667.55 m all show the same distribution with high pristane/nC_{17} ratio, high CPI value and distinct steranes and triterpanes, typical for immature hydrocarbons of terrestrial origin. The core sample from 1661.75 m shows the strange large envelope of heavy n-alkanes with the strange peaks after nC_{21} and nC_{23} also found in cutting samples higher up in the well. The gas chromatograms of the saturated hydrocarbon fractions of the two samples from 1675-90 m and 1690-1705 m show a less distinct CPI value and lesser amount of heavy n-alkanes and more medium weight n-alkanes indicating an input from more amorphous kerogen. The cutting samples from 1755-1990 m again show the distinct features for immature hydrocarbons from a terrestrial source with high pristane/CPI ratio, high CPI value and distinct pristane/ triterpanes.

Zone D: Three samples from this zone, two cutting samples and one core sample were extracted and found to vary considerably. The extractability of the extracted cutting samples are similar to those from the zone above. This together with a similarity found in the gas chromatograms indicate that the claystone cuttings probably are cavings. The analysed core sample from 2043 m has a poor abundance of extractable hydrocarbons and the saturated hydrocarbon fraction shows a smooth unimodal front biased distribution indicating a larger influx of amorphous hydrocarbons than in the cutting samples.

Zone E: No samples were extracted.

Zone F: Six samples from this zone were extracted (Table III-VII). The sample from 2200 m has a rich abundance of extractable hydrocarbons while the sample from 2410 m has a good abundance and the remainder has a poor abundance of extractable hydrocarbons. These results are verified by the organic carbon normalized values. The composition of hydrocarbons varies from sample to sample with a general increase of saturated compared to aromatic hydrocarbons with increasing depth except for the two lowermost samples which show lower values for the saturated hydrocarbons. The gas chromatograms of the saturated hydrocarbon fractions vary considerably from sample to sample. The uppermost sample, which has a very high abundance of extractable hydrocarbons is found to have a large abundance of heavy n-alkanes typical for immature terrestrial kerogen. This is in

contradiction to the rich abundance of extractable hydrocarbons. The next three samples, down to 2380 m, show a larger influx of medium weight hydrocarbons indicating a mixture of terrestrial and amorphous kerogen, while the n-alkane distribution for the samples from 2395-2425 m indicates mainly an amorphous source.

Zone G: Three samples from this zone were analysed and all found to have a poor abundance of extractable hydrocarbons. This is in good agreement with the organic carbon normalized results. The hydrocarbon composition of the two uppermost samples are similar to those in the zone above while the sample from 2775-90 m has a large proportion of aromatic hydrocarbons. The weight of the hydrocarbon fractions from this sample is, low though an error in weighing could have caused this change from the other samples from the zone. The gas chromatogram of the saturated hydrocarbon fraction of the sample from 2455-70 m shows the typical bimodal distribution found in other samples higher up in the well, which is believed to be due to an input from reworked material. The next two samples have distributions typical for moderate mature to mature hydrocarbons from mainly terrestrial material with a moderate CPI value.

The pristane/nC_{17} value varies for the two samples, and is lower for the sample from 2530 m than for the sample from 2775-90 m indicating some amorphous material in this sample.

Zone H: Fifteen samples from this zone were extracted. The samples down to 3500 m have a poor or poor/fair abundance of extractable hydrocarbons while the core samples from 3522-3525 m have a good abundance of extractable hydrocarbons. The cutting samples from 2540-55 m have a fair abundance of extractable hydrocarbons. When the organic carbon normalized results are examined, the results from the core samples are more similar to the cutting samples, and are mainly found to have a good extractability. The core sample from 3522.5 m has a far higher extractability. It is believed that the reason to the variation between the cutting samples and the core chips is due to the cutting samples representing a larger distance and therefore small variations will be normalized. A large number of the examined samples gave small quantities of saturated and aromatic fractions, and it is believed that the large variation seen in the hydrocarbon composition is mainly due to uncertainties in the weighing. The gas chromatograms of the saturated hydrocarbon fractions vary from sample to sample. The sample

from 3030-45 m shows a large input of high molecular weight hydrocarbons indicating mainly mature terrestrial material, while the next sample shows a unimodal distribution with maximum at nC_{20}. There is a set of unusual peaks in the high molecular range. These could be due to a mud additive. The gas chromatogram of the sample from 3165-80 m is similar to the one from 3030-45 m while the sample from 3270-85 m shows a unimodal distribution with maximum at nC_{20}. The CPI is high for this sample which indicates mainly terrestrial material, moderate mature to mature. In the next sample, the influx of high, molecular weight n-alkanes is higher indicating more terrestrial material than in the sample from 3270-85 m. The next samples, 3345-60 m and 3375-90 m are similar to the sample from 3270-85 m, while the sample from 3420-35 m shows a smaller influx of heavy n-alkanes. The sample from 3465-80 m shows a bimodal distribution with CPI almost 1.0. This is encountered higher up in the well and is probably due to extensive reworking. The gas chromatograms of the saturated hydrocarbon fractions from the shale samples vary only slightly. They all show a large input of high molecular n-alkanes, with low CPI value indicating an input from mainly mature terrestrial material. The lowermost analysed sample, 3540-55 m shows a unimodal distribution with slightly less pronounced high molecular weight n-alkanes.

Examination in Reflected Light

Eightysix samples were analysed in reflected light. Below, each sample is described, and other information from the analyses is given together with the vitrinite reflectance data.

Sample K 4215, 760-75 m: Shale, Ro = 0.43 (8).
The sample contains bitumen blebs, otherwise a low content of organic material. Mostly particles of inertinite and reworked material. Only a trace of vitrinite wispy particles. UV light shows a yellow and yellow/ orange fluorescence from spores, some reworked, and a low exinite content.

Sample K 4224, 895-910 m: Shale, Ro = 0.34 (20).
The sample contains bitumen wisps and locallised staining. Otherwise a low content of inertinite and reworked particles. Only a trace of vitrinite wispy particles. UV light shows a yellow and yellow/orange fluorescence from spores and a moderate exinite content.

Sample K 4231, 1000-1015 m: Shale and carbonate, Ro = 0.39 (15).
The sample contains bitumen wisps, otherwise a low organic content, mainly inertinite and reworked particles. Only a trace of vitrinite wisps and wispy particles. UV light shows a yellow/orange fluorescence from spores and a low exinite content.

Sample K 4237, 1090-1105 m: Shale and carbonate, Ro = 0.37 (13).
The sample contains bitumen wisps and blebs, otherwise a low to moderate content of gnarled inertinite and reworked particles. Only a trace of poor vitrinite particles. UV light shows a yellow/orange fluorescence from spores and a low to moderate exinite content.

Sample K 4245, 1210-25 m: Shale, Ro = 0.33 (9).
The sample contains occasional small bitumen wisps and a low to moderate content of gnarled inertinite and reworked particles. Occasional vitrinite wisps and wispy particles. UV light shows a yellow/orange and light orange fluorescence from spores together with a low to moderate exinite content.

Sample K 4257, 1345-60 m: Shale and carbonate, Ro = 0.43 (2).
The sample has a low organic content with small bitumen wisps and particles of inertinite and reworked material. A couple of vitrinite wisps were recorded. UV light shows a yellow/orange fluorescence from spores and carbonate together with a low exinite content.

Sample K 4259, 1375-90 m: Mixed lithologies, Ro = 0.40 (19) and
Ro = 1.24 (1).
The sample has a low organic content with some bitumen staining and argillite lithologies. Particles of inertinite and reworked material, mostly in shale. A few tenuous vitrinite wisps are recorded. UV light shows a light orange fluorescence from spores and carbonates together with a low exinite content.

Sample K 4260, 1390-1405 m: Shale and subordinate Carbonate,
Ro = 0.45 (18) and Ro = 0.76 (2).
The sample shows overall strong bitumen staining, with a moderate content of small particles of vitrinite and inertinite which is mostly reworked. Differentiation of true and reworked particles is difficult. UV light shows a light orange fluorescence from spores and only a trace of exinite.

Sample K 4262, 1420-35 m: Shale, Ro = 0.58 (7).
The sample shows a variable light bitumen staining, otherwise a moderate content of, mostly reworked, inertinite and vitrinite particles. There are a few possible true vitrinite wispy particles. UV light shows no fluorescence and no exinite content.

Sample K 4265, 1465-80 m: Mixed lithologies, Ro = 0.46 (20).
The sample has a low organic content. Phytoclasts are located mostly in heavily stained shale. Particles of reworked material and inertinite are dominant. A few tenuous wisps and particles of vitrinite are recorded. UV light shows a yellow/orange and light orange fluorescence from spores and a trace of exinite.

Sample K 4430, 1525-40 m: Shale and carbonate, Ro = 0.56 (3).
The sample contains some bitumen staining, otherwise a moderate content of small, gnarled particles of reworked material and inertinite. Three particles of possibly true vitrinite are located. UV light shows a light orange fluorescence from spores and a trace of exinite.

Sample K 4432, 1555-70 m: Shale, Carbonate and traces of coal,
Ro = 0.40 (21).
The sample shows a light overall bitumen staining, and a moderate organic content. There are a few coal cuttings. In the shale, inertinite and reworked particles are dominant, but there are some good vitrinite wisps which are of a similar Ro value to the coal. UV light shows a light orange fluorescence from spores seen in a few cuttings; exinite content is low.

Sample K 4435, 1600-15 m: Shale and carbonate, Ro = 0.35 (20).
Some of the cuttings in the sample are saturated with bitumen, otherwise a low/moderate content, mostly of gnarled inertinite and reworked particles. A few coal fragments and vitrinite wispy particles are recorded. UV light shows a yellow to light orange fluorescence from spores and carbonate together with a low to moderate exinite content.

Sample K 4436, 1615-1630 m: Limestone and shale, Ro = 0.38 (7) and
Ro = 0.64 (1).
The sample shows a low organic content with light bitumen staining, mostly in the shale. There are a few particles of inertinite and reworked material,

with a trace of vitrinite and coal particles. UV light shows a strong carbonate fluorescence, and light orange fluorescence from spores, and only a trace amount of exinite.

Sample K 4439, 1660-75 m: Shale and carbonate, Ro = 0.45 (20).
This sample has a moderate organic content with bitumen wisps and localised staining. Inertinite and reworked material is dominant, and there are some reasonable vitrinite particles. UV light shows a light orange fluorescence from spores, hydrocarbon specks, carbonate and a low exinite content.

Core samples from the above zone. (K 5220-5223).

Sample K 5220, 1661.75 m: Shale, Ro = 0.48 (12).
The sample has bitumen wisps and light staining, and a low organic content. There are particles of inertinite and exinite but only traces of poor vitrinite wisps. UV light shows a light orange fluorescence from spores and a moderate exinite content.

Sample K 5221, 1664.00 m: Shale, Ro = 0.41 (21).
The sample shows a low organic content with overall bitumen and wisps. Otherwise, it has a few inertinite particles and occasional vitrinite wispy particles. UV light shows a light orange fluorescence from spores and a moderate exinite content.

Sample K 5222, 1666.70 m: Shale, Ro = 0.41 (22).
The sample shows a low organic content with bitumen wisps and light staining. It has a few vitrinite wisps and wispy particles and about an equal proportion of inertinite. UV light shows a light orange fluorescence from spores and hydrocarbon specks, and it has a moderate exinite content.

Sample K 5223, 1667.85 m: Shale, Ro = 0.38 (20).
The sample shows bitumen wisps and light staining, otherwise a low content of inertinite particles and vitrinite wisps and wispy particles. UV light shows a light orange fluorescence from spores and a moderate to rich exinite content.

Sample K 4440, 1675-90 m: Shale, Ro = 0.40 (21).
The sample has a moderate organic content and shows overall moderate bitumen staining. There is moderate amount of inertinite particles and good vitrinite wisps and stringers. UV light shows a light orange fluorescence from spores and a moderate exinite content.

Sample K 4441, 1690-1705 m: Shale, Ro = 0.43 (20).
The sample shows overall bitumen staining and wisps, otherwise a moderate content of good vitrinite wisps and particles with inertinite particles dominant. UV light shows a light to mid. orange fluorescence from spores and hydrocarbon specks, and a moderate exinite content.

Sample K 4442, 1705-20 m: Shale and siltstone, Ro = 0.42 (21).
The sample shows overall bitumen staining, which is strong is parts. Otherwise, there is a moderate content of inertinite and reworked particles and quite a good content of vitrinite. UV light shows a light orange fluorescence from spores and hydrocarbon specks, and a moderate exinite content.

Sample K 4911, 1720-35 m: Shale, Ro = 0.44 (21).
The sample shows strong bitumen staining, and a moderate content of inertinite and reworked particles with subordinate wisps of good vitrinite. UV light shows a light orange fluorescence from spores and a moderate exinite content.

Sample K 4911, 1720-35 m: Shale, Ro = 0.45 (20).
The sample is rich in bitumen wisps and staining. There is a low content of vitrinite with only traces of inertinite. UV light shows a light orange fluorescence from spores, and a moderate exinite content.

Sample K 4912, 1735-50 m: Shale, Ro = 0.39 (21).
The sample shows overall bitumen staining and a moderate content of inertinite and reworked particles with subordinate vitrinite wisps and wispy particles. UV light shows a light orange fluorescence from spores with a low to moderate exinite content.

Sample K 4913, 1750-65 m: Shale, Ro = 0.42 (21).
The sample shows heavy overall bitumen staining, and a low to moderate content of vitrinite wisps and coal fragments with equal proportions of inertinite and reworked particles. UV light shows a yellow-orange fluorescence from spores and a moderate exinite content.

Sample K 4913, 1750-65 m: Shale, Ro = 0.46 (21).
The sample shows quite heavy bitumen staining and bitumen wisps. Otherwise, there is a low to moderate content of wispy particles of vitrinite and wisps with subordinate inertinite. UV light shows a light orange fluorescence from spores and hydrocarbons, and a moderate to rich exinite content.

Sample K 4916, 1795-1810 m: Shale, Ro = 0.45 (20).
The sample shows heavy overall bitumen staining, and a moderate content of vitrinite wisps and particles with about an equal proportion of inertinite and reworked particles. UV light shows a yellow-orange and light orange fluorescence from spores with a moderate exinite content.

Sample K 4916, 1795-1810 m: Shale, Ro = 0.42 (21).
The sample shows heavy bitumen staining and wisps. Otherwise a trace only of phytoclasts, and vitrinite particles dominant with less inertinite. UV light shows a light orange fluorescence from spores and a moderate exinite content.

Sample K 4917, 1810-25 m: Shale, Ro = 0.42 (22).
The sample shows heavy bitumen staining, and good vitrinite wisps and wispy particles with subordinate inertinite and reworked particles. UV light shows a yellow-orange and light orange fluorescence from spores and a low to moderate exinite content.

Sample K 4919, 1840-55 m: Shale, Ro = 0.44 (22).
The sample shows overall bitumen staining, otherwise a low content of vitrinite wisps and particles with about equal proportion of inertinite and reworked particles. UV light shows a light orange fluorescence from spores and a low to moderate exinite content.

Sample K 4919, 1840-55 m: Shale, Ro = 0.42 (20).
The sample shows strong bitumen staining and wisps. There is a low content of vitrinite wisps and particles, with only a trace of inertinite. UV light shows a light to mid. orange fluorescence from spores, with a moderate exinite content.

Sample K 4921, 1870-85 m: Shale (calcareous), Ro = 0.42 (22).
The sample shows overall bitumen staining, otherwise, a low content of

vitrinite wisps and particles with a subordinate amount of inertinite and reworked particles. UV light shows a light orange fluorescence from spores and a moderate exinite content.

Sample K 4923, 1900-15 m: Shale and carbonate, Ro = 0.45 (21).
The sample shows overall bitumen staining and a low content of good vitrinite particles and wisps with subordinate inertinite and reworked particles. UV light shows a light orange fluorescence from spores and a moderate exinite content.

Sample K 4923, 1900-15 m: Shale, Ro = 0.44 (21).
The sample shows heavy bitumen staining and wisps, otherwise it has a moderate content of vitrinite particles and wisps with subordinate inertinite. UV light shows a light to mid. orange fluorescence from spores and a moderate exinite content.

Sample K 4993, 1915-30 m: Drilling mud and shale, Ro = 0.42 (19) and Ro = 0.71 (1).
The sample shows heavy bitumen staining and a low content of inertinite particles with poor vitrinite wispy particles. UV light shows a light to mid. orange fluorescence from spores and a moderate to rich exinite content.

Sample K 4994, 1930-45 m: Shale, Ro = 0.45 (21).
The sample shows overall strong bitumen staining and is moderate to rich in good vitrinite wisps and wispy particles with an equal proportion of inertinite. UV light shows a light to mid. orange fluorescence from algae, spores and hydrocarbon specks, and a moderate content of exinite.

Sample K 4995, 1945-60 m: Shale, Ro = 0.45 (20).
The sample shows heavy overall bitumen staining, otherwise it has a moderate to rich content of inertinite particles with a good proportion of vitrinite wisps. UV light shows a light orange fluorescence from spores, and a moderate exinite content.

Sample K 4996, 1960-75 m: Drilling mud and shale, Ro = 0.41 (21).
The sample shows heavy bitumen staining and wisps, otherwise it contains a moderate content of inertinite particles with subordinate vitrinite wisps. UV light shows a light to mid. orange fluorescence from spores and a low exinite content.

Sample K 4997, 1975-90 m: Shale, Ro = 0.49 (20).
The sample shows strong overall bitumen staining and is otherwise rich in good vitrinite stringers, wisps and particles with an equal proportion of inertinite. UV light shows rather dull, light orange fluorescence from spores and a moderate exinite content.

Sample K 4998, 1990-2005 m: Shale, Ro = 0.45 (22).
The sample shows heavy overall bitumen staining and is moderate to rich in particles of inertinite and reworked material with subordinate vitrinite particles and wispy particles. UV light shows a light orange fluorescence from spores and a low to moderate exinite content.

Sample K 4999, 2005-20 m: Shale, Ro = 0.50 (20).
The sample shows strong overall bitumen staining and a rich content of inertinite and reworked particles with a good proportion of vitrinite wisps and particles. UV light shows a light orange fluorescence from spores and a low to moderate exinite content.

Sample K 5000, 2020-35 m: Shale, Ro = 0.47 (21).
The sample shows a strong overall bitumen staining and is rich in small vitrinite wisps with a high content of low Ro reworked particles, with subordinate inertinite. UV light shows a yellow-orange to light orange fluorescence from spores with a moderate exinite content.

Core sample (K 5224).

Sample K 5224, 2043 m: Sandy siltstone, Ro = 0.50 (20).
The sample shows bitumen wisps and light staining, with a low content of poor vitrinite wispy particles and an equal proportion of inertinite. UV light shows a mid. orange fluorescence from spores and a low exinite content.

Sample K 5005, 2080-95 m: Mixed lithologies (shale and limestone).
Ro = 0.44 (20).
The organic material is virtually restricted to the shale, and the shale cuttings show overall bitumen staining with a moderate content of inertinite particles and vitrinite wisps. UV light shows a mid. orange fluorescence from spores and hydrocarbon specks, and the exinite content is low.

Sample K 5010, 2155-70 m: Sandstone, shale and traces of coal, Ro = 0.49 (21).

The sandstone is barren of organic material, and the coal traces consist of clean vitrinite. The shale shows a strong bitumen staining with some vitrinite particles and wisps. UV light shows a light orange fluorescence from spores, algae and hydrocarbon specks, and the exinite content is low.

Sample K 5013, 2200-15 m: Sandstone, shale and coal, Ro = 0.50 (21). The sandstone and shale show moderate bitumen staining and the shale has some good vitrinite stringers and particles. The coal is vitrinitic. UV light shows a light to mid. orange fluorescence from spores and algae, and a low to moderate exinite content.

Sample K 5014, 2215-30 m: Shale, sandstone and coal, Ro = 0.62 (21). The reflectivity was restricted to the coal cuttings. The sample shows a moderate organic content, but there is generally not much organic material apart from the coal. The lithologies and reflectances are rather variable, with a lot of clean vitrinite cuttings. UV light shows a light orange fluorescence from spores and hydrocarbon specks, and the exinite content is low.

Sample K 5015, 2230-45 m: Shale, sandstone and coal, Ro = 0.58 (21). The sample shows overall bitumen staining, especially in the shale. The coal fragments are inertinite rich with little vitrinite. UV light shows a mid. orange fluoresence from spores and hydrocarbon specks and a low to moderate exinite content.

Sample 216, 2239 m: Coal, carbargilite and shale, Ro = 0.48 (2) and Ro = 0.79 (7).

The sample is rich in organic matter, which is almost wholly inertinite with a few spores and only traces of vitrinite. Only a few reflectivity values were obtained despite the presence of coal fragments. UV light shows a deep orange fluorescence from spores and hydrocarbon specks, and there are only traces of exinite.

Sample K 5016, 2245-60 m: Sandstone, shale and traces of coal, Ro = 0.54 (21).

The sample contains little organic material which is restricted to a few coal fragments. The shale cuttings show a good content of inertinite fragments

and vitrinite wisps. UV light shows a light to mid. orange fluorescence from spores and hydrocarbon specks, and the exinite content is low.

Sample K 5019, 2290-2305 m: Sandstone, shale and coal, Ro = 0.61 (20).
The sample contains little organic material which is restricted to the coal fragments. The coal consists largely of inertinite with vitrinite wisps. A few shale cuttings also contain good vitrinite wisps. UV light shows a light to mid. orange fluorescence from spores and algae and a low exinite content.

Sample K 5020, 2305-20 m: Shale and coal, Ro = 0.63 (20).
Higher reflecting values were obtained on the coal cuttings. The coal is inertinite rich with only a few vitrinite wisps and is heavily brecciated. The shale shows heavy bitumen staining and is rich in vitrinite wisps with subordinate inertinite particles. UV light shows a light to mid. orange fluorescence from spores and a moderate to rich exinite content.

Sample K 5023, 2360-60 m: Mixed lithologies (shale, sandstone, carbonate and coal traces, Ro = 0.59 (21).
The sample shows that organic material is restricted to the shale and a few cuttings. The shale is heavily bitumen stained and has some good wisps and stringers of vitrinite with traces of inertinite. The coal is inertinite rich. UV light shows a light orange fluorescence from spores and carbonates and that only traces of exinite occur.

Sample K 5024, 2365-80 m: Mixed lithologies (sandstone, carbonate which is dominant, and shale some of which is red). Ro = 0.63 (22).
The sample shows a very mixed organic content. There are a few coal fragments which consist mostly of either inertinite or inertinite and spores, and a few vitrinite fragments. Vitrinite wisps are present in the heavily bitumen-stained shale. UV light shows a light to mid. orange fluorescence from spores and carbonate, and that only traces of exinite occur.

Sample K 5026, 2395-2410 m: Sandstone and subordinate shale, Ro = 0.42 (2) and Ro = 0.74 (15).
The reflectivity values of this sample are very variable. The sample shows a low organic content and is restricted to a few coal fragments and the shale cuttings. The shale is heavily bitumen stained with inertinite particles and vitrinite wisps. UV light shows a light orange fluorescence from carbonate and spores, and that only a trace of exinite is present.

Sample K 5027, 2410-25 m: Shale and sandstone, Ro = 0.57 (20).
The sample shows a moderate organic content and there is bitumen staining on the shale, with some inertinite particles and subordinate vitrinite wisps. There are also some loose particles of coal. UV light shows a light to mid. orange fluorescence from spores and a low to moderate exinite content.

Sample K 5029, 2440-55 m: Mixed shale and siltstone, Ro = 0.56 (21).
The sample shows overall bitumen staining in the shale cuttings, otherwise there is a moderate content of inertinite particles and subordinate good vitrinite wisps and stringers. UV light shows a light to mid. orange fluorescence from spores and a moderate to rich exinite content.

Sample K 5030, 2455-70 m: Sandstone, Ro = 0.66 (21).
The sample is barren of organic material apart from loose particles of coal which consist wholly of rather dirty vitrinite. UV light shows a light orange fluorescence from spores and carbonate and a low exinite content.

Sample K 5083, 2470-85 m: Mixed shale lithologies, Ro = 0.52 (23).
The sample shows a moderate organic content and variable bitumen staining. There are a few loose coal fragments which are vitrinitic; otherwise inertinite and reworked particles are dominant with a few good vitrinite wisps. UV light shows a mid. orange fluorescence from spores and a moderate to rich exinite content.

Sample 193, 2500 m: Siltstone, Ro = 0.47 (16) and Ro = 0.75 (4).
The sample shows a low organic content and it consists mostly of rather gnarled inertinite and reworked particles, with subordinate vitrinite wisps. There are a few coal particles with a higher Ro, with bitumen wisps and localised staining. UV light shows a mid. orange fluorescence from spores and a low to moderate exinite content.

Sample K 5088, 2545-60 m: Mixed shale and siltstone (Haematitic),
Ro = 0.57 (20).
The sample shows a moderate organic content consisting of small, gnarled particles of inertinite and reworked material, with subordinate vitrinite particles and wisps and localised bitumen wisps and staining. UV light shows a mid. to deep orange fluorescence from spores and hydrocarbon specks and a moderate to rich exinite content.

Sample K 186, 2616 m: Red shale, Ro = 0.94 (1).
The sample is a virtually barren shale with some phytoclasts pseudomorphs visible and one reworked coal particle which was measured in the mineral matrix. UV light shows no fluorescence and no exinite.

Sample 178, 2713 m: Shaly sandstone, Ro = 0.30 (1) and Ro = 0.49 (1).
The sample shows that only traces of organic material are present. There are areas of light bitumen staining and two small vitrinite particles. UV light shows no fluorescence and no exinite.

Sample 174, 2787 m: Shale, Ro = (NDP).
The sample has a low to moderate organic content with plentiful small particles of inertinite and reworked material, all very highly corroded. No vitrinite was found and therefore no reflectivity determination was possible. UV light shows no definite fluorescence and no exinite.

Sample 172, 2834 m: Red shale, Ro = 0.39 (1) and Ro = 1.14 (1).
The sample is virtually barren, with a few particles of bitumen, inertinite and vitrinite which are probably wholly reworked. One bitumen particle was measured and the lowest reflecting vitrinite particle, otherwise the rest have reflectivity values well above 1%. UV light shows no fluorescence and no exinite.

Sample 168, 2925 m: Silty sandstone, Ro = 0.61 (21).
The sample has a low organic content, with locallised bitumen staining, and few good vitrinite wisps with an equal proportion of inertinite. UV light shows a mid. orange fluorescence from spores and hydrocarbon specks and a low exinite content.

Sample K 5194, 2940-55 m: Shale, Ro = 0.55 (20).
The sample has a low to moderate organic content consisting mostly of inertinite and reworked particles plus some reasonable vitrinite wispy particles and locallised bitumen staining. UV light shows a mid. orange fluorescence from spores and hydrocarbon wisps, and a moderate content of exinite.

Sample 5197, 2985-3000 m: Shale, siltstone and sandstone, Ro = 0.56 (12)
and Ro = 0.86 (1).
The sample shows variable bitumen staining and has a low organic content, which consists mainly of inertinite and gnarled reworked particles with a

few vitrinite wisps and poor wispy particles. UV light shows a mid. to deep orange fluorescence from spores and hydrocarbon specks, and a low to moderate content of exinite.

Sample 5199, 3015-30 m: Siltstone and carbonate, Ro = 0.58 (11) and Ro = 0.86 (1).
The sample shows local bitumen staining and has a low organic content consisting mostly of inertinite and reworked particles. There are only traces of doubtful vitrinite wisps which are rather corroded. UV light shows a mid. orange fluorescence from spores and hydrocarbon specks, and a low to moderate exinite content.

Sample K 162, 3043 m: Siltstone, Ro = 0.62 (20).
The sample has a low organic content and consists of about an equal proportion of vitrinite and inertinite with occasional bitumen wisps. UV light shows a mid. orange fluorescence from spores and a moderate exinite content.

Sample 5202, 3060-3075 m: Mixed shale lithologies, Ro = 0.54 (20) and Ro = 0.81 (1).
The sample has a low organic content consisting mostly of inertinite and reworked particles. There are a few vitrinite wisps and wispy particles and a locallised bitumen staining. UV light shows a light orange fluorescence from spores and hydrocarbon specks and a moderate exinite content.

Sample 159, 3097 m: Shaly sandstone, NDP.

The sample consists of traces of bitumen wisps and the occasional particle of inertinite. UV light shows a mid. orange fluorescence from hydrocarbon specks and no exinite.

Sample K 5207, 3135-50 m: Shale and siltstone, Ro = 0.61 (20).
The sample has a low organic content which is restricted to a few cuttings. Inertinite and reworked particles are dominant but there are a few bitumen and vitrinite wisps. There is some oxidation of the organic material. UV light shows a mid. orange fluorescence from spores and hydrocarbon specks and a moderate to rich exinite content.

Sample 5210, 3180-95 m: Mixed shale lithologies, Ro = 0.48 (21).
The sample has a low to moderate organic content with many barren cuttings.

Other cuttings are rich in inertinite and reworked particles with subordinate vitrinite wispy particles, and a strong bitumen staining. UV light shows a light to mid. orange fluorescence from spores and hydrocarbon specks and a low exinite content.

Sample 151, 3212 m: Sandstone, Ro = 0.64 (20).
The sample has a low organic content consisting of a few particles of inertinite and some good vitrinite wisps and particles. UV light shows a mid. orange fluorescence from hydrocarbon specks and no exinite.

Sample K 5215, 3255-70 m: Mixed shale lithologies, Ro = 0.57 (21).
The sample has a low to moderate organic content with inertinite and reworked particles dominant. There are a few vitrinite and bitumen wisps, however, differentiation between true and reworked particles is difficult. UV light shows a mid. orange fluorescence from spores and a moderate to rich exinite content.

Sample K 5218, 3300-15 m: Mixed shale lithologies and carbonate,
Ro = 0.58 (23).
The sample is very variable having a low overall organic content. Inertinite and reworked particles are dominant with a few wisps of rather poor vitrinite accompanied by bitumen staining. UV light shows a mid. orange fluorescence from spores and hydrocarbon specks and a low to moderate exinite content.

Sample K 5225, 3330-45 m: Shale, Ro = 0.64 (20).
The sample has a moderate organic content with some good vitrinite wisps and wispy particles, but inertinite and reworked material is dominant. There are also some bitumen wisps. UV light shows a mid. orange fluorescence from spores and a moderate to rich exinite content.

Sample K 141, 3387 m: Shale, Ro = 0.59 (20).
The sample has a moderate organic content with inertinite and reworked particles dominant. There are some vitrinite wisps and wispy particles with a variable bitumen staining. UV light shows a mid. to deep orange fluorescence from spores and a moderate to rich exinite content.

Sample K 5231, 3420-35 m: Shale, Ro = 0.56 (20) and Ro = 0,85 (1).
The sample has a moderate organic content with gnarled inertinite and re-

worked particles dominant. There are a few good wispy particles of vitrinite. UV light shows a deep orange fluorescence from spores and a low to moderate exinite content.

Sample K 132, 3472 m: Shale, Ro = 0.58 (18).
The sample has a low to moderate organic content consisting of gnarled particles of vitrinite and inertinite with some subordinate poor vitrinite particles and bitumen wisps. UV light shows a mid - to deep fluorescence from spores and a trace of exinite.

Sample K 125, 3515.5 m: Silty shale, Ro = 0.59 (20).
The sample has a low to moderate organic content and consists of some good vitrinite wisps and rather gnarled particles and about an equal proportion of inertinite. There is some bitumen staining. UV light shows a mid-orange fluorescence from spores and hydrocarbon specks and a trace of exinite.

Core samples (K 5242 and K 5246).

Sample K 5242, 3521.9 m: Shale, Ro = 0.69 (22).
The sample shows bitumen wisps and staining, otherwise, there is a low content of vitrinite wisps and particles with subordinate inertinite. UV light shows a mid-orange to deep orange fluorescence from spores and a low to moderate exinite content.

Sample K 5246, 3525.5 m: Siltstone with pyrite masses, Ro = 0.59 (22).
The sample shows plentiful bitumen wisps and moderate staining, and a moderate content of inertinite particles with subordinate vitrinite particles and wisps. UV light shows a mid-orange to deep orange fluorescence from spores and a low to moderate exinite content.

Sample K 121, 3570 m: Shale, Ro = 0.65 (22).
The sample has a low to moderate organic content with inertinite and reworked particles dominant. There are a few vitrinite wisps and wispy particles of very variable reflectivities. There are some wisps of bitumen present. UV light shows a mid-orange fluorescence from spores and hydrocarbon specks and a low exinite content.

Examination in transmitted light

Visual Kerogen Analysis

The interval between 760 m and 3570 m has been evaluated on the basis of the kerogen concentrates from more than 80 samples. There is a dense coverage by sidewall cores, as well as conventional cores, and where possible cuttings samples were substituted by core samples from the same level. Results based on cuttings largely compared with those based on cores of the same interval, but generally show less changes in facies. This feature was clearly seen especially for the interval between 1900 m and 2478 m.

From the kerogen composition this well may roughly be subdivided into 4 intervals: 775 m to 1475 m - a marine event; 1475 m to 2460 m - a marine to deltaic event; 2478 m to 2850 m - a marine interval which mostly is poor in organic material; 2850 m to 3510 m - a marine to deltaic interval, probably nonmarine at certain levels.

Further subdivision of these intervals is possible if the changes in maturation level are considered. Changes in colour occur within three of the four main intervals. The well seems immature to moderate mature above 2239 m. From 2239 m to 3201 m the organic material is on top of or just entering the oil window, and from 3240 m to 3570 m it is of oil window maturity.

Considering the stage of maturity, the organic remains of this well show surprisingly slow reactions when chemically oxidized in the laboratory.

Samples 760 m swc and 775 m swc: Terrestrial material is dominant or equally important to the amorphous material. The residues are well dispersed and the terrestrial remains include mainly woody and reworked woody/coaly material.
Colour index: 1+/2-.

Samples 890 m swc to 1475 m swc: Most residues were fully dominated by amorphous material that often was recorded as aggregates. Terrestrial material counts for about 20% of the residues and consists mainly of indeterminated herbaceous material and woody, often reworked, coaly material. The palynomorphs are generally well preserved. Reworked material is increased below 1225 m.

Colour index: 1+/2- in the upper part, 2-/2 in the lower part. The break in coalification between 1100 m and 1225 m may suggest a change in lithology or a break in sedimentation in this interval. There is also a change in the amount of organic material, small organic residues above, larger below 1100 m.

Samples 1475 m swc to 2460 m swc: The residues of this interval contained 50% or a dominant part of material derived from a land vegetation. The marine influence is stronger above 2024 m swc than it is below, but generally seems to have been changing. The composition of the terrestrial material is rather variable, and any of the following categories: indeterminated finely dispersed herbaceous material, cuticular material including pollen and spores, or woody and reworked woody material, may be dominant. The preservation is also shifting from strongly sapropelized samples to such that are oxidized and reworked. The true marine sapropel may be difficult to distinguish in sapropelized samples because the finely dispersed material is sticking together in aggregates.

We would characterize the interval as one where the organic remains are under strong control by the lithology. The conditions probably changed between a quiet basin with strong terrestrial influence interrupted by intervals of more marine conditions or by intervals of higher water energy and reworking, nearly barren in organic material. The strongest terrestrial influence was recorded below 2046 m c, and this interval would be evaluated as more gas prone.
Colour index: 2-/2 from 1475 m to 1790 m, 2-/2 or 2 from 1800 m to 2104 m, and 2 or 2/2+ from 2160 m to 2460 m.

Samples 2478 m to 2834 m swc: Amorphous material has been evaluated as dominant compared to terrestrial remains. However, most residues were small and probably were derived from rocks poor in organic material, the large amount The preservation varies from good to poor.
Colour index: 2. Higher indices were recorded for reworked material.

Samples 2959 m swc to 3300 m cu: Amorphous material counts for about 50% of most residues. The interval has been distinguished from that above on the basis of a relatively larger part of cuticles. Most residues were small, and probably were deposited fairly close to the land vegitation. The preservation varies from good to poor.
Colour index: 2, may be 2/2+ - a slight increase at 3219 s and below.

Samples 3337 m swc to 3570 m swc: The residues contained 50 to 75% of land derived plant material. The amount of cuticular fragments observed in most samples would indicate fairly close proximity to the land vegitation. The preservation changes between poor and fair, mostly because of the cavities formed due to pyrite crystals.

Rock-Eval Pyrolyses

A total of one hundred samples from the analysed sequence in this well were analysed on a Rock-Eval instrument. Below, the results are discussed zone by zone.

Zone A: Five samples from this zone were analysed, all showing a high oxygen index and low hydrogen index typical for kerogen type III. The petroleum potential is low for all these samples which are found to be immature.

Zone B: Ten samples from this zone were analysed and found to give results similar to the samples from zone A.

Zone C: Twentyfour samples from this zone were analysed. The samples in this zone have a markedly higher hydrogen potential than the samples from the two zones above, and this would indicate that the samples down to approximately 1800 m contain a mixture of kerogen type II and III, while the samples from 1800 m downwards have oxygen and hydrogen indices typical for kerogen type II. Some of the samples have somewhat high oxygen index. This may be due to CO_2 from the carbonate or from the air. This is a problem encountered at times in Rock-Eval pyrolyses. The petroleum index is fair for the samples down to approximately 1700 m and good or rich from 1700 m down to the base of the zone. The production index is low for all these samples showing that they have not given off any significant amount of hydrocarbons. This is in good agreement with the low maturity as seen by the T_{max} values.

Zone D: Three samples from this zone were analysed. The two cutting samples show similar results to these samples from zone C, while the core samples from 2043 m have a very low hydrogen index, indicating kerogen type III. This is in contradiction to the extraction results which indicated more amorphous material.

Zone E: No samples analysed.

Zone F: Ten samples from this zone vary considerably. The samples down to 2230 m have values similar to those from zone C, while the rest of the samples down to 2400 m have far lower hydrogen indices indicating an influx of more terrestrial material. The sample from the lower 50 m of the zone has a far higher hydrogen index. This coincide with a far higher abundance of organic carbon. This together with the low oxygen index indicate kerogen type II. The upper part of the zone has a rich /good petroleum potential, while the samples from 2350 - 2400 have a poor petroleum potential. The lowermost samples have again a rich petroleum potential. The zone is found to be immature with a low production index.

Zone G: Seven samples from this zone were analysed and most of the samples are found to have a moderate hydrogen index indicating a mixture of kerogen type II and III. The upper part of the zone has a rich petroleum potential while this drops to fair - poor towards the lower part of the zone. The S_1 peak and therby the production index increases sharply at approximately 2530 m. This could indicate either higher maturity or migrated hydrocarbons. The T_{max} values for these samples are far higher than for the zones above, and all the samples from this zone is found to be mature.

Zone H: Thirtyeight samples from this zone were analysed. The hydrogen indices vary throughout the zone, but are for the majority found to be rather low, indicating kerogen type III. The production index is low for most of these samples while the production index and the high T_{max} show the samples to be mature. The coal sample from 3450 m has very high hydrogen index.

CONCLUSION

In the interpretation of the various analyses, the maturity of the samples is mainly based on the vitrinite reflectance measurements, fluorescence of spores in UV light, colour of kerogen in transmitted light and the T_{max} values from the Rock-Eval pyrolyses. The richness of the samples is based on the light hydrocarbons abundance of organic carbon, abundance of extractable hydrocarbons and Rock-Eval pyrolyses while the source rock quality is based on the visual kerogen examination, the Rock-Eval pyrolyses and the gas chromatograms of the saturated hydrocarbon fraction.

Zone A: 700 - 1315 m: This zone consists mainly of claystone. The whole zone is found to be immature. Discrepancies are found between the visual kerogen examination and the Rock-Eval pyrolyses where the Rock-Eval pyrolyses shows the samples to be of kerogen type III, while the visual kerogen examination shows the samples mainly to contain amorphous looking kerogen. This is also found in samples from the North Sea, and it is believed that this is due to sapropelized terrestrial material. Based on this the whole zone is found to have a fair potential as a source rock for gas and oil.

Zone B: 1315 - 1660 m: Visual kerogen examination shows the type of kerogen to change to more terrestrial with increasing depth, and the lithological examination shows most samples to contain two types of claystone. The abundance of organic carbon, especially in the dark grey claystone is very high compared with the zone above. This mixture of claystones could either be due to cavings or interbedded claystone lamina and beds. The dark grey claystone has a rich potential as a source rock for gas while the grey silty claystone has a fair/good potential as a source rock for gas. The whole zone is found to be immature. The sandstone in the lower part of the zone does not show any evidence of containing migrated hydrocarbons.

Zone C: 1660 - 2005 m: The upper part of this zone contains a mixture of sandstone and claystone while the zone from 1700 downwards contains mainly claystone. The claystone is found to be immature increasing to moderate mature from approximately 2000 m. The visual kerogen examination shows this zone to contain mainly terrestrial kerogen while the Rock-Eval pyrolyses shows a high hydrogen index and low oxygen index typical for kerogen type II. All the samples have a rich extractability and the gas chromatograms show a large input of heavy n-alkanes. Based on this, the claystone in the zone is found to have a rich potential as a source rock for gas and heavy oil.

Zone D: 2005-2095 m: This zone is markedly different from the zone above both in lithology and in richness and typing of kerogen. Cavings give problems in the interpretation of the zone but based on the one analysed core sample, the zone is found to be immature with a good potential as a source rock for gas.

Zone E: 2080-2125 m: Mainly sandstone. No evidence for migrated hydrocarbons.

Zone F: 2125-2455 m: The upper part of this zone contains a mixture of claystone and sandstone and both light hydrocarbon data and extraction data indicate that this part contains free hydrocarbons. The claystone in this zone especially down to 2335 m has a very high abundance of extractable hydrocarbons. This part of the zone is found to have a rich potential as a source rock for gas an heavy oil. The sequence 2335 - 2400 m has a fair potential as a source rock for gas and heavy oil. The lower part of the zone again has a rich potential as a source rock for gas and heavy oil. The whole zone is found to be moderate mature.

Zone G: 2455 - 2850 m: This zone consists mainly of sandstone and shale of various colours. There is no evidence for migrated hydrocarbons in the sandstone and the shale is found to have a poor to fair potential as a source rock for oil and gas. The zone is found to be moderate mature.

Zone H: 2850 - 3574 m: The lithology in the upper part of this zone is similar to zone F while the lower 400 m of the zone contains a mixture of grey shale and very fine sandstone. The shale has very variable abundance of organic carbon. There is no definite evidence of migrated hydrocarbons in the sandstone.

The whole zone is found to be moderate mature to mature and the shale in the zone has a fair to good potential as a source rock for gas. The potential in some thin dark grey shale lenses is rich but on the whole the potential is estimated as good.

IKU

TABLE I a.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS IN HEADSPACE.

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4/nC4
K4211	700	O P E N		L I D .							
K4212	715	O P E N		L I D .							
K4213	730	O P E N		L I D .							
K4214	745	O P E N		L I D .							
K4215	760	14830	1488	1096	265	449	452	18128	3298	18.19	.59
K4216	775	13706	1357	1205	434	790	3308	17492	3786	21.64	.55
K4217	790	8736	928	904	345	612	2102	11525	2789	24.20	.56
K4218	805	2541	301	342	126	240	630	3550	1009	28.42	.53
K4219	820	4494	446	496	200	379	877	6015	1521	25.29	.53
K4220	835	5670	586	554	185	341	630	7336	1666	22.71	.54
K4221	850	8091	786	576	156	271	434	9880	1789	18.11	.58
K4222	865	7051	652	337	78	156	167	8274	1223	14.78	.50
K4223	880	18005	1203	435	89	129	168	19861	1856	9.34	.69
K4224	895	2226	224	111	20	28	28	2609	383	14.68	.71
K4225	910	8919	611	211	46	53	74	9840	921	9.36	.87
K4226	925	4312	319	181	41	50	49	4903	591	12.05	.82
K4227	940	9542	692	392	83	111	84	10820	1278	11.81	.75
K4228	955	3047	303	227	55	76	87	3708	661	17.83	.72
K4229	970	775	51	31	8	8	10	873	98	11.23	1.00
K4230	985	19816	1172	589	143	169	189	21889	2073	9.47	.85
K4231	1000	9376	501	188	48	45	90	10158	782	7.70	1.07
K4232	1015	4398	130	35	11	7	10	4581	183	3.99	1.57
K4233	1030	2146	71	21	4	3	4	2245	99	4.41	1.33
K4234	1045	10902	260	103	21	18	22	11304	402	3.56	1.17
K4235	1060	3499	147	55	12	12	17	3725	226	6.07	1.00

IKU

TABLE I a.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS IN HEADSPACE.

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4 / nC4
K4236	1075	3867	185	63	13	12	17	4140	273	6.59	1.08
K4237	1090	1220	488	155	29	25	3	1917	697	36.36	1.16
K4238	1105	5164	209	67	12	9	1	5461	297	5.44	1.33
K4239	1120	8666	388	134	26	25	35	9239	573	6.20	1.04
K4240	1135	5884	330	117	24	25	36	6380	496	7.77	.96
K4241	1150	3784	240	86	18	16	21	4144	360	8.69	1.13
K4242	1165	2836	186	73	15	13	20	3123	287	9.19	1.15
K4243	1180	1565	112	56	15	30	24	1778	213	11.98	.50
K4244	1195	1991	128	55	12	11	18	2197	206	9.38	1.09
K4245	1210	1331	118	55	14	14	31	1532	201	13.12	1.00
K4246	1225	2040	205	95	22	23	54	2385	345	14.47	.96
K4250	1240	2261	226	105	21	19	17	2632	371	14.10	1.11
K4251	1255	4033	318	338	280	186	27	5155	1122	21.77	1.51
K4252	1270	2592	148	108	96	71	8	3015	423	14.03	1.35
K4253	1285	2244	157	151	149	107	31	2808	564	20.09	1.39
K4254	1300	480	19	37	50	28	3	614	134	21.82	1.79
K4255	1315	1183	65	62	68	45	9	1423	240	16.87	1.51
K4256	1330	3189	102	156	168	111	65	3726	537	14.41	1.51
K4257	1345	O P E N		L I D .							
K4258	1360	2824	271	152	30	62	72	3339	515	15.42	.48
K4259	1375	8481	709	402	200	186	109	9978	1497	15.00	1.08
K4260	1390	5012	441	202	66	94	114	5815	803	13.81	.70
K4261	1405	2641	172	98	30	46	75	2987	346	11.58	.65
K4262	1420	3260	358	220	89	112	151	4039	779	19.29	.79
K4263	1435	8755	599	416	148	183	249	10101	1346	13.33	.81

IKU

TABLE I a.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS IN HEADSPACE.

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4/nC4
K4264	1450	2793	322	294	156	162	295	3727	934	25.06	.96
K4265	1465	2378	322	209	55	89	99	3053	675	22.11	.62
K4427	1480	6068	701	530	200	266	217	7765	1697	21.85	.75
K4428	1495	6730	790	416	129	183	146	8248	1518	18.40	.7
K4429	1510	2257	235	143	52	63	41	2750	493	17.93	.83
K4430	1525	1494	209	178	53	76	46	2010	516	25.67	.70
K4431	1540	27894	2422	486	78	79	28	30959	3065	9.90	.99
K4432	1555	6059	947	381	90	67	57	7544	1485	19.68	1.34
K4433	1570	5304	666	317	77	122	65	6486	1182	18.22	.63
K4434	1585	7433	756	221	44	58	37	8512	1079	12.68	.76
K4435	1600	7276	1084	476	82	123	69	9041	1765	19.52	.67
K4436	1615	1412	232	161	34	56	30	1895	483	25.49	.61
K4437	1630	5253	1399	875	211	250	134	7988	2735	34.24	.84
K4438	1645	4254	974	696	171	206	107	6301	2047	32.49	.83
K4439	1660	6948	1025	558	114	145	68	8790	1842	20.96	.79
K4440	1675	13928	2230	1223	243	243	70	17867	3939	22.05	1.00
K4441	1690	13901	2459	1497	339	489	243	18685	4784	25.60	.69
K4442	1705	13899	2553	1463	311	415	184	18641	4742	25.44	.75
K4911	1720	466	107	69	9	18	28	669	203	30.34	.50
K4912	1735	67148	12133	7217	1184	1523	1018	89205	22057	24.73	.78
K4913	1750	104778	19100	11986	1860	2553	1748	140277	35499	25.31	.73
K4914	1765	93878	16003	9434	1363	1979	1482	122657	28779	23.46	.69
K4915	1780	1893	219	107	15	17	12	2251	358	15.90	.88
K4916	1795	68976	16606	11492	1879	2446	178	101399	32423	31.98	.77
K4917	1810	15123	1984	1145	183	305	366	18740	3617	19.30	.60

IKU

TABLE I a.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS IN HEADSPACE.

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4 / nC4
K4918	1825	51835	6983	4047	535	921	610	64321	12486	19.41	.58
K4919	1840	36795	3790	1798	217	355	202	42955	6160	14.34	.61
K4920	1855	76481	10117	6894	937	1838	1230	96267	19786	20.55	.51
K4921	1870	23004	4062	3122	365	813	578	31366	8362	26.66	.45
K4922	1885	4896	1332	1524	208	539	474	8499	3603	42.39	.39
K4923	1900	48722	5611	4218	463	1202	826	60216	11494	19.09	.39
K4993	1915	11238	1572	1572	177	494	1498	15053	3815	25.34	.36
K4994	1930	53256	5900	4698	480	1307	807	65641	12385	18.87	.37
K4995	1945	25779	3158	2794	305	820	546	32856	7077	21.54	.37
K4996	1960	96253	7822	7916	503	1136	1004	113630	17377	15.29	.44
K4997	1975	9005	41022	3480	339	657	478	54503	45498	83.48	.52
K4998	1990	53692	6260	3440	384	714	619	64490	10798	16.74	.54
K4999	2005	10918	53076	4073	460	810	714	69337	58419	84.25	.57
K5000	2020	16479	1951	1229	173	362	713	20194	3715	18.40	.48
K5002	2035	1178	1701	1260	209	435	744	4783	3605	75.37	.48
K5003	2050	5387	856	492	61	117	118	6913	1526	22.07	.52
K5004	2065	58074	6596	3997	530	1250	8439	70447	12373	17.56	.42
K5005	2080	4205	592	364	49	94	271	5304	1099	20.72	.52
K5006	2095	1720	377	300	60	101	608	2558	838	32.76	.59
K5007	2110	672	456	139	28	47	125	1342	670	49.93	.60
K5008	2125	1716	221	142	26	47	207	2152	436	20.26	.55
K5009	2140	8228	737	387	76	118	370	9546	1318	13.81	.64
K5010	2155	70802	4626	1257	217	244	680	77146	6344	8.22	.89
K5011	2170	26119	2374	672	128	139	265	29432	3313	11.26	.92
K5012	2185	46627	2878	784	136	164	382	50589	3962	7.83	.83

IKU

TABLE I a.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS IN HEADSPACE.

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4/nC4
K5013	2200	39150	6527	1963	458	294	432	48392	9242	19.10	1.56
K5014	2215	47871	2333	658	115	92	155	51069	3198	6.26	1.25
K5015	2230	34298	3604	950	185	146	253	39183	4885	12.47	1.27
K5016	2245	21795	1165	317	70	55	215	23402	1607	6.87	1.1
K5017	2260	28987	1524	329	58	41	306	30939	1952	6.31	1.41
K5018	2275	82737	3299	865	158	94	131	87153	4416	5.07	1.68
K5019	2290	82584	2895	746	141	70	144	86436	3852	4.46	2.01
K5020	2305	21744	2146	350	51	19	4	24310	2566	10.56	2.68
K5021	2320	51007	6614	1296	200	84	200	59201	8194	13.84	2.38
K5022	2335	30745	953	257	43	29	104	32027	1282	4.00	1.48
K5023	2350	4349	286	98	15	14	17	4762	413	8.67	1.07
K5024	2365	2191	227	90	13	12	132	2533	342	13.50	1.08
K5025	2380	1510	176	73	10	13	22	1782	272	15.26	.77
K5026	2395	713	147	66	7	9	109	942	229	24.31	.78
K5027	2410	40275	2653	503	62	49	8	43542	3267	7.50	1.27
K5028	2425	26918	1100	287	39	30	111	28374	1456	5.13	1.30
K5029	2440	5764	595	126	17	13	15	6515	751	11.53	1.31
K5030	2455	60895	1497	364	44	40	126	62840	1945	3.10	1.10
K5083	2470	119	92	46	5	12	242	274	155	56.57	.42
K5084	2485	395	356	215	27	72	124	1065	670	62.91	.38
K5085	2500	952	595	348	44	89	228	2028	1076	53.06	.49
K5086	2515	441	359	297	38	98	260	1233	792	64.23	.39
K5087	2530	404	301	310	42	144	70	1201	797	66.36	.29
K5088	2545	70	57	39	4	11	38	181	111	61.33	.36
K5089	2560	147	91	82	11	38	84	369	222	60.16	.29

IKU

TABLE I a.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS IN HEADSPACE.

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4 / nC4
K5090	2575	290	328	361	53	177	40	1209	919	76.01	.30
K5091	2580	1974	429	187	20	62	132	2672	698	26.12	.32
K5092	2595	972	433	175	7	43	31	1630	658	40.37	.16
K5093	2610	84	65	34	11	10	106	204	120	58.82	1.10
K5094	2625	44	16	11	2	2	32	75	31	41.33	1.00
K5095	2640	255	133	64	3	13	54	468	213	45.51	.23
K5096	2655	13	44	16	11	21	20	105	92	87.62	.52
K5097	2670	171	29	13	2	2	68	217	46	21.20	1.00
K5098	2685	54	92	56	4	25	62	231	177	76.62	.16
K5099	2700	391	207	67	3	18	35	686	295	43.00	.17
K5100	2715	21	25	4	3	3	3	56	35	62.50	1.00
K5101	2730	23	21	3	2	2	7	51	28	54.90	1.00
K5102	2745	5155	877	173	11	36	7	6252	1097	17.55	.31
K5103	2760	560	348	123	10	35	161	1076	516	47.96	.29
K5104	2775	449	363	208	22	64	140	1106	657	59.40	.34
K5105	2790	1316	432	187	19	68	120	2022	706	34.92	.28
K5106	2805	1964	824	331	27	92	150	3238	1274	39.35	.29
K5107	2820	1211	431	190	20	73	128	1925	714	37.09	.27
K5108	2835	3784	549	166	14	38	53	4551	767	16.85	.37
K5109	2850	1508	460	208	18	59	87	2253	745	33.07	.31
K5110	2865	507	253	165	16	59	87	1000	493	49.30	.27
K5111	2880	374	248	171	22	69	230	884	510	57.69	.32
K5112	2895	88	26	16	3	3	19	136	48	35.29	1.00
K5113	2910	403	232	237	46	131	240	1049	646	61.58	.35
K5114	2925	229	222	237	34	114	312	836	607	72.61	.30

IKU

TABLE I a.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS IN HEADSPACE.

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4/nC4
K5194	2940	7494	651	321	51	97	217	8614	1120	13.00	.53
K5195	2955	52544	1023	425	46	74	138	54112	1568	2.90	.62
K5196	2970	3041	117	69	8	17	30	3252	211	6.49	.47
K5197	2985	1567	178	90	13	28	55	1876	309	16.47	.
K5198	3000	4187	186	103	17	26	51	4519	332	7.35	.65
K5199	3015	1571	201	73	13	21	77	1879	308	16.39	.62
K5200	3030	1840	211	102	20	30	76	2203	363	16.48	.67
K5201	3045	1176	137	75	14	24	83	1426	250	17.53	.58
K5202	3060	2485	145	95	16	29	113	2770	285	10.29	.55
K5203	3075	4277	276	114	21	29	80	4717	440	9.33	.72
K5204	3090	1942	110	52	8	13	51	2125	183	8.61	.62
K5205	3105	4871	168	83	15	20	68	5157	286	5.55	.75
K5206	3120	1977	166	78	11	16	66	2248	271	12.06	.69
K5207	3135	2370	177	85	13	17	65	2662	292	10.97	.76
K5208	3150	2663	117	75	11	17	62	2883	220	7.63	.65
K5209	3165	2028	175	145	19	31	64	2398	370	15.43	.61
K5210	3180	1219	79	61	9	16	25	1384	165	11.92	.56
K5211	3195	1919	171	198	74	85	357	2447	528	21.58	.87
K5212	3210	1747	250	159	26	40	109	2222	475	21.38	.65
K5213	3225	839	157	105	15	26	85	1142	303	26.53	.58
K5214	3240	806	170	146	25	41	81	1188	382	32.15	.61
K5215	3255	269	68	57	8	17	38	419	150	35.80	.47
K5216	3270	530	74	51	7	15	40	677	147	21.71	.47
K5217	3285	447	78	47	7	13	39	592	145	24.49	.54
K5218	3300	1037	65	36	4	8	15	1150	113	9.83	.50

IKU

TABLE I a.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS IN HEADSPACE.

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4 / nC4
K5219	3315	1017	69	28	4	7	37	1125	108	9.60	.57
K5225	3330	3513	201	59	5	17	144	3795	282	7.43	.29
K5226	3345	905	123	63	9	16	34	1116	211	18.91	.56
K5227	3360	1959	228	180	29	53	153	2449	490	20.01	.55
K5228	3375	1459	283	192	27	59	156	2020	561	27.77	.46
K5229	3390	930	220	187	30	63	125	1430	500	34.97	.48
K5230	3405	997	218	175	26	56	163	1472	475	32.27	.46
K5231	3420	619	100	71	9	23	46	822	203	24.70	.39
K5232	3435	596	137	100	10	25	51	868	272	31.34	.40
K5233	3450	566	182	148	14	36	108	946	380	40.17	.39
K5234	3465	5213	538	252	20	62	109	6085	872	14.33	.32
K5235	3480	3995	411	183	17	46	103	4652	657	14.12	.37
K5236	3495	11201	995	449	42	111	330	12798	1597	12.48	.38
K5237	3510	10303	1008	431	36	112	359	11890	1587	13.35	.32
K5238	3525	3829	639	435	50	135	250	5088	1259	24.74	.37
K5239	3540	5513	918	850	125	340	893	7746	2233	28.83	.37
K5240	3555	5692	679	457	54	143	430	7025	1333	18.98	.38
K5241	3570	1506	261	229	28	84	306	2108	602	28.56	.33

IKU

TABLE I b.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS IN CUTTINGS.

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4 / nC4
K4211	700	O P E N		L I D .							
K4212	715	O P E N		L I D .							
K4213	730	111	18	121	99	145	332	494	383	77.53	.68
K4214	745	163	103	689	479	889	1967	2323	2160	92.98	.!
K4215	760	80	39	348	301	724	1173	1492	1412	94.64	.42
K4216	775	156	80	608	587	1544	7024	2975	2819	94.76	.38
K4217	790	156	48	257	263	705	5336	1429	1273	89.08	.37
K4218	805	38	9	69	95	251	4997	462	424	91.77	.38
K4219	820	49	13	70	72	209	1890	413	364	88.14	.34
K4220	835	37	17	96	100	290	1860	540	503	93.15	.34
K4221	850	55	24	142	132	373	2249	726	671	92.42	.35
K4222	865	28	16	90	64	170	962	368	340	92.39	.38
K4223	880	66	33	153	97	216	697	565	499	88.32	.45
K4224	895	47	55	251	108	223	423	684	637	93.13	.48
K4225	910	64	59	188	107	170	438	588	524	89.12	.63
K4226	925	40	32	145	80	137	303	434	394	90.78	.58
K4227	940	67	53	303	189	404	632	1016	949	93.41	.47
K4228	955	40	38	210	125	261	507	674	634	94.07	.48
K4229	970	15	19	88	46	89	171	257	242	94.16	.52
K4230	985	80	79	344	182	370	1039	1055	975	92.42	.49
K4231	1000	62	47	177	93	144	383	523	461	88.15	.65
K4232	1015	36	28	94	52	67	208	277	241	87.00	.78
K4233	1030	32	25	89	44	59	109	249	217	87.15	.75
K4234	1045	36	31	72	29	38	61	206	170	82.52	.76
K4235	1060	37	49	160	72	107	179	425	388	91.29	.67

IKU

TABLE I b.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS IN CUTTINGS.

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4 / nC4
K4236	1075	41	54	170	78	107	189	450	409	90.89	.73
K4237	1090	42	30	93	42	52	114	259	217	83.78	.81
K4238	1105	54	64	170	67	73	112	428	374	87.38	.92
K4239	1120	37	48	133	52	57	116	327	290	88.69	.91
K4240	1135	2	2	5	2	2	3	13	11	84.62	1.00
K4241	1150	17	29	90	39	50	344	225	208	92.44	.78
K4242	1165	17	26	83	35	43	64	204	187	91.67	.81
K4243	1180	16	16	57	28	41	125	158	142	89.87	.68
K4244	1195	9	10	28	14	19	40	80	71	88.75	.74
K4245	1210	37	36	117	55	76	180	321	284	88.47	.72
K4246	1225	62	59	180	81	103	890	485	423	87.22	.79
K4250	1240	28	35	132	63	86	132	344	316	91.86	.73
K4251	1255	77	175	556	231	302	385	1341	1264	94.26	.76
K4252	1270	31	57	164	72	104	127	428	397	92.76	.69
K4253	1285	45	66	225	102	148	166	586	541	92.32	.69
K4254	1300	11	21	63	28	43	43	166	155	93.37	.65
K4255	1315	13	25	87	43	75	68	243	230	94.65	.57
K4256	1330	33	23	98	52	117	97	323	290	89.78	.44
K4257	1345	89	24	153	100	257	243	623	534	85.71	.39
K4258	1360	94	48	237	119	296	273	794	700	88.16	.40
K4259	1375	136	233	752	278	716	582	2115	1979	93.57	.39
K4260	1390	225	532	1428	475	1177	941	3837	3612	94.14	.40
K4261	1405	219	318	953	345	909	861	2744	2525	92.02	.38
K4262	1420	689	988	2970	1077	2824	2585	8548	7859	91.94	.38
K4263	1435	326	789	2221	760	1929	1647	6025	5699	94.59	.39

IKU

TABLE I b.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS IN CUTTINGS.

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4/nC4
K4264	1450	382	275	1089	415	1178	1482	3339	2957	88.56	.35
K4265	1465	208	334	960	364	954	918	2820	2612	92.62	.38
K4427	1480	275	60	317	152	369	213	1173	898	76.56	.41
K4428	1495	802	94	361	172	394	423	1823	1021	56.01	.4
K4429	1510	314	62	226	105	267	293	974	660	67.76	.39
K4430	1525	215	29	220	121	319	203	904	689	76.22	.38
K4431	1540	1114	2718	1836	413	733	321	6814	5700	83.65	.56
K4432	1555	262	950	1174	335	554	274	3275	3013	92.00	.60
K4433	1570	284	569	753	228	402	214	2236	1952	87.30	.57
K4434	1585	274	953	993	270	435	178	2925	2651	90.63	.62
K4435	1600	541	1709	2097	445	941	495	5733	5192	90.56	.47
K4436	1615	455	657	979	233	531	347	2855	2400	84.06	.44
K4437	1630	463	148	341	130	255	207	1337	874	65.37	.51
K4438	1645	448	148	631	259	514	378	2000	1552	77.60	.50
K4439	1660	428	792	2356	788	1450	766	5814	5386	92.64	.54
K4440	1675	428	2392	6566	2011	3356	1724	14753	14325	97.10	.60
K4441	1690	520	3040	7806	2363	4135	2090	17864	17344	97.09	.57
K4442	1705	520	2305	5930	1962	3599	2198	14316	13796	96.37	.55
K4911	1720	3	3	3	1	2	1	12	9	75.00	.50
K4912	1735	47	25	24	5	7	5	108	61	56.48	.71
K4913	1750	1413	223	115	20	28	8	1799	386	21.46	.71
K4914	1765	81	37	13	3	5	5	139	58	41.73	.60
K4915	1780	26	28	8	3	3	1	68	42	61.76	1.00
K4916	1795	68	19	14	4	5	12	110	42	38.18	.80
K4917	1810	13	16	17	6	10	10	62	49	79.03	.60

IKU

TABLE I b.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS IN CUTTINGS.

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4 / nC4
K4918	1825	6	6	6	2	4	5	24	18	75.00	.50
K4919	1840	3	3	3	1	1	1	11	8	72.73	1.00
K4920	1855	11	11	10	4	8	3	44	33	75.00	.50
K4921	1870	2069	3499	6698	1337	2877	2141	16480	14411	87.45	.46
K4922	1885	8	16	5	1	2	1	32	24	75.00	.50
K4923	1900	7	15	13	1	4	1	40	33	82.50	.25
K4993	1915	2093	3230	7608	1070	4021	3361	18022	15929	88.39	.27
K4994	1930	11323	16612	23646	3245	9587	5728	64413	53090	82.42	.34
K4995	1945	524	651	1417	194	629	210	3415	2891	84.66	.31
K4996	1960	13589	10715	14885	1750	4758	2433	45697	32108	70.26	.37
K4997	1975	1933	1075	1084	116	263	133	4471	2538	56.77	.44
K4998	1990	111	89	113	13	28	24	354	243	68.64	.46
K4999	2005	29730	17093	14731	1619	2959	1257	66132	36402	55.04	.55
K5000	2020	18584	12211	10748	1176	2328	1014	45047	26463	58.75	.51
K5002	2035	4159	7138	9969	1281	2877	1861	25424	21265	83.64	.45
K5003	2050	4739	7506	10123	1343	3119	2221	26830	22091	82.34	.43
K5004	2065	9268	8133	11867	1759	4545	3019	35572	26304	73.95	.39
K5005	2080	3932	5232	7186	887	2257	1550	19494	15562	79.83	.39
K5006	2095	644	652	1060	140	491	835	2987	2343	78.44	.29
K5007	2110	640	507	956	139	474	1036	2716	2076	76.44	.29
K5008	2125	1024	443	774	121	394	1069	2756	1732	62.84	.31
K5009	2140	2490	922	908	150	426	1254	4896	2406	49.14	.35
K5010	2155	7670	3319	2234	367	670	656	14260	6590	46.21	.55
K5011	2170	7867	2101	1256	210	416	551	11850	3983	33.61	.50
K5012	2185	17138	5314	4102	689	1469	1270	28712	11574	40.31	.47

IKU

TABLE I b.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS IN CUTTINGS.

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4/nC4
K5013	2200	38379	14545	7039	1501	1188	536	62652	24273	38.74	1.26
K5014	2215	18800	4301	2655	492	832	604	27080	8280	30.58	.59
K5015	2230	31057	5410	2793	498	698	431	40456	9399	23.23	.71
K5016	2245	13895	3750	2024	372	570	759	20611	6716	32.58	.65
K5017	2260	12698	3084	1517	243	406	439	17948	5250	29.25	.60
K5018	2275	150612	35989	12598	1667	2117	2085	202983	52371	25.80	.79
K5019	2290	80688	32227	14329	2306	2068	1155	131618	50930	38.70	1.12
K5020	2305	623529	137881	30624	3764	1858	919	797656	174127	21.83	2.03
K5021	2320	150663	49599	16558	2439	1465	629	220724	70061	31.74	1.66
K5022	2335	45716	15810	7118	919	1432	1864	70995	25279	35.61	.64
K5023	2350	20053	10437	7064	979	1974	1924	40507	20454	50.49	.50
K5024	2365	13533	5062	3728	517	1168	2086	24008	10475	43.63	.44
K5025	2380	5151	4326	4135	594	1479	1653	15685	10534	67.16	.40
K5026	2395	10600	2989	2238	311	790	1679	16928	6328	37.38	.39
K5027	2410	42858	12506	5734	631	1273	1291	63002	20144	31.97	.50
K5028	2425	25202	8820	3662	341	850	1267	38875	13673	35.17	.40
K5029	2440	23079	9666	3941	448	870	943	38004	14925	39.27	.51
K5030	2455	60156	16620	6086	603	1278	1701	84743	24587	29.01	.47
K5083	2470	13412	1174	261	34	2	89	14883	1471	9.88	7.00
K5084	2485	6233	653	159	23	19	73	7087	854	12.05	1.21
K5085	2500	7472	552	122	19	15	748	8180	708	8.66	1.27
K5086	2515	1819	245	98	15	17	17	2194	375	17.09	.88
K5087	2530	4991	332	108	23	26	163	5480	489	8.92	.88
K5088	2545	9437	412	114	18	21	18	10002	565	5.65	.86
K5089	2560	1738	204	45	5	6	65	1998	260	13.01	.83

IKU

TABLE I b.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS IN CUTTINGS.

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4/nC4
K5090	2575	2547	219	48	35	10	135	2859	312	10.91	3.50
K5091	2580	6532	255	37	4	2	12	6830	298	4.36	2.00
K5092	2595	38645	875	152	7	20	58	39699	1054	2.65	.35
K5093	2610	921	83	35	6	3	19	1048	127	12.12	2.00
K5094	2625	544	59	21	2	2	163	628	84	13.38	1.00
K5095	2640	365	37	10	2	2	16	416	51	12.26	1.00
K5096	2655	710	36	13	4	4	263	767	57	7.43	1.00
K5097	2670	660	59	13	1	1	11	734	74	10.08	1.00
K5098	2685	1968	126	21	4	4	211	2123	155	7.30	1.00
K5099	2700	2040	184	23	1	1	12	2249	209	9.29	1.00
K5100	2715	1271	116	21	3	3	137	1414	143	10.11	1.00
K5101	2730	856	77	18	2	2	15	955	99	10.37	1.00
K5102	2745	42045	1208	94	7	8	13	43362	1317	3.04	.87
K5103	2760	6882	238	32	2	2	21	7156	274	3.83	1.00
K5104	2775	5319	318	67	7	9	17	5720	401	7.01	.78
K5105	2790	9854	233	56	6	9	24	10158	304	2.99	.67
K5106	2805	9249	338	61	5	7	15	9660	411	4.25	.71
K5107	2820	8113	139	40	5	8	81	8305	192	2.31	.63
K5108	2835	3560	127	27	4	1	10	3719	159	4.28	4.00
K5109	2850	1592	266	68	6	11	79	1943	351	18.06	.55
K5110	2865	1541	58	18	1	4	6	1622	81	4.99	.25
K5111	2880	1451	78	41	6	13	92	1589	138	8.68	.46
K5112	2895	517	58	37	6	12	10	630	113	17.94	.50
K5113	2910	258	36	30	6	14	109	344	86	25.00	.43
K5114	2925	468	48	31	3	8	11	558	90	16.13	.38

IKU

TABLE I b.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS IN CUTTINGS.

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4/nC4
K5194	2940	230	419	539	80	265	887	1533	1303	85.00	.30
K5195	2955	7694	1040	530	50	188	484	9502	1808	19.03	.27
K5196	2970	394	293	386	47	193	403	1313	919	69.99	.24
K5197	2985	1401	410	346	42	157	315	2356	955	40.53	.1
K5198	3000	1061	294	259	38	127	379	1779	718	40.36	.30
K5199	3015	3028	1551	1572	207	660	1184	7018	3990	56.85	.31
K5200	3030	1870	587	725	107	399	940	3688	1818	49.30	.27
K5201	3045	161	107	122	11	72	87	473	312	65.96	.15
K5202	3060	92	48	32	25	25	19	222	130	58.56	1.00
K5203	3075	92	47	33	26	27	21	225	133	59.11	.96
K5204	3090	93	46	31	25	25	22	220	127	57.73	1.00
K5205	3105	5580	811	383	59	178	622	7011	1431	20.41	.33
K5206	3120	306	48	32	25	25	19	436	130	29.82	1.00
K5207	3135	7776	589	312	39	106	266	8822	1046	11.86	.37
K5208	3150	1026	767	767	87	310	615	2957	1931	65.30	.28
K5209	3165	787	453	446	53	182	333	1921	1134	59.03	.29
K5210	3180	2462	129	517	123	595	1071	3826	1364	35.65	.21
K5211	3195	881	938	1454	213	796	2131	4282	3401	79.43	.27
K5212	3210	857	456	1269	349	715	1866	3646	2789	76.49	.49
K5213	3225	646	801	1260	154	583	1150	3444	2798	81.24	.26
K5214	3240	132	241	633	64	251	658	1321	1189	90.01	.25
K5215	3255	842	2117	2013	117	1308	3851	6397	5555	86.84	.09
K5216	3270	165	93	123	17	65	157	463	298	64.36	.26
K5217	3285	3308	3219	4190	562	2282	4351	13561	10253	75.61	.25
K5218	3300	154	44	7	5	5	21	215	61	28.37	1.00

IKU

TABLE I b.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS IN CUTTINGS.

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4 / nC4
K5219	3315	784	1192	1437	192	718	1553	4323	3539	81.86	.27
K5225	3330	6921	1608	1096	144	473	841	10242	3321	32.43	.30
K5226	3345	253	261	341	46	166	270	1067	814	76.29	.28
K5227	3360	530	892	1079	130	461	862	3092	2562	82.86	.28
K5228	3375	99	66	51	45	45	311	306	207	67.65	1.00
K5229	3390	830	1579	3081	447	1768	4040	7705	6875	89.23	.25
K5230	3405	710	1139	2523	384	1544	3836	6300	5590	88.73	.25
K5231	3420	99	66	57	45	45	311	312	213	68.27	1.00
K5232	3435	769	1913	4113	536	1820	3053	9151	8382	91.60	.29
K5233	3450	304	756	1830	238	883	1548	4011	3707	92.42	.27
K5234	3465	20664	15502	12436	827	3863	4434	53292	32628	61.22	.21
K5235	3480	8536	10051	11512	1004	4593	8385	35696	27160	76.09	.22
K5236	3495	667	421	395	31	143	230	1657	990	59.75	.22
K5237	3510	14826	17825	17973	1306	6321	7639	58251	43425	74.55	.21
K5238	3525	90	277	558	60	270	558	1255	1165	92.83	.22
K5239	3540	1253	3062	5726	594	2955	4774	13590	12337	90.78	.20
K5240	3555	1096	2900	5403	556	2755	4533	12710	11614	91.38	.20
K5241	3570	667	1062	2662	357	1609	3426	6357	5690	89.51	.22

IKU

TABLE I c.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS (Ia + Ib).

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4/nC4
K4211	700	O P E N		L I D .							
K4212	715	O P E N		L I D .							
K4213	730	O P E N		L I D .							
K4214	745	O P E N		L I D .							
K4215	760	14910	1527	1444	566	1173	1625	19620	4710	24.01	.48
K4216	775	13862	1437	1813	1021	2334	10332	20467	6605	32.27	.44
K4217	790	8892	976	1161	608	1317	7438	12954	4062	31.36	.46
K4218	805	2579	310	411	221	491	5627	4012	1433	35.72	.45
K4219	820	4543	459	566	272	588	2767	6428	1885	29.32	.46
K4220	835	5707	603	650	285	631	2490	7876	2169	27.54	.45
K4221	850	8146	810	718	288	644	2683	10606	2460	23.19	.45
K4222	865	7079	668	427	142	326	1129	8642	1563	18.09	.44
K4223	880	18071	1236	588	186	345	865	20426	2355	11.53	.54
K4224	895	2273	279	362	128	251	451	3293	1020	30.97	.51
K4225	910	8983	670	399	153	223	512	10428	1445	13.86	.69
K4226	925	4352	351	326	121	187	352	5337	985	18.46	.65
K4227	940	9609	745	695	272	515	716	11836	2227	18.82	.53
K4228	955	3087	341	437	180	337	594	4382	1295	29.55	.53
K4229	970	790	70	119	54	97	181	1130	340	30.09	.56
K4230	985	19896	1251	933	325	539	1228	22944	3048	13.28	.60
K4231	1000	9438	548	365	141	189	473	10681	1243	11.64	.75
K4232	1015	4434	158	129	63	74	218	4858	424	8.73	.85
K4233	1030	2178	96	110	48	62	113	2494	316	12.67	.77
K4234	1045	10938	291	175	50	56	83	11510	572	4.97	.89
K4235	1060	3536	196	215	84	119	196	4150	614	14.80	.71

IKU

TABLE I c.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS (Ia + Ib).

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4 / nC4
K4236	1075	3908	239	233	91	119	206	4590	682	14.86	.76
K4237	1090	1262	518	248	71	77	117	2176	914	42.00	.92
K4238	1105	5218	273	237	79	82	113	5889	671	11.39	.96
K4239	1120	8703	436	267	78	82	151	9566	863	9.02	.95
K4240	1135	5886	332	122	26	27	39	6393	507	7.93	.96
K4241	1150	3801	269	176	57	66	365	4369	568	13.00	.86
K4242	1165	2853	212	156	50	56	84	3327	474	14.25	.89
K4243	1180	1581	128	113	43	71	149	1936	355	18.34	.61
K4244	1195	2000	138	83	26	30	58	2277	277	12.17	.87
K4245	1210	1368	154	172	69	90	211	1853	485	26.17	.77
K4246	1225	2102	264	275	103	126	944	2870	768	26.76	.82
K4250	1240	2289	261	237	84	105	149	2976	687	23.08	.80
K4251	1255	4110	493	894	511	488	412	6496	2386	36.73	1.05
K4252	1270	2623	205	272	168	175	135	3443	820	23.82	.96
K4253	1285	2289	223	376	251	255	197	3394	1105	32.56	.98
K4254	1300	491	40	100	78	71	46	780	289	37.05	1.10
K4255	1315	1196	90	149	111	120	77	1666	470	28.21	.92
K4256	1330	3222	125	254	220	228	162	4049	827	20.42	.96
K4257	1345	O P E N		L I D .							
K4258	1360	2918	319	389	149	358	345	4133	1215	29.40	.42
K4259	1375	8617	942	1154	478	902	691	12093	3476	28.74	.53
K4260	1390	5237	973	1630	541	1271	1055	9652	4415	45.74	.43
K4261	1405	2860	490	1051	375	955	936	5731	2871	50.10	.39
K4262	1420	3949	1346	3190	1166	2936	2736	12587	8638	68.63	.40
K4263	1435	9081	1388	2637	908	2112	1896	16126	7045	43.69	.43

IKU

TABLE I c.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS (Ia + Ib).

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4 / nC4
K4264	1450	3175	597	1383	571	1340	1777	7066	3891	55.07	.43
K4265	1465	2586	656	1169	419	1043	1017	5873	3287	55.97	.40
K4427	1480	6343	761	847	352	635	430	8938	2595	29.03	.55
K4428	1495	7532	884	777	301	577	569	10071	2539	25.21	.5
K4429	1510	2571	297	369	157	330	334	3724	1153	30.96	.48
K4430	1525	1709	238	398	174	395	249	2914	1205	41.35	.44
K4431	1540	29008	5140	2322	491	812	349	37773	8765	23.20	.60
K4432	1555	6321	1897	1555	425	621	331	10819	4498	41.58	.68
K4433	1570	5588	1235	1070	305	524	279	8722	3134	35.93	.58
K4434	1585	7707	1709	1214	314	493	215	11437	3730	32.61	.64
K4435	1600	7817	2793	2573	527	1064	564	14774	6957	47.09	.50
K4436	1615	1867	889	1140	267	587	377	4750	2883	60.69	.45
K4437	1630	5716	1547	1216	341	505	341	9325	3609	38.70	.68
K4438	1645	4702	1122	1327	430	720	485	8301	3599	43.36	.60
K4439	1660	7376	1817	2914	902	1595	834	14604	7228	49.49	.57
K4440	1675	14356	4622	7789	2254	3599	1794	32620	18264	55.99	.63
K4441	1690	14421	5499	9303	2702	4624	2333	36549	22128	60.54	.58
K4442	1705	14419	4858	7393	2273	4014	2382	32957	18538	56.25	.57
K4911	1720	469	110	72	10	20	29	681	212	31.13	.50
K4912	1735	67195	12158	7241	1189	1530	1023	89313	22118	24.76	.78
K4913	1750	106191	19323	12101	1880	2581	1756	142076	35885	25.26	.73
K4914	1765	93959	16040	9447	1366	1984	1487	122796	28837	23.48	.69
K4915	1780	1919	247	115	18	20	13	2319	400	17.25	.90
K4916	1795	69044	16625	11506	1883	2451	190	101509	32465	31.98	.77
K4917	1810	15136	2000	1162	189	315	376	18802	3666	19.50	.60

IKU

TABLE I c.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS (Ia + Ib).

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4 / nC4
K4918	1825	51841	6989	4053	537	925	615	64345	12504	19.43	.58
K4919	1840	36798	3793	1801	218	356	203	42966	6168	14.36	.61
K4920	1855	76492	10128	6904	941	1846	1233	96311	19819	20.58	.51
K4921	1870	25073	7561	9820	1702	3690	2719	47846	22773	47.60	.46
K4922	1885	4904	1348	1529	209	541	475	8531	3627	42.52	.39
K4923	1900	48729	5626	4231	464	1206	827	60256	11527	19.13	.38
K4993	1915	13331	4802	9180	1247	4515	4859	33075	19744	59.69	.28
K4994	1930	64579	22512	28344	3725	10894	6535	130054	65475	50.34	.34
K4995	1945	26303	3809	4211	499	1449	756	36271	9968	27.48	.34
K4996	1960	109842	18537	22801	2253	5894	3437	159327	49485	31.06	.38
K4997	1975	10938	42097	4564	455	920	611	58974	48036	81.45	.49
K4998	1990	53803	6349	3553	397	742	643	64844	11041	17.03	.54
K4999	2005	40648	70169	18804	2079	3769	1971	135469	94821	69.99	.55
K5000	2020	35063	14162	11977	1349	2690	1727	65241	30178	46.26	.50
K5002	2035	5337	8839	11229	1490	3312	2605	30207	24870	82.33	.45
K5003	2050	10126	8362	10615	1404	3236	2339	33743	23617	69.99	.43
K5004	2065	67342	14729	15864	2289	5795	11458	106019	38677	36.48	.39
K5005	2080	8137	5824	7550	936	2351	1821	24798	16661	67.19	.40
K5006	2095	2364	1029	1360	200	592	1443	5545	3181	57.37	.34
K5007	2110	1312	963	1095	167	521	1161	4058	2746	67.67	.32
K5008	2125	2740	664	916	147	441	1276	4908	2168	44.17	.33
K5009	2140	10718	1659	1295	226	544	1624	14442	3724	25.79	.42
K5010	2155	78472	7945	3491	584	914	1336	91406	12934	14.15	.64
K5011	2170	33986	4475	1928	338	555	816	41282	7296	17.67	.61
K5012	2185	63765	8192	4886	825	1633	1652	79301	15536	19.59	.51

IKU

TABLE I c.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS (Ia + Ib).

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4 / nC4
K5013	2200	77529	21072	9002	1959	1482	968	111044	33515	30.18	1.32
K5014	2215	66671	6634	3313	607	924	759	78149	11478	14.69	.66
K5015	2230	65355	9014	3743	683	844	684	79639	14284	17.94	.81
K5016	2245	35690	4915	2341	442	625	974	44013	8323	18.91	.7
K5017	2260	41685	4608	1846	301	447	745	48887	7202	14.73	.67
K5018	2275	233349	39288	13463	1825	2211	2216	290136	56787	19.57	.83
K5019	2290	163272	35122	15075	2447	2138	1299	218054	54782	25.12	1.14
K5020	2305	645273	140027	30974	3815	1877	923	821966	176693	21.50	2.03
K5021	2320	201670	56213	17854	2639	1549	829	279925	78255	27.96	1.70
K5022	2335	76461	16763	7375	962	1461	1968	103022	26561	25.78	.66
K5023	2350	24402	10723	7162	994	1988	1941	45269	20867	46.10	.50
K5024	2365	15724	5289	3818	530	1180	2218	26541	10817	40.76	.45
K5025	2380	6661	4502	4208	604	1492	1675	17467	10806	61.87	.40
K5026	2395	11313	3136	2304	318	799	1788	17870	6557	36.69	.40
K5027	2410	83133	15159	6237	693	1322	1299	106544	23411	21.97	.52
K5028	2425	52120	9920	3949	380	880	1378	67249	15129	22.50	.43
K5029	2440	28843	10261	4067	465	883	958	44519	15676	35.21	.53
K5030	2455	121051	18117	6450	647	1318	1827	147583	26532	17.98	.49
K5083	2470	13531	1266	307	39	14	331	15157	1626	10.73	2.79
K5084	2485	6628	1009	374	50	91	197	8152	1524	18.69	.55
K5085	2500	8424	1147	470	63	104	976	10208	1784	17.48	.61
K5086	2515	2260	604	395	53	115	277	3427	1167	34.05	.46
K5087	2530	5395	633	418	65	170	233	6681	1286	19.25	.38
K5088	2545	9507	469	153	22	32	56	10183	676	6.64	.69
K5089	2560	1885	295	127	16	44	149	2367	482	20.36	.36

IKU

TABLE I c.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS (Ia + Ib).

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4 / nC4
K5090	2575	2837	547	409	88	187	175	4068	1231	30.26	.47
K5091	2580	8506	684	224	24	64	144	9502	996	10.48	.38
K5092	2595	39617	1308	327	14	63	89	41329	1712	4.14	.22
K5093	2610	1005	148	69	17	13	125	1252	247	19.73	1.31
K5094	2625	588	75	32	4	4	195	703	115	16.36	1.00
K5095	2640	620	170	74	5	15	70	884	264	29.86	.33
K5096	2655	723	80	29	15	25	283	872	149	17.09	.60
K5097	2670	831	88	26	3	3	79	951	120	12.62	1.00
K5098	2685	2022	218	77	8	29	273	2354	332	14.10	.28
K5099	2700	2431	391	90	4	19	47	2935	504	17.17	.21
K5100	2715	1292	141	25	6	6	140	1470	178	12.11	1.00
K5101	2730	879	98	21	4	4	22	1006	127	12.62	1.00
K5102	2745	47200	2085	267	18	44	20	49614	2414	4.87	.41
K5103	2760	7442	586	155	12	37	182	8232	790	9.60	.32
K5104	2775	5768	681	275	29	73	157	6826	1058	15.50	.40
K5105	2790	11170	665	243	25	77	144	12180	1010	8.29	.32
K5106	2805	11213	1162	392	32	99	165	12898	1685	13.06	.32
K5107	2820	9324	570	230	25	81	209	10230	906	8.86	.31
K5108	2835	7344	676	193	18	39	63	8270	926	11.20	.46
K5109	2850	3100	726	276	24	70	166	4196	1096	26.12	.34
K5110	2865	2048	311	183	17	63	93	2622	574	21.89	.27
K5111	2880	1825	326	212	28	82	322	2473	648	26.20	.34
K5112	2895	605	84	53	9	15	29	766	161	21.02	.60
K5113	2910	661	268	267	52	145	349	1393	732	52.55	.36
K5114	2925	697	270	268	37	122	323	1394	697	50.00	.30

IKU

TABLE I c.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS (Ia + Ib).

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4/nC4
K5194	2940	7724	1070	860	131	362	1104	10147	2423	23.88	.36
K5195	2955	60238	2063	955	96	262	622	63614	3376	5.31	.37
K5196	2970	3435	410	455	55	210	433	4565	1130	24.75	.26
K5197	2985	2968	588	436	55	185	370	4232	1264	29.87	.30
K5198	3000	5248	480	362	55	153	430	6298	1050	16.67	.36
K5199	3015	4599	1752	1645	220	681	1261	8897	4298	48.31	.32
K5200	3030	3710	798	827	127	429	1016	5891	2181	37.02	.30
K5201	3045	1337	244	197	25	96	170	1899	562	29.59	.26
K5202	3060	2577	193	127	41	54	132	2992	415	13.87	.76
K5203	3075	4369	323	147	47	56	101	4942	573	11.59	.84
K5204	3090	2035	156	83	33	38	73	2345	310	13.22	.87
K5205	3105	10451	979	466	74	198	690	12168	1717	14.11	.37
K5206	3120	2283	214	110	36	41	85	2684	401	14.94	.88
K5207	3135	10146	766	397	52	123	331	11484	1338	11.65	.42
K5208	3150	3689	884	842	98	327	677	5840	2151	36.83	.30
K5209	3165	2815	628	591	72	213	397	4319	1504	34.82	.34
K5210	3180	3681	208	578	132	611	1096	5210	1529	29.35	.22
K5211	3195	2800	1109	1652	287	881	2488	6729	3929	58.39	.33
K5212	3210	2604	706	1428	375	755	1975	5868	3264	55.62	.50
K5213	3225	1485	958	1365	169	609	1235	4586	3101	67.62	.28
K5214	3240	938	411	779	89	292	739	2509	1571	62.61	.30
K5215	3255	1111	2185	2070	125	1325	3889	6816	5705	83.70	.09
K5216	3270	695	167	174	24	80	197	1140	445	39.04	.30
K5217	3285	3755	3297	4237	569	2295	4390	14153	10398	73.47	.25
K5218	3300	1191	109	43	9	13	36	1365	174	12.75	.69

IKU

TABLE I c.

CONCENTRATION (ul Gas / kg Rock) OF C1 - C7 HYDROCARBONS (Ia + Ib).

IKU No.	DEPTH (m)	C1	C2	C3	iC4	nC4	C5+	SUM C1-C4	SUM C2-C4	WET-NESS (%)	iC4 / nC4
K5219	3315	1801	1261	1465	196	725	1590	5448	3647	66.94	.27
K5225	3330	10434	1809	1155	149	490	985	14037	3603	25.67	.30
K5226	3345	1158	384	404	55	182	304	2183	1025	46.95	.30
K5227	3360	2489	1120	1259	159	514	1015	5541	3052	55.08	.31
K5228	3375	1558	349	243	72	104	467	2326	768	33.02	.69
K5229	3390	1760	1799	3268	477	1831	4165	9135	7375	80.73	.26
K5230	3405	1707	1357	2698	410	1600	3999	7772	6065	78.04	.26
K5231	3420	718	166	128	54	68	357	1134	416	36.68	.79
K5232	3435	1365	2050	4213	546	1845	3104	10019	8654	86.38	.30
K5233	3450	870	938	1978	252	919	1656	4957	4087	82.45	.27
K5234	3465	25877	16040	12688	847	3925	4543	59377	33500	56.42	.22
K5235	3480	12531	10462	11695	1021	4639	8488	40348	27817	68.94	.22
K5236	3495	11868	1416	844	73	254	560	14455	2587	17.90	.29
K5237	3510	25129	18833	18404	1342	6433	7998	70141	45012	64.17	.21
K5238	3525	3919	916	993	110	405	808	6343	2424	38.22	.27
K5239	3540	6766	3980	6576	719	3295	5667	21336	14570	68.29	.22
K5240	3555	6788	3579	5860	610	2898	4963	19735	12947	65.60	.21
K5241	3570	2173	1323	2891	385	1693	3732	8465	6292	74.33	.23

IKU

TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-4211	700-15	0,79	95% Claystone, grey (slightly brownish), some lamination (white), light grey, some greenish. 5% Sand, angular to rounded, fine to very coarse.
K-4212	715-30	0,56	85% Claystone, grey, some light and dark, redbrown, green. 15% Sand/Clay-stone, mixed Clay and Calcite fragments (very fine - fine biogenic prismatic Calcite crystals from crushed shells), some glauconite, Sand partly as lenses/lamina, some clear Sand-grains. sm.am. Sand, as above.
K-4213	730-45	1,37 0,38	60% Claystone, grey (brownish), occasionally with Calcite fragments and Glauconite, some light green. 40% Sand/Clay-stone, as above, and with some ?volcanic clear glass/chert. sm.am. Pyrite.
4214	745-60	1,24	92% Claystone, grey to dark grey, some light green. 8% Sand/Claystone, as above. sm.am. ?Volcanic glass/Chert; obs green Chert.
K-4215	760-75	1,26	95% Claystone, grey 5% Clear Glass/Chert; coarse rounded Sand; Siderite, brown; Pyrite.

IKU

TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-4216	775-90	1,20	100% Claystone, grey. sm.am. Siderite, brown; Pyrite; clear ?Glass/Chert; coarse rounded Sand.
K-4217	790-805	1,08	92% Claystone, grey, some redbrown, green. 8% Clay/Sandstone, as above; Glauconite; ?Glass/Chert, clear; very fine Sand/ Silt-stone, glauconitic, pyritic, angular; Pyrite.
K-4218	805-20	0,95	100% Claystone, grey, some glauconitic. sm.am. Glauconite (abundant); Sand/Claystone, as above; light grey glauconitic Sand/Silt-stone; Siderite, yellowbrown, partly sucrosic and glauconitic; rounded very coarse/coarse Sand grains; ?clear Glass/Chert; Pyrite.
K-4219	820-35	1,19	95% Claystone, grey (obs lamina of light grey glauconitic Siltstone), slightly glauconitic, some light green & redbrown. 5% Glauconite. sm.am. Siderite, brown; subrounded - subangular, coarse Sand grains; Pyrite.
K-4220	835-50	1,10	100% Claystone, grey, partly silty and micromicaceous, some light grey, redbrown and green. sm.am. Glauconite; Siderite; Pyrite.

IKU

TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-4221	850-65	1,13	100% Claystone, grey (some light), obs white Silt-lamina, sligthly glauconitic, micromicaceous and silty. sm.am. Siderite; glauconitic Claystone/ Calcite fragments, with clear Sand grains; Glauconite.
K-4222	865-80	1,16	100% Claystone, as above, some redbrown. sm.am. Siderite, yellowbrown; Claystone/Calcite crystals, with some Glauconite and clear Sand.
K-4223	880-95	1,15	100% Claystone, some silty, grey, some dark grey and redbrown, obs greenish and light grey. sm.am. Clayey Sandstone with abundant Calcite crystals and some Glauconite; Siderite, hard, brownish; obs Chert.
K-4224	895-910	1,31	100% Claystone, as above.
K-4225	910-25	1,22	97% Claystone, silty, grey, some dark grey, some micromicaceous, some redbrown. 3% Siderite, yellowish brown, greyish, hard, partly sucrosic.
K-4226	925-40	1,17	100% Claystone, as above sm.am. Siderite; Sandstone/secondary Calcite; angular-rounded coarse Sand; Glauconite; Pyrite; Claystone with white Calcite crystals.

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TABLE NO.:II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-4227	940-55	1,07	100% Claystone, as above, some light green sm.am. Siderite; reddish brown Limestone; Glauconite.
K-4228	955-70	1,07	100% Claystone, as above sm.am. Siderite; redbrownish Sandstone/ Limestone, coarse crystalline.
K-4229	970-85	1,24	100% Claystone, silty, grey, some micromicaceous sm.am. Siderite.
K-4230	985-1000	1,31	95% Claystone, as above 5% Siderite, yellowbrown, tight, sucrosic.
K-4231	1000-15	1,31	85% Claystone, silty, grey, some micromicaceous, some redbrown, (occasionally glauconitic) & greenish-light grey 15% Siderite, greybrown - yellowbrown, hard, tight sm.am. grey Calcite; brownwhite Calcite fragments mixed with Glauconite.
K-4232	1015-30	0,56 0,54	88% Claystone, as above 12% Siderite, as above sm.am. Glauconite; coarse rounded Sand; Pyrite.
K-4233	1030-45	1,29	92% Claystone, as above 8% Siderite sm.am. brownish clear Calcite, columnar.

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TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-4234	1045-60	1,28	92% Claystone, as above, sometimes with white Calcite 8% Siderite, as above sm.am. Glauconite.
K-4235	1060-75	1,33	92% Claystone, as above 8% Siderite.
K-4236	1075-90	1,32	92% Claystone, silty, grey, some light green and redbrown. 8% Siderite, yellowbrown, tight/hard, sucrosic.
K-4237	1090-1105	1,34	93% Claystone, some silty, grey, slightly micromicaceous, some redbrown and greenish. 7% Siderite, hard-brittle, brown.
K-4238	1105-20	1,42	97% Claystone, as above 3% Siderite.
K-4239	1120-35	1,44	97% Claystone, as above 3% Siderite.
K-4240	1135-50	1,36	97% Claystone, as above 3% Siderite.
K-4241	1150-65	1,31	92% Claystone, grey, some redbrown and light green 8% Siderite.
K-4242	1165-80	1,37	95% Claystone, some silty, slightly micromicaceous, some redbrown (glauconitic sometimes) and light greenish grey/light green 5% Siderite, hard, yellowish brown.

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TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-4243	1180-95	1,34	95% Claystone, silty, grey 5% Siderite sm.am. Glauconite; Sandstone, fine, with Glauconite.
K-4244	1195-1210	1,43	97% Claystone, silty, grey 3% Siderite sm.am. Sandstone, light brown, very fine, with Glauconite; coarse/medium Glauconite; Pyrite.
K-4245	1210-25	1,44	95% Claystone, silty, grey, obs with Sand and Glauconite 5% Siderite obs. Sandstone, clear, glauconitic, medium/coarse.
K-4246	1225-40	1,41	95% Claystone, grey 5% Siderite; light grey Limestone sm.am. Glauconite, medium - coarse.
K-4250	1240-55	1,31	97% Claystone, silty, grey, some grading to dark grey, some micromicaceous. 3% Siderite, greybrown, hard, brittle.
K-4251	1255-70	1,72	100% Claystone, as above.
K-4252	1270-85	1,60	94% Claystone, as above 6% Siderite; some grey hard Calcite.
K-4253	1285-1300	1,49	93% Claystone, as above. 7% Siderite, light yellowgrey - yellowbrown sm.am. Sandstone, fine, light grey; grey brittle Limestone.

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TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-4254	1300-15	1,63	93% Claystone, silty, grey, grading to dark grey, some slickensided, some micromicaceous
			7% Siderite.
K-4255	1315-30	1,36	85% Claystone, as above
			5% Siderite
			10% Cement.
K-4256	1330-45	0,98	93% Claystone, as above
			7% Siderite.
K-4257	1345-60	0,88	85% Claystone, as above.
			15% Siderite, tight to sucrosic, hard to loose
			sm.am. Sand, medium, subrounded.
K-4258	1360-75	1,03	90% Claystone, as above
		0,48	10% Siderite
			sm.am. Sandstone, fine.
K-4259	1375-90	1,10	50% Claystone, grey, slightly micaceous.
		4,39	45% Claystone, dark grey (brownish), more shaly, micromicaceous
		2,06	bulk Claystone.
			5% Siderite, partly sandy, loose to hard, light yellowgrey to yellowbrown, tight to sucrosic.
K-4260	1390-1405	1,34	25% Claystone, grey
		4,47	75% Claystone, dark grey as above
		2,46	bulk Claystone.

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TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-4261	1405-20	1,30	43% Claystone, grey, silty, as above, some greengrey
		4,15	42% Claystone, dark grey, as above, slickensided
		1,89	bulk Claystone
		0,47	15% Siderite, loose to hard, as above
			sm.am. Silt/Sand-stone, browngrey and light grey;
K-4262	1420-35	0,92	50% Claystone, grey
		3,33	50% Claystone, dark grey
		2,44	bulk Claystone
K-4263	1435-50	3,62	60% Claystone, dark grey to black, as above, sm.am. browngrey
		1,09	25% Claystone, grey, as above, some greengrey, some micaceous browngrey
		2,52	bulk Claystone
			15% Siderite, sandy, light yellowgrey - yellowbrown, loose-hard
			sm.am. Sandstone, fine, browngrey, light grey.
K-4264	1450-65	5,02	50% Claystone, dark grey, as above
		1,17	20% Claystone, grey, as above
			15% Siderite, silty/sandy, as above
			15% Sand, fine, medium, angular/subangular, clear
			sm.am. Silt/Claystone, sandy, light grey; Calcite, white - brownish; Pyrite
K-4265	1465-80	0,96	75% Claystone, grey as above, some light grey sandy and calcareous
		4,05	15% Claystone, dark grey as above
		1,36	bulk Claystone

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TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
		0,38	10% Siderite, silty/sandy, as above
			sm.am. Sandstone, light grey, very fine -fine.
K-4427	1480-95		40% Sand, very fine to coarse, angular - subrounded, rounded, obs Glauconite
		0,78	43% Claystone, grey, as above
		1,54	7% Claystone, dark grey as above
		0,42	10% Siderite
K-4428	1495-1510		60% Sand, as above, some very coarse, some fine/very fine Sandstone
		0,46	25% Claystone, silty, grey, some light grey, obs green
		1,87	5% Claystone, dark grey, as above
			10% Siderite.
K-4429	1510-25		50% Sand, as above
		0,47	28% Claystone, grey, as above
		2,35	7% Claystone, dark grey - black
			15% Siderite, silty/sandy
			sm.am. Coal.
K-4430	1525-40	1,06	73% Claystone, grey, dark grey (7%)
			7% Sand.
		0,40	20% Siderite, sandy.
K-4431	1540-55	0,90	83% Claystone, silty, grey, obs green
		3,12	15% Claystone, dark grey to black
			7% Claystone, greenish and brownish light grey
			10% Siderite; white Calcite; fine Sandstone; Coal; Sand.

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TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-4432	1555-70	1,25	30% Claystone, silty, grey
		0,30	60% Claystone, greenish and brownish light grey
		0,39	10% Siderite.
K-4433	1570-85	1,71	60% Claystone, grey and dark grey, variably silty, some micaceous
		0,53	10% Claystone, greenish and brownish light grey
			10% Siderite, silty, yellowish light grey, brown
			20% Sandstone, very fine - fine and fine to coarse Sand, angular, clear.
K-4434	1585-1600	1,55	80% Claystone, as above
			10% Siderite, as above
			5% Sand and Sandstone
			5% Claystone, greenish light grey, brownish.
K-4435	1600-15	1,10	57% Claystone, grey grading to micaceous and sandy Siltstone, brownish dark grey (5%), some browngrey and redbrown
			25% Sandstone/Sand, fine-coarse, angular light, obs Coal-lenses
			5% Claystone, greenish and some brownish light grey
			5% Coal
			8% Siderite
			sm.am. ?Salt, white; Limestone, white, light grey.

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TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-4436	1615-30		65% Sand/Sandstone, fine to very coarse
		0,56	20% Claystone to Siltstone, as above
			15% Siderite, light yellowbrown, calcareous
			sm.am. Coal; white ?Salt.
K-4437	1630-45		65% Sandstone, fine to medium
			15% Claystone, silty, partly sandy and micaceous (Siltstone), grey, dark grey, browngrey Clay/Siltstone
			20% Siderite, calcareous.
			Sm.am. Siltstone, light grey, Sandy, micaceous; ?Salt.
K-4438	1645-60		75% Sandstone, as above
			25% Siderite, as above
		1,71	10% Claystone, as above.
K-4439	1660-75	1,78	70% Claystone, silty and partly sandy and micaceous, grey, greenish, some light green, greybrown (silty, micaceous, fissile) (15%), dark grey (5%)
			10% Sandstone
			20% Siderite, variably calcareous
			sm.am. Sandy Siltstone, micaceous, dark grey; Coal; ?Salt; Silt, micaceous, brownish light grey.
K-4440	1675-90	3,10	50% Dark grey Silty Claystone
			50% Very fine to fine Sandstone.
K-4441	1690-1705	2,99	80% Dark grey silty Claystone
			20% Sandstone, as above.

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TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-4442	1705-20	2,37	95% Dark grey silty Claystone 5% Sandstone, as above.
K-4911	1720-35	3,79	100% Dark grey Claystone, occasionally calcareous.
K-4912	1735-50	3,62	95% Claystone, as above 5% Sandstone, as above
K-4913	1750-65	4,08	100% Dark Claystone, as above, glauconitic.
K-4914	1765-80	4,52	100% Claystone, as above
K-4915	1780-95	5,17	100% Dark Claystone, as above.
K-4916	1795-1810	4,57	100% Dark Claystone, as above.
K-4917	1810-25	5,03	100% Dark Claystone, as above, glauconitic.
K-4918	1825-40	3,77	80% Claystone, as above 20% light green grey calcitic Claystone
K-4919	1840-55	4,69	100% Claystone, as above.
K-4920	1855-70	5,12	100% Dark grey Claystone.
K-4921	1870-85	4,84	75% Dark grey Claystone, as above 25% Cement Sm.am. Coal fragments.
K-4922	1885-1900	4,94	85% Claystone, as above 15% Cement sm.am. Coal.

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TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-4923	1900-1915	5,38	100% Claystone, as above.
K-4993	1915-30	5,43	100% Claystone, as above Sample dominated by Cement
K-4994	1930-45	6,76	100% Claystone, as above.
K-4995	1945-60	7,53	100% Claystone, as above.
K-4996	1960-75	9,71	100% Claystone, as above.
K-4997	1975-90	10,06	100% Claystone, as above.
K-4998	1990-2005	10,01	100% Claystone, as above.
K-4999	2005-20	11,07	100% Claystone, as above.
K-5000	2020-35	9,79 0,60	90% Claystone, as above 10% Light grey yellow Limestone.
K-5002	2035-50	11,57 0,64	80% Claystone, as above 20% Limestone, grading to calcareous silty/sandy Sandstone.
K-5003	2050-65	8,56 0,59	20% Claystone, as above 10% Limestone to Sandstone, light grey to slightly brownish sm.am. Sandstone 70% Mud additive.
K-5005	2080-95	8,42	35% Claystone, as above 65% Very fine to fine Sandstone.

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TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-5006	2095-2010		85% Sandstone, as above 10% Limestone/Sandstone, as above 5% Claystone, as above.
K-5007	2110-2125		100% Sandstone, as above.
K-5008	2125-2140		100% Sandstone, as above.
K-5009	2140-2155		100% Sandstone, as above.
K-5010	2155-2170		100% Sandstone, as above.
K-5011	2170-85		100% Sandstone, as above.
K-5012	2185-2200		100% Sandstone, as above.
K-5013	2200-15	9,10	40% Claystone, as above 60% Sandstone, as above.
K-5014	2215-30	7,46	15% Claystone, as above 75% Very fine white Sandstone 10% Medium white Sandstone.
K-5015	2230-45	10,26	20% Claystone, as above 60% Sandstone, as above 20% Grey brown Siltstone.
K-5016	2245-60	7,63	10% Claystone, as above 70% Sandstone, as above 20% Dark Siltstone.
K-5018	2275-90	15,62	10% Dark grey Shale 70% Very fine Sandstone occasionally micaceous 20% Coal.

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TABLE NO.:II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-5019	2290-2305	19,00	20% Grey brown Shale 30% Dark silty Shale 40% Sandstone, as above 10% Coal.
K-5020	2305-20	24,40	80% Dark, black coaly Shale 10% Coal 10% Sandstone, as above.
K-5021	2320-35	14,80	40% Dark coaly Shale 40% Sandstone, as above 20% Coal.
K-5023	2350-65	0,80	20% Grey Shale 10% Dolomite 70% Sandstone.
K-5024	2365-80	0,48	20% Grey Shale 20% Dolomite 60% Sandstone.
K-5025	2380-95	0,84	30% Grey Shale 5% Dolomite 10% Coarse yellow Sandstone 55% Sandstone, as above.
K-5026	2395-2410	0,62	20% Grey Shale 20% grey Siltstone 60% Sandstone, as above.
K-5027	2410-25	10,55	35% Grey Shale 20% Light grey Siltstone 35% Sandstone, as above 10% Coal.

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TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-5028	2425-40	1,44	40% Shale, light to dark grey 60% Sandstone, as above occ. Pyrite.
K-5029	2440-55	8,81	10% Dark grey, silty shale 90% Sandstone, as above.
K-5030	2455-70	12,40	10% Shale, as above 90% Sandstone, as above occ. mottled Limestone fragments.
K-5083	2470-85	8,19 0,36	5% dark grey silty Shale 95% Sandstone, as above.
K-5084	2485-2500	6,05 0,26	5% Grey to dark brown silty Shale 95% Sandstone, as above.
K-5085	2500-15	0,99	25% grey Siltstone 75% Sandstone, as above.
K-5086	2515-30	0,84	80% grey Siltstone 20% Sandstone, as above.
K-5087	2530-45	1,04 0,25	80% Grey silty shale 20% Sandstone, as above.
K-5088	2545-60	2,58	15% Grey Shale 85% fine light Sandstone.
K-5089	2560-75	0,16	95% Sandstone, as above 5% grey silty shale.

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TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-5090	2575-80	0,28	5% Grey-brown Shale 95% Sandstone, as above.
K-5091	2580-95	0,28	5% Grey-brown Shale 95% Sandstone, as above.
K-5092	2595-2610	0,24	20% Brown-grey waxy Shale 50% Shale, grey, green, red 30% Sandstone, as above.
K-5093	2610-25	0,31	75% Red, grey, green Shale 25% Sandstone, as above.
K-5094	2625-40	0,31	90% Grey, green, red Shale 10% Sandstone, as above.
K-5095	2640-55	0,27	100% Grey, green, red Shale.
K-5096	2655-70	0,30	100% Shale, as above.
K-5097	2670-85	0,36	100% Shale as above, occasionally silty.
K-5098	2685-2700	0,38	100% Shale, as above.
K-5099	2700-15	0,64	100% Shale, as above and light grey.
K-5100	2715-30	0,41	80% Shale, as above 20% Sandstone.
K-5101	2730-45	0,47	90% Shale, as above 10% Sandstone, as above.

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TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-5102	2745-60	0,44	70% Shale, as above 20% Sandstone, as above 10% Coal.
K-5103	2760-75	0,44	70% Shale, as above 30% Sandstone, as above.
K-5104	2775-90	0,82	85% Shale, as above 15% Sandstone, as above.
K-5105	2790-2805	0,62 0,41	50% Shale, as above (40%) grey part of the Shale 50% Sandstone, as above.
K-5106	2805-20	0,12 0,62	65% Sandstone, as above 35% Shale (grey).
K-5107	2820-35	0,62	60% grey Shale 10% red, green, grey Shale 25% Sandstone, as above 5% Coal.
K-5108	2835-50	0,61	60% grey Shale 10% red Shale, as above 30% Sandstone, as above.
K-5109	2850-65	0,51	65% Grey Shale, as above 15% red Shale, as above 20% Sandstone, as above.
K-5110	2865-80	0,56	55% grey Shale, as above 10% red Shale, as above 35% Sandstone, as above.

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TABLE NO.:II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-5111	2880-95	0,39	60% Grey Shale, as above 5% red Shale, as above 30% Sandstone, as above 5% Limestone fragments.
K-5112	2895-2910	0,60	60% Grey, green Shale 5% red Shale, as above 30% Sandstone, as above 5% Limestone fragments.
K-5113	2910-25	0,93	60% Grey, green Shale 35% Sandstone, as above 5% light Limestone occasionally silty.
K-5114	2925-40	0,67	40% Grey, green Shale 20% red shale, as above 20% light grey Siltstone 20% Sandstone, as above.
K-5194	2940-55	1,59	50% Grey Silty Shale 20% red mottled silty Limestone 30% very fine light Sandstone.
K-5195	2955-70	1,03 0,22	25% Grey, silty Shale 15% red, partly yellow Siltstone 60% very fine light Sandstone sm.am. Coal fragments & Pyrite.
K-5196	2970-85	1,02 0,21	25% Grey silty Shale 15% red Shale as above 60% very fine light Sandstone.

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TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-5197	2985-3000	0,95	30% Grey, partly silty Shale
		0,23	20% red Shale, as above
			40% Sandstone, as above.
K-5198	3000-3015	0,88	35% Grey, silty Shale
		0,22	20% red Shale, as above
			45% Sandstone, as above.
K-5199	3015-30	4,21	10% Dark grey shale
		0,59	25% grey, partly silty Shale
		0,22	15% red Shale, as above
			50% Sandstone, as above.
K-5200	3030-45	7,21	5% Dark grey Shale
		0,69	25% grey partly silty Shale
		0,24	20% red often yellow and silty Shale
			50% very fine light Sandstone
			occ. Limestone fragment.
K-5201	3045-60	6,59	occ. Dark grey shale
		1,34	20% grey, partly silty Shale
		0,21	10% red Shale, as above
			70% very fine light Sandstone.
K-5202	3060-75	1,55	20% Grey, partly silty Shale
		0,23	20% red Shale, as above
			60% very fine light Sandstone
			sm.am. Pyrite.
K-5203	2075-90	0,82	20% Grey, silty Shale occ. calcareous
		0,21	10% red Shale, as above
			70% very fine light Sandstone
			occ. Coal fragment.

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TABLE NO.:II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-5204	3090-3105	0,95	20% grey, occ. red, yellow, silty Shale 80% very fine light Sandstone occ. Pyrite.
K-5205	3105-20	1,13	100% Grey, green Shale sm.am. Pyrite and Coal fragments.
K-5206	3120-35	1,10	25% Grey, silty Shale 5% red silty Shale 80% very fine light Sandstone sm.am. Pyrite and Coal fragments.
K-5207	3135-50	2,37	25% Grey, silty Shale 5% red, silty Shale 80% very fine light Sandstone.
K-5208	3150-65	1,63	25% Grey, silty Shale 5% red, silty Shale 70% very fine light Sandstone sm.am. white Limestone fragment.
K-5209	3165-80	1,51	35% Grey, green Shale, occasionally silty 5% red, occasionally silty, Shale 60% very fine light Sandstone.
K-5210	3180-95	1,73	35% Grey, green shale, occasionally silty 5% red, occasionally silty, Shale 60% very fine light Sandstone.
K-5211	3195-3211	1,26	35% Grey-green Shale, occasionally silty 5% red Shale, occasionally silty 60% very fine light Sandstone sm.am. Coal.

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TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-5212	3210-25	2,41	40% Grey-green silty Shale 60% very fine light Sandstone sm.am. red Shale, coal fragments.
K-5213	3225-40	2,58	50% Grey, silty Shale 50% very fine light Sandstone sm.am. Coal fragments.
K-5214	3240-55	1,92	50% Grey, silty Shale 50% very fine light Sandstone sm.am. Pyrite, coal fragments.
K-5215	3255-70	2,53	60% Grey, silty Shale 40% very fine light Sandstone sm.am. Coal fragment.
K-5216	3270-85	3,04	60% Grey, silty Shale 40% very fine light Sandstone.
K-5217	3285-3300	2,29	60% Grey (silty) Shale 40% Very fine light Sandstone.
K-5218	3300-15	4,88	60% Grey (silty) Shale 40% very fine light Sandstone.
K-5319	3315-30	1,91	60% Grey Shale 40% very fine light Sandstone.
K-5225	3330-45	2,53	60% Grey, greenish-grey, occasionally silty, Shale 10% green, grey, red, yellow Shale 30% light very fine Sandstone occasionally calcareous.

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TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-5226	3345-60	2,78	60% Grey Shale, as above 10% green, red Shale, as above 30% Sandstone, as above.
K-5227	3360-75	1,53	65% Grey, green-grey, occasionally silty Shale 5% green, red Shale, as above 30% Sandstone, as above.
K-5228	3375-90	1,93	35% Grey Shale, as above 65% Sandstone, as above.
K-5229	3390-3405	1,50	30% Grey Shale, as above 70% Sandstone, as above.
K-5230	3405-20	1,71	40% Grey Shale, as above 50% very fine, white, Sandstone 10% white Limestone fragments.
K-5231	3420-35	1,37	30% Grey Shale, as above 60% very fine, white, Sandstone 10% white Limestone fragments.
K-5232	3435-50	1,09	50% grey, often green, occasionally silty, Shale 50% very fine light Sandstone, often calcareous.
K-5233	3450-65	1,14	70% Grey Shale, as above 30% Sandstone, as above.
K-5234	3465-80	1,04	30% Grey Shale, as above 70% Sandstone, as above
		26,70	Sm.am. Shaly Coal fragments.

IKU

TABLE NO.: II

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
K-5235	3480-95	1,22	25% Shale, as above 75% Sandstone, as above.
K-5237	3510-25	1,26	20% Shale, as above 80% Sandstone, as above.
K-5238	3525-40	1,16	40% Shale, as above 50% yellow, grey, white, very fine Sandstone 10% grey mottled Limestone.
K-5239	3540-55	1,24	15% Dark grey Shale 85% light very fine Sandstone.
K-5241	3570-74	1,08	15% Dark grey Shale 85% Sandstone, as above.

IKU

TABLE NO.: IIa

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
237	1901	7.75	Dark, greenish grey claystone
233	1966	5.59	Green, grey claystone
232	1990	9.20	Green, grey claystone
231	2000	9.12	Green, grey claystone, laminated
229	2011	13.14	Green, grey claystone, micaceous
227/228	2016	6.92	Grey green claystone, micaceous
227	2024	0.96	Grey-green claystone, silty, micaceous
226	2037	0.94	Silty claystone
223	2091	0.94	Grey-green claystone with very fine sand grains
221	2104	-	Very fine sandstone
220	2118.5	-	Medium sandstone
219	2180	-	Fine sandstone
216	2239	15.50	Coal
213	2265		Grey (silty) mudstone
210	2333.5	-	Medium to coarse sandstone

012/B/1/mk

KU

TABLE NO.: IIa

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
209	2339	0.53	Grey mudstone
240	2344	0.54	Light grey, calcareous, silty mudstone
207	2350	-	Very fine sandstone
203	2375	0.28	Grey/green claystone
201	2387	-	Very fine sandstone
200	2404	0.48	Light grey claystone with sand lamina
198	2417.5	-	Medium to fine sandstone
197	2429	6.72	Grey, green claystone
193	2500	-	Grey-green, silty, laminated sandstone
188	2575	0.24	Silty, grey mudstone
187	2600	0.41	Grey, green claystone
186	2616	0.35	Grey, green and red claystone
185	2627	-	Fine sandstone
184	2636	0.46	Brown-green-grey claystone
183	2662	0.54	Brown-green-silty claystone

IKU

TABLE NO.: IIa

WELL NO.: 7120/12-

Sample	Depth	TOC	Lithology
181	2670	0.28	Green, partly red-brown claystone
180	2686	1.25	Grey, green siltstone
178	2713		Grey, green sandstone/siltstone
177	2716	0.41	Light green claystone
176	2747	0.42	Light green, occasionally red-brown, claystone
174	2787	0.57	Light green claystone
173	2816	1.21	Grey, green, sandy siltstone
172	2834	0.41	Red, partly green, claystone
171	2850		Claystone/sandstone
170	2886	0.60	Green, occasionally red, claystone
169	2902	4.37	Grey-green-brown siltstone
168	2925	-	Very fine sandstone
166	2959	-	Very fine sandstone
162	3043	1.18	Dark grey siltstone with very fine sand lamina
160	3085	0.60	Grey-green claystone

012/B/3/mk

KU

TABLE NO.: IIa

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
159	3097	-	Very fine sandstone
155	3167	1.11	Grey-green, silty claystone
153	3201	1.52	Grey-brown-green claystone
151	3212	-	Very fine sandstone
148	3275	1.35	Grey, green claystone
146	3320	0.65	Grey, green siltstone
144	3337	0.76	Calcareous silty, dark grey, green claystone
141	3387	1.02	Grey-green claystone
136	3425	1.04	Silty, dark green claystone
134	3445	1.25	Silty, dark green claystone
132	3472	1.33	Dark grey, green claystone
128	3505	0.27	Very fine sandstone
127	3508	3.16	Dark green and light sandy limestone
125	3515.5	1.11	Dark grey and light sandy limestone

012/B/4/mk

IKU

TABLE NO.: IIa

WELL NO.: 7120/12-1

Sample	Depth	TOC	Lithology
124	3534	3.37	Dark grey, green claystone, ?coal stringers
123	3543.5	1.65	Laminated grey, brown claystone and very fine sandstone
121	2570	1.01	Grey-green, micaceous claystone.

012/B/5/mk

IKU

T A B L E : III

WEIGHT OF EOM AND CHROMATOGRAPHIC FRACTIONS

IKU-No	DEPTH (m)	Rock Extr. (g)	EOM (mg)	Sat. (mg)	Aro. (mg)	HC (mg)	Non HC (mg)	TOC (%)
K-4215	760	18.9	2.0	.2	.7	.9	1.1	1.3
K-4216	775	48.1	7.1	1.3	.1	1.4	5.7	1.2
K-4224	895	50.0	3.7	.6	.6	1.2	2.5	1.3
K-4231	1000	29.9	2.6	.5	.4	.9	1.7	1.3
K-4237	1090	38.5	3.5	2.2	1.2	3.4	.1	1.3
K-4245	1210	50.0	6.1	2.2	.8	3.0	3.1	1.4
K-4257	1345	30.6	2.5	.4	.5	.9	1.6	.9
K-4259	1375	50.0	12.4	6.2	.4	6.6	5.8	2.1
K-4260	1390	65.1	11.6	2.4	1.6	4.0	7.6	2.5
K-4262	1420	13.7	8.0	1.2	.4	1.6	6.4	2.4
K-4265	1465	33.4	5.1	1.1	.8	1.9	3.2	1.4
K-4430	1525	59.0	37.6	17.2	7.1	24.3	13.3	1.0
K-4432	1555	93.3	24.0	7.4	3.4	10.8	13.2	1.2
K-4435	1600	71.9	12.6	1.6	1.0	2.6	10.0	1.1
K-4436	1615	59.3	6.5	1.1	.4	1.5	5.0	.6
K-4439	1660	105.6	22.6	3.2	3.4	6.6	16.0	1.8
K-5220	1661.8	26.0	25.7	3.8	3.8	7.6	18.1	1.9
K-5221	1664.0	43.0	30.7	5.6	15.4	21.0	9.7	2.3
K-5222	1666.7	51.0	22.5	4.9	4.0	8.9	13.6	1.3
K-5223	1667.9	29.9	24.8	6.4	4.7	11.1	13.7	.5
K-4440	1675	52.6	30.7	5.6	4.6	10.2	20.5	3.1
K-4441	1690	37.8	32.2	7.1	5.3	12.4	19.8	3.0
K-4442	1705	80.9	83.0	21.2	18.1	39.3	43.7	2.4
K-4911	1720	63.2	49.2	7.3	12.2	19.5	29.7	2.9
K-4912	1735	72.8	77.7	9.4	22.7	32.1	45.6	3.6

IKU

T A B L E : III

WEIGHT OF EOM AND CHROMATOGRAPHIC FRACTIONS

IKU-No	DEPTH (m)	Rock Extr. (g)	EOM (mg)	Sat. (mg)	Aro. (mg)	HC (mg)	Non HC (mg)	TOC (%)
K-4913	1750	69.8	70.3	10.1	15.4	25.5	44.8	3.8
K-4916	1795	91.3	111.2	18.2	16.6	34.8	76.4	5.7
K-4917	1810	88.1	115.3	9.6	16.4	26.0	89.3	5.0
K-4919	1840	106.7	138.7	20.2	28.1	48.3	90.4	4
K-4921	1870	75.3	97.9	13.4	14.9	28.3	69.6	4.8
K-4923	1900	106.9	186.3	36.5	34.7	71.2	115.1	4.7
K-4994	1930	89.9	230.8	26.5	28.8	55.3	175.5	6.8
K-4997	1975	52.8	190.9	9.7	20.1	29.8	161.1	10.1
K-4999	2005	55.8	179.5	13.0	22.5	35.5	144.0	11.1
K-5000	2020	26.9	84.7	4.9	10.1	15.0	69.7	9.8
K-5224	2043.0	60.3	12.4	1.6	3.1	4.7	7.7	2.0
K-5005	2080	28.3	52.3	7.7	9.7	17.4	34.9	8.4
K-5013	2200	42.1	236.0	35.7	47.0	82.7	153.3	1.0
K-5015	2230	75.3	116.7	26.9	20.0	46.9	69.8	10.3
K-5023	2350	70.7	26.8	3.5	3.5	7.0	19.8	.8
K-5024	2365	85.8	17.2	5.9	4.2	10.1	7.1	.5
K-5026	2395	70.1	8.6	2.4	1.3	3.7	4.9	.6
K-5027	2410	90.2	82.3	16.2	13.7	29.9	52.4	.5
K-5030	2455	50.9	13.1	2.2	2.0	4.2	8.9	12.4
K-5087	2530	58.1	23.5	4.3	3.1	7.4	16.1	1.4
K-5104	2775	69.0	8.0	.6	1.8	2.4	5.6	2.1
K-5200	3030	81.1	10.9	10.1	.5	10.6	.3	.6
K-5201	3045	65.9	7.3	.7	3.1	3.8	3.5	.5
K-5209	3165	63.5	9.1	3.6	.2	3.8	5.3	.8

IKU

T A B L E : III

WEIGHT OF EOM AND CHROMATOGRAPHIC FRACTIONS

IKU-No	DEPTH (m)	Rock Extr. (g)	EOM (mg)	Sat. (mg)	Aro. (mg)	HC (mg)	Non HC (mg)	TOC (%)
K-5216	3270	97.8	24.5	8.0	1.8	9.8	14.7	.8
K-5218	3300	38.0	24.9	1.9	4.4	6.3	18.6	.9
K-5226	3345	71.2	11.9	2.9	1.6	4.5	7.4	.8
K-5228	3375	100.0	20.5	4.4	3.5	7.9	12.6	.9
K-5231	3420	84.7	21.1	6.1	3.2	9.3	11.8	.8
K-5234	3465	43.3	17.0	2.4	3.1	5.5	11.5	1.3
K-5242	3521.9	100.0	111.3	26.0	7.6	33.6	77.7	1.2
K-5243	3522.5	61.9	56.9	40.8	13.0	53.8	3.1	1.5
K-5245	3523.4	62.4	28.2	5.8	7.1	12.9	15.3	1.0
K-5244	3524.5	100.0	59.9	12.6	15.8	28.4	31.5	1.3
K-5246	3525.5	61.5	44.1	12.0	8.4	20.4	23.7	1.9
K-5239	3540	88.4	21.4	3.4	9.1	12.5	8.9	.8

IKU

TABLE: IV

CONCENTRATION OF EOM AND CHROMATOGRAPHIC FRACTIONS

(Weight ppm of rock)

IKU-No	DEPTH (m)	EOM	Sat.	Aro.	HC	Non HC
K-4215	760	106	11	37	48	58
K-4216	775	148	27	2	29	119
K-4224	895	74	12	12	24	50
K-4231	1000	87	17	13	30	57
K-4237	1090	91	57	31	88	3
K-4245	1210	122	44	16	60	62
K-4257	1345	82	13	16	29	52
K-4259	1375	248	124	8	132	116
K-4260	1390	178	37	25	61	117
K-4262	1420	584	88	29	117	467
K-4265	1465	153	33	24	57	96
K-4430	1525	637	292	120	412	225
K-4432	1555	257	79	36	116	141
K-4435	1600	175	22	14	36	139
K-4436	1615	110	19	7	25	84
K-4439	1660	214	30	32	63	152
K-5220	1661.8	988	146	146	292	696
K-5221	1664.0	714	130	358	488	226
K-5222	1666.7	441	96	78	175	267
K-5223	1667.9	829	214	157	371	458
K-4440	1675	584	106	87	194	390
K-4441	1690	852	188	140	328	524
K-4442	1705	1026	262	224	486	540
K-4911	1720	778	116	193	309	470
K-4912	1735	1067	129	312	441	626

IKU

TABLE: IV

CONCENTRATION OF EOM AND CHROMATOGRAPHIC FRACTIONS

(Weight ppm of rock)

IKU-No	DEPTH (m)	EOM	Sat.	Aro.	HC	Non HC
K-4913	1750	1007	145	221	365	642
K-4916	1795	1218	199	182	381	837
K-4917	1810	1309	109	186	295	1014
K-4919	1840	1300	189	263	453	847
K-4921	1870	1300	178	198	376	924
K-4923	1900	1743	341	325	666	1077
K-4994	1930	2567	295	320	615	1952
K-4997	1975	3616	184	381	564	3051
K-4999	2005	3217	233	403	636	2581
K-5000	2020	3149	182	375	558	2591
K-5224	2043.0	206	27	51	78	128
K-5005	2080	1848	272	343	615	1233
K-5013	2200	5606	848	1116	1964	3641
K-5015	2230	1550	357	266	623	927
K-5023	2350	379	50	50	99	280
K-5024	2365	200	69	49	118	83
K-5026	2395	123	34	19	53	70
K-5027	2410	912	180	152	331	581
K-5030	2455	257	43	39	83	175
K-5087	2530	404	74	53	127	277
K-5104	2775	116	9	26	35	81
K-5200	3030	134	125	6	131	4
K-5201	3045	111	11	47	58	53
K-5209	3165	143	57	3	60	83

IKU

TABLE: IV

CONCENTRATION OF EOM AND CHROMATOGRAPHIC FRACTIONS

(Weight ppm of rock)

IKU-No	DEPTH (m)	EOM	Sat.	Aro.	HC	Non HC
K-5216	3270	251	82	18	100	150
K-5218	3300	655	50	116	166	489
K-5226	3345	167	41	22	63	104
K-5228	3375	205	44	35	79	126
K-5231	3420	249	72	38	110	139
K-5234	3465	393	55	72	127	266
K-5242	3521.9	1113	260	76	336	777
K-5243	3522.5	919	659	210	869	50
K-5245	3523.4	452	93	114	207	245
K-5244	3524.5	599	126	158	284	315
K-5246	3525.5	717	195	137	332	385
K-5239	3540	242	38	103	141	101

IKU

TABLE: V

CONCENTRATION OF EOM AND CHROMATOGRAPHIC FRACTIONS

(mg/g TOC)

IKU-No	DEPTH (m)	EOM	Sat.	Aro.	HC	Non HC
K-4215	760	8.1	.8	2.8	3.7	4.5
K-4216	775	12.3	2.3	.2	2.4	9.9
K-4224	895	5.7	.9	.9	1.8	3.8
K-4231	1000	6.7	1.3	1.0	2.3	4.4
K-4237	1090	7.0	4.4	2.4	6.8	.2
K-4245	1210	8.7	3.1	1.1	4.3	4.4
K-4257	1345	9.1	1.5	1.8	3.3	5.8
K-4259	1375	11.8	5.9	.4	6.3	5.5
K-4260	1390	7.1	1.5	1.0	2.5	4.7
K-4262	1420	24.3	3.6	1.2	4.9	19.5
K-4265	1465	10.9	2.4	1.7	4.1	6.8
K-4430	1525	63.7	29.2	12.0	41.2	22.5
K-4432	1555	21.4	6.6	3.0	9.6	11.8
K-4435	1600	15.9	2.0	1.3	3.3	12.6
K-4436	1615	18.3	3.1	1.1	4.2	14.1
K-4439	1660	11.9	1.7	1.8	3.5	8.4
K-5220	1661.8	52.0	7.7	7.7	15.4	36.6
K-5221	1664.0	30.8	5.6	15.4	21.1	9.7
K-5222	1666.7	33.9	7.4	6.0	13.4	20.5
K-5223	1667.9	165.9	42.8	31.4	74.2	91.6
K-4440	1675	18.8	3.4	2.8	6.3	12.6
K-4441	1690	28.4	6.3	4.7	10.9	17.5
K-4442	1705	42.7	10.9	9.3	20.2	22.5
K-4911	1720	26.8	4.0	6.7	10.6	16.2
K-4912	1735	29.6	3.6	8.7	12.2	17.4

IKU

T A B L E : V

CONCENTRATION OF EOM AND CHROMATOGRAPHIC FRACTIONS

(mg/g TOC)

IKU-No	DEPTH (m)	EOM	Sat.	Aro.	HC	Non HC
K-4913	1750	26.5	3.8	5.8	9.6	16.9
K-4916	1795	21.4	3.5	3.2	6.7	14.7
K-4917	1810	26.2	2.2	3.7	5.9	20.3
K-4919	1840	27.1	3.9	5.5	9.4	17.7
K-4921	1870	27.1	3.7	4.1	7.8	19.3
K-4923	1900	37.1	7.3	6.9	14.2	22.9
K-4994	1930	37.8	4.3	4.7	9.0	28.7
K-4997	1975	35.8	1.8	3.8	5.6	30.2
K-4999	2005	29.0	2.1	3.6	5.7	23.2
K-5000	2020	32.1	1.9	3.8	5.7	26.4
K-5224	2043.0	10.4	1.3	2.6	3.9	6.4
K-5005	2080	22.0	3.2	4.1	7.3	14.7
K-5013	2200	560.6	84.8	111.6	196.4	364.1
K-5015	2230	15.1	3.5	2.6	6.1	9.0
K-5023	2350	47.4	6.2	6.2	12.4	35.0
K-5024	2365	40.1	13.8	9.8	23.5	16.6
K-5026	2395	20.4	5.7	3.1	8.8	11.7
K-5027	2410	182.5	35.9	30.4	66.3	116.2
K-5030	2455	2.1	.3	.3	.7	1.4
K-5087	2530	28.3	5.2	3.7	8.9	19.4
K-5104	2775	5.4	.4	1.2	1.6	3.8
K-5200	3030	22.4	20.8	1.0	21.8	.6
K-5201	3045	24.1	2.3	10.2	12.5	11.5
K-5209	3165	19.1	7.6	.4	8.0	11.1

IKU

T A B L E : V

CONCENTRATION OF EOM AND CHROMATOGRAPHIC FRACTIONS

(mg/g TOC)

IKU-No	DEPTH (m)	EOM	Sat.	Aro.	HC	Non HC
K-5216	3270	33.4	10.9	2.5	13.4	20.0
K-5218	3300	75.3	5.7	13.3	19.1	56.3
K-5226	3345	22.3	5.4	3.0	8.4	13.9
K-5228	3375	22.5	4.8	3.8	8.7	13.8
K-5231	3420	31.5	9.1	4.8	13.9	17.6
K-5234	3465	30.0	4.2	5.5	9.7	20.3
K-5242	3521.9	96.8	22.6	6.6	29.2	67.6
K-5243	3522.5	63.4	45.5	14.5	59.9	3.5
K-5245	3523.4	47.6	9.8	12.0	21.8	25.8
K-5244	3524.5	47.5	10.0	12.5	22.5	25.0
K-5246	3525.5	38.1	10.4	7.3	17.6	20.5
K-5239	3540	28.8	4.6	12.3	16.8	12.0

IKU

T A B L E : VI

COMPOSITION IN % OF THE MATERIAL EXTRACTED FROM THE ROCK

IKU-No	DEPTH (m)	Sat --- EOM	Aro --- EOM	HC --- EOM	Sat --- Aro	Non HC ------ EOM	HC ------ Non HC
K-4215	760	10.0	35.0	45.0	28.6	55.0	81.8
K-4216	775	18.3	1.4	19.7	1300.0	80.3	24.6
K-4224	895	16.2	16.2	32.4	100.0	67.6	48.0
K-4231	1000	19.2	15.4	34.6	125.0	65.4	52.9
K-4237	1090	62.9	34.3	97.1	183.3	2.9	3400.0
K-4245	1210	36.1	13.1	49.2	275.0	50.8	96.8
K-4257	1345	16.0	20.0	36.0	80.0	64.0	56.3
K-4259	1375	50.0	3.2	53.2	1550.0	46.8	113.8
K-4260	1390	20.7	13.8	34.5	150.0	65.5	52.6
K-4262	1420	15.0	5.0	20.0	300.0	80.0	25.0
K-4265	1465	21.6	15.7	37.3	137.5	62.7	59.4
K-4430	1525	45.7	18.9	64.6	242.3	35.4	182.7
K-4432	1555	30.8	14.2	45.0	217.6	55.0	81.8
K-4435	1600	12.7	7.9	20.6	160.0	79.4	26.0
K-4436	1615	16.9	6.2	23.1	275.0	76.9	30.0
K-4439	1660	14.2	15.0	29.2	94.1	70.8	41.3
K-5220	1661.8	14.8	14.8	29.6	100.0	70.4	42.0
K-5221	1664.0	18.2	50.2	68.4	36.4	31.6	216.5
K-5222	1666.7	21.8	17.8	39.6	122.5	60.4	65.4
K-5223	1667.9	25.8	19.0	44.8	136.2	55.2	81.0
K-4440	1675	18.2	15.0	33.2	121.7	66.8	49.8
K-4441	1690	22.0	16.5	38.5	134.0	61.5	62.6
K-4442	1705	25.5	21.8	47.3	117.1	52.7	89.9
K-4911	1720	14.8	24.8	39.6	59.8	60.4	65.7
K-4912	1735	12.1	29.2	41.3	41.4	58.7	70.4

IKU

T A B L E : VI

COMPOSITION IN % OF THE MATERIAL EXTRACTED FROM THE ROCK

IKU-No	DEPTH (m)	Sat / EOM	Aro / EOM	HC / EOM	Sat / Aro	Non HC / EOM	HC / Non HC
K-4913	1750	14.4	21.9	36.3	65.6	63.7	56.9
K-4916	1795	16.4	14.9	31.3	109.6	68.7	45.5
K-4917	1810	8.3	14.2	22.5	58.5	77.5	29.1
K-4919	1840	14.6	20.3	34.8	71.9	65.2	53.4
K-4921	1870	13.7	15.2	28.9	89.9	71.1	40.7
K-4923	1900	19.6	18.6	38.2	105.2	61.8	61.9
K-4994	1930	11.5	12.5	24.0	92.0	76.0	31.5
K-4997	1975	5.1	10.5	15.6	48.3	84.4	18.5
K-4999	2005	7.2	12.5	19.8	57.8	80.2	24.7
K-5000	2020	5.8	11.9	17.7	48.5	82.3	21.5
K-5224	2043.0	12.9	25.0	37.9	51.6	62.1	61.0
K-5005	2080	14.7	18.5	33.3	79.4	66.7	49.9
K-5013	2200	15.1	19.9	35.0	76.0	65.0	53.9
K-5015	2230	23.1	17.1	40.2	134.5	59.8	67.2
K-5023	2350	13.1	13.1	26.1	100.0	73.9	35.4
K-5024	2365	34.3	24.4	58.7	140.5	41.3	142.3
K-5026	2395	27.9	15.1	43.0	184.6	57.0	75.5
K-5027	2410	19.7	16.6	36.3	118.2	63.7	57.1
K-5030	2455	16.8	15.3	32.1	110.0	67.9	47.2
K-5087	2530	18.3	13.2	31.5	138.7	68.5	46.0
K-5104	2775	7.5	22.5	30.0	33.3	70.0	42.9
K-5200	3030	92.7	4.6	97.2	2020.0	2.8	3533.3
K-5201	3045	9.6	42.5	52.1	22.6	47.9	108.6
K-5209	3165	39.6	2.2	41.8	1800.0	58.2	71.7

IKU

T A B L E : VI

COMPOSITION IN % OF THE MATERIAL EXTRACTED FROM THE ROCK

IKU-No	DEPTH (m)	Sat / EOM	Aro / EOM	HC / EOM	Sat / Aro	Non HC / EOM	HC / Non HC
K-5216	3270	32.7	7.3	40.0	444.4	60.0	66.7
K-5218	3300	7.6	17.7	25.3	43.2	74.7	33.9
K-5226	3345	24.4	13.4	37.8	181.2	62.2	60.8
K-5228	3375	21.5	17.1	38.5	125.7	61.5	62.7
K-5231	3420	28.9	15.2	44.1	190.6	55.9	78.8
K-5234	3465	14.1	18.2	32.4	77.4	67.6	47.8
K-5242	3521.9	23.4	6.8	30.2	342.1	69.8	43.2
K-5243	3522.5	71.7	22.8	94.6	313.8	5.4	1735.5
K-5245	3523.4	20.6	25.2	45.7	81.7	54.3	84.3
K-5244	3524.5	21.0	26.4	47.4	79.7	52.6	90.2
K-5246	3525.5	27.2	19.0	46.3	142.9	53.7	86.1
K-5239	3540	15.9	42.5	58.4	37.4	41.6	140.4

IKU

TABLE VII

TABULATION OF DATAS FROM THE GASCHROMATOGRAMS

IKU No.	DEPTH (m)	PRISTANE / n-C17	PRISTANE / PHYTANE	CPI
K4215	760	1.5	2.5	1.9
K4224	895	.8	1.9	1.6
K4231	1000	.3	3.9	.6
K4237	1090	1.1	2.6	2.2
K4245	1210	1.6	2.3	1.2
K4257	1345	.5	1.8	1.9
K4259	1375	.8	1.8	1.0
K4260	1390	1.4	2.5	1.5
K4262	1420	1.0	2.2	1.2
K4265	1465	.5	1.1	1.0
K4430	1525	2.7	6.4	.5
K4432	1555	.7	3.0	2.1
K4435	1600	.7	2.2	1.9
K4436	1615	.8	2.6	1.3
K4439	1660	1.9	3.0	1.8
K5220	1661.8	1.8	3.1	1.1
K5221	1664.0	3.5	4.3	1.7
K5222	1666.7	3.4	4.3	1.7
K5223	1667.9	2.4	3.7	.7
K4440	1675	1.7	2.7	1.6
K4441	1690	1.4	2.0	1.5
K4442	1705	1.5	2.6	1.4
K4911	1720	3.0	2.9	1.8
K4912	1735	2.9	1.6	1.5
K4913	1750	5.9	2.7	1.7

IKU

TABLE VII

TABULATION OF DATAS FROM THE GASCHROMATOGRAMS

IKU No.	DEPTH (m)	PRISTANE / n-C17	PRISTANE / PHYTANE	CPI
K4916	1795	4.1	3.0	1.8
K4917	1810	4.5	2.6	1.8
K4919	1840	2.5	2.4	1.4
K4921	1870	3.6	2.2	1.6
K4923	1900	4.1	2.5	1.6
K4994	1930	4.7	2.5	1.5
K4997	1975	2.7	1.8	1.5
K4999	2005	2.4	2.3	1.4
K5000	2020	2.4	1.9	1.3
K5224.0	2043	1.6	4.3	1.4
K5005	2080	1.6	1.8	1.3
K5013	2200	1.2	4.2	1.0
K5015	2230	.7	2.0	1.3
K5023	2350	.9	2.9	1.4
K5024	2365	1.1	2.8	1.5
K5026	2395	.5	1.5	1.4
K5027	2410	.7	2.4	1.3
K5030	2455	.7	2.8	1.2
K5087	2530	.5	1.8	1.3
K5104	2775	.9	2.7	1.5
K5200	3030	.6	2.0	1.2
K5201	3045	.9	2.2	.9
K5209	3165	.8	2.7	1.2
K5216	3270	.5	2.1	1.2
K5218	3300	.7	2.2	1.3

IKU

TABLE VII

TABULATION OF DATAS FROM THE GASCHROMATOGRAMS

IKU No.	DEPTH (m)	PRISTANE / n-C17	PRISTANE / PHYTANE	CPI
K5226	3345	.6	2.2	1.2
K5228	3375	.5	2.1	1.1
K5231	3420	.4	2.4	1.2
K5234	3465	.3	1.9	1.1
K5242	3521.9	.7	3.6	1.1
K5243	3522.5	.6	3.4	1.2
K5245	3523.4	.7	3.8	1.1
K5244	3524.5	.7	2.2	1.1
K5246	3525.5	.7	3.8	1.1
K5239	3540	.5	2.5	1.2

IKU

TABLE NO.: VIII

VITRINITE REFLECTANCE MEASUREMENTS

WELL NO.: 7120/12-1

Sample	Depth	Vitrinite reflectance	Fluorescence in UV light	Exinite content
K 4215	760-75	0.43(8)	Yellow-yellow/orange	Low
K 4224	895-910	0.34(20)	Yellow-yellow/orange	Moderate
K 4231	1000-15	0.39(15)	Yellow/orange	Low
K 4237	1090-1105	0.37(13)	Yellow/orange	Low-moderate
K 4245	1210-25	0.33(9)	Yellow/orange-light orange	Low-moderate
K 4257	1345-60	0.43(2)	Yellow/orange	Low
K 4259	1375-90	0.40(19),1.24(1)	Light orange	Low
K 4260	1390-1405	0.45(18),0.76(2)	Light orange	Trace
K 4262	1420-35	0.58(7)	-	-
K 4265	1465-80	0.46(20)	Yellow/orange-light orange	Trace
K 4430	1525-40	0.56(3)	Light orange	Trace
K 4432	1555-70	0.40(21)	Light orange	Low
K 4435	1600-15	0.35(20)	Yellow-light orange	Low-moderate
K 4436	1615-30	0.38(7),0.64(1)	Light orange	Trace
K 4439	1660-75	0.45(20)	Light orange	Low
K 5220	1661.75	0.48(12)	Light orange	Moderate
K 5221	1664.0	1.41(21)	Light orange	Moderate
K 5222	1666.7	0.41(22)	Light orange	Moderate
K 5223	1667.85	0.38(20)	Light orange	Moderate-rich
K 4440	1675-90	0.40(21)	Light orange	Moderate
K 4441	1690-1705	0.43(20)	Light + mid. orange	Moderate
K 4442	1705-20	0.42(21)	Light orange	Moderate
K 4911	1720-35	0.44(21)	Light orange	Moderate
K 4912	1735-50	0.39(21)	Light orange	Low-moderate
K 4913	1750-65	0.42(21)	Yellow/orange	Moderate
K 4916	1795-1810	0.45(20)	Yellow/orange + light orange	Moderate
K 4917	1810-25	0.42(22)	Yellow/orange + light orange	Low-moderate
K 4919	1840-55	0.44(22)	Light orange	Low-moderate
K 4921	1870-85	0.42(22)	Light orange	Moderate
K 4923	1900-15	0.45(21)	Light orange	Moderate
K 4993	1915-30	0.42(19),0.71(1)	Light/mid. orange	Moderate-rich

IKU

TABLE NO.: VIII

VITRINITE REFLECTANCE MEASUREMENTS

WELL NO.: 7120/12-1

Sample	Depth	Vitrinite reflectance	Fluorescence in UV light	Exinite content
K 4994	1930-45	0.45(21)	Light-mid. orange	Moderate
K 4995	1945-60	0.45(20)	Light orange	Moderate
K 4996	1960-75	0.41(21)	Light + mid. orange	Low
K 4997	1975-90	0.49(20)	Light orange	Moderate
K 4998	1990-2005	0.45(22)	Light orange	Low-moderate
K 4999	2005-20	0.50(20)	Light orange	Low-moderate
K 5000	2020-35	0.47(21)	Yellow/orange + light orange	Moderate
K 5224	2043.0	0.50(20)	Mid. orange	Low
K 5005	2080-95	0.44(20)	Mid. orange	Low
K 5010	2155-70	0.49(21)	Light orange	Low
K 5013	2200-15	0.50(21)	Light/mid. orange	Low-moderate
K 5014	2215-30	0.62(21)	Light orange	Low
K 5015	2230-45	0.58(21)	Mid. orange	Low-moderate
Nr. 216	2239	0.48(2), 0.79(7)	Deep orange	Trace
K 5016	2245-60	0.54(21)	Light-mid. orange	Low
K 5019	2290-2305	0.61(20)	Light + mid. orange	Low
K 5020	2305-20	0.63(20)	Light/mid. orange	Moderate-rich
K 5023	2350-65	0.59(21)	Light orange	Trace
K 5024	2365-80	0.63(22)	Light/mid. orange	Trace
K 5026	2395-2410	0.42(2),0.74(15)	Light orange	Trace
K 5027	2410-25	0.57(20)	Light + mid. orange	Low-moderate
K 5029	2440-55	0.56(21)	Light + mid. orange	Moderate
K 5030	2455-70	0.66(21)	Light orange	Low
K 5083	2470-85	0.52(23)	Mid. orange	Moderate-rich
Nr. 193	2500	0.47(16),0.75(4)	Mid. orange	Low-moderate
K 5088	2545-60	0.57(20)	Mid. - deep orange	Moderate-rich
Nr. 186	2616	0.94(1)	-	-
Nr. 178	2713	0.30(1),0.49(1)	-	-
Nr. 174	2787	NDP	-	-
Nr. 172	2834	0.39(1),1.14(1)	-	-
Nr. 168	2925	0.61(2)	Mid. orange	Low
K 5194	2940-55	0.55(20)	Mid. orange	Moderate

IKU

TABLE NO.: VIII

VITRINITE REFLECTANCE MEASUREMENTS

WELL NO.: 7120/12-1

Sample	Depth	Vitrinite reflectance	Fluorescence in UV light	Exinite content
K 5197	2985-3000	0.56(12),0.86(1)	Mid. - deep orange	Low-moderate
K 5199	3015-30	0.58(11),0.86(1)	Mid. orange	Low-moderate
Nr. 162	3043	0.62(20)	Mid. orange	Moderate
K 5202	3060-75	0.54(20),0.81(1)	Light orange	Moderate
Nr. 159	3097	NDP	-	-
K 5207	3135-50	0.61(20)	Mid. orange	Moderate-rich
K 5210	3180-95	0.48(21)	Light + mid. orange	Low
Nr. 151	3212	0.64(20)	-	-
K 5215	3255-70	0.57(21)	Mid. orange	Moderate-rich
K 5218	3300-15	0.58(23)	Mid. orange	Low-moderate
K 5225	3330-45	0.64(20)	Mid. orange	Moderate-rich
Nr. 141	3387	0.59(20)	Mid. - deep orange	Moderate-rich
K 5231	3420-35	0.56(20),0.85(1)	Deep orange	Low-moderate
Nr. 132	3472	0.58(18)	Mid. - deep orange	Trace
Nr. 125	3515.5	0.59(20)	Mid. orange	Trace
K 5242	3521.9	0.69(22)	Mid. - deep orange	Low-moderate
K 5246	3525.5	0.59(22)	Mid. - deep orange	Low-moderate
Nr. 121	3570	0.65(22)	Mid. orange	Low

IKU

TABLE NO.: IX A

VISUAL KEROGEN ANALYSIS

WELL NO.: 7120/12-1

Sample	Depth	Composition of residue	Particle size	Preservation - palynomorphs	Thermal maturation index	Remarks
swc	760	W,WR!,He,P,S/Am,Cy	F-M	fair or good	1+/2-	Dark angular woody matter, resin swc 760, 775 m.
swc	775	W,WR!,He,P,S/Am,Cy	F-M	good	1+/2-	
swc	890	Am.Cy/He,W,WR!	F-M	good	1+/2-	Staining. Aggregates common 890-1390 m.
swc	1000	Am,Cy/Cut,He,W,P,S	F-M-L	good to fair	1+/2-	Hyphae of fungi, well preserved spores.
swc	1100	Am,Cy/He,W,Cut,P,S	F	good	1+/2-, 1+	Angular woody matter/oxidation.
swc	1225	Am,Cy/He,W,P	F	fair	2-/2, 1+/2-	Pyrite, oxidation.
swc	1350	Am,Cy/He,W,P,S,WR!	F-M-L	good	2-/2	(No aggregates)
swc	1383	Am,Cy/He,W,P,S,WR!	F-M-L	good	2-/2	Reworked ?Triassic palyn.
swc	1390	Am,Cy/He,W,P,S,WR!	F	good	2-/2	Reworked ?Triassic palyn.
swc	1432	Am,Cy/He,W,P,S,WR!	F-M	fair	2-/2	Reworked material.
swc	1475	Am,Cy,W,Cut,He,P,S	F-M-L	poor	2-/2	Sapropelization, pyrite.
swc	1527	He,W,P,S/Am,Cy	F	fair	2-	Small residue, oxidation, pyrite.

ABBREVATIONS

Am	amorphous	Cy	cysts, algae	W	woody material	F	fine
He	herbaceous	P	pollen grains	C	coal	M	medium
Cut	cuticles	S	spores	R!	reworked	L	large

IKU

TABLE NO.: IX B

VISUAL KEROGEN ANALYSIS

WELL NO.: 7120/12-1

Sample	Depth	Composition of residue	Particle size	Preservation - palynomorphs	Thermal maturation index	Remarks
1555-70	1572	He,W,WR!,P,S/Am		poor to fair	2-/2, 3-	Oxidized/reworked material.
	1587	He,W,Cut,P,S/Am	F-M	poor	2-	
swc	1637	He,W,P,S/Am	F-M	poor	2-	Aggreg. strong sapropelization, pyrite.
swc	1661.75	Am/Cut,W,He,P	F-M-L	poor	2- or 2-/2	Fungi, sapropel embeds palyn. pyrite.
swc	1664.00	He,Cut,W,P,/Am	F-M-L	fair	2- or 2-/2	Botryococcus, pyrite.
swc	1666.70	He,W,P/Am,Cy	F-M	poor	2- or 2-/2	Pyrite in abundance, aggregates sapropelization, fungi.
swc	1667.85	He,Cut,W/Am	F	poor	2- or 2-/2	Pyrite, sapropel, fungi.

ABBREVATIONS

Am	amorphous	Cy	cysts, algae	W	woody material	F	fine
He	herbaceous	P	pollen grains	C	coal	M	medium
Cut	cuticles	S	spores	R!	reworked	L	large

IKU

TABLE NO.: IX C

VISUAL KEROGEN ANALYSIS

WELL NO.: 7120/12-1

Sample	Depth	Composition of residue	Particle size	Preservation - palynomorphs	Thermal maturation index	Remarks
SWC	1700	WR!,He,Cut,W,P,S/Am	F-M-L	fair to poor	2-/2	Sapropelization, pyrite.
SWC	1739	He,Cut,W,P,S/Am,	F-M-L	poor to fair	2-/2	Sapropelization, pyrite.
SWC	1754	He,Cut,W,P,S/Am	F-M-L	poor to fair	2-/2	Strong sapropelization, resin, decay.
SWC	1790	He,W,Cut,P,S/Am,Cy	F-M-L	poor to fair	2-/2	Aggregates, resin.
SWC	1800	He,P,S/Am,Cy	F-M	poor to fair	2-/2, 2	Sapropelization, staining, aggregates.
SWC	1860	He,W/Am,Cy	F-M-L	poor to fair	2-/2	Sapropelization, resin.
SWC	1875	He,Cut,W,WR!,P,S/Am,Cy	F-M-L	poor to fair	2-/2	Fungi, sapropelization, pyrite.
SWC	1890	Cut,He,W,P,S/Am,Cy	F-M-L	poor to fair	2-/2	
SWC	1901	Cut,He,W,P,S/Am,Cy	F-M-L	poor	2-/2	Flaky structure of aggregates (sapropel).

ABBREVATIONS

Am	amorphous	Cy	cysts, algae	W	woody material	F	fine
He	herbaceous	P	pollen grains	C	coal	M	medium
Cut	cuticles	S	spores	R!	reworked	L	large

IKU

TABLE NO.: IX D

VISUAL KEROGEN ANALYSIS

WELL NO.: 7120/12-1

Sample	Depth	Composition of residue	Particle size	Preservation - palynomorphs	Thermal maturation index	Remarks
	1910	He,Cut,P/Am,Cy	F-M-L	poor	2-/2, 2	Poor residue, rew. Triassic.
	1930	He,Cut,P/Am,Cy	F-M-L	poor		Sapropelization, aggregates, poor.
	1945	He,W/Am	F-M-L	poor		Saprop. aggregates, pyrite.
swc	1966	Cut,He,W/Am	F-M-L	poor	2-/2, 2	Pyrite, staining, sapropelization, aggregates.
	1975	*He,Cut,W,P,S/*Am	F-M-L	poor	2-/2, 2	*O slide, Am reduced by screening, Sapropelization.
swc	1990	Cut,He,W/Am	F-M-L	poor	2-/2, 2	Pyrite, staining, sapropelization.
	2005	He,Cut,P,S/Am	F-M-L	poor		
swc	2011	Cut,He,W,P,S/Am	F-M-L	poor to good	2-/2, 2	Fungi.
swc	2024	Am,Cy/He,Cut,W	F-M-L	poor to good	2-/2, 2	Fungi, small residue.

ABBREVATIONS

Am	amorphous	Cy	cysts, algae	W	woody material	F	fine
He	herbaceous	P	pollen grains	C	coal	M	medium
Cut	cuticles	S	spores	R!	reworked	L	large

IKU

TABLE NO.: IX E

VISUAL KEROGEN ANALYSIS

WELL NO.: 7120/12-1

Sample	Depth	Composition of residue	Particle size	Preservation - palynomorphs	Thermal maturation index	Remarks
c	2043.00	He,W,Cut,WR!,P/Am	F-M	poor to fair	2-/2	Pyrite, poor residue.
c	2090	Cut,He,P/Am,Cy	F-M-L	fair to good	2-/2	Pyrite in coaly material, Poor residue.
swc	2091	He,Cut,W,WR!,P,S/Am	F-M-L	fair		Aggregates.
swc	2104	He,W,WR!/Am	F-M-L	fair to poor	2-/2	Pyrite in abundance.
	2160	Cut,He,W,WR!,S/Am,Cy		fair to good	2-/2, 2	Woody/coaly, sapr. cuticles, resin.
	2205	Cut,W,He,P,S/Am	F-M-L	poor	2	Woody/coaly, sapr. cuticles.
	2220	WR!,W,He,S,P/Am		poor	2	Woody/coaly.
swc	2239	He,W,Cut,P,S/Am,Cy	M-F	fair to good	2, 2/2+	Some reworked palyn. (Triassic).
swc	2265	W,WR!Cut,He,P,S/Am	F-M-L	fair	2-/2	Woody material, coaly.
	2300	WR!,W,He,Cut,P,S/Am	F-M	poor		
	2315	W,He,P/Am		poor	2-/2	Sapropelization.
swc	2333.5	W,He,Cut,P,S/Am	F-M-L	fair	2/2+	Almost barren.
	2350	WR!,Cut,W,P,S/Am	F-M-L	fair to good	2/2+	

ABBREVATIONS

Am	amorphous	Cy	cysts, algae	W	woody material	F	fine
He	herbaceous	P	pollen grains	C	coal	M	medium
Cut	cuticles	S	spores	R!	reworked	L	large

IKU

TABLE NO.: IX F

VISUAL KEROGEN ANALYSIS

WELL NO.: 7120/12-1

Sample	Depth	Composition of residue	Particle size	Preservation - palynomorphs	Thermal maturation index	Remarks
swc	2375	Am/WR!,W,He	F	poor	2/2+	Aggregates (minerals and sapr.)
swc	2404	Am/He,W,WR!	F-M	poor	2/2+	Almost barren.
swc	2417	WR!,W,He,P,S/Am	F-M-L	good - fair	2/2+	Almost barren.
swc	2429	WR!,He,Cut,S,P/Am	F-M-L	good	2/2+	Resin.
	2445	Cut,He,WR!,W,S/Am	F-M-L	good	2/2+	Large spores, thickwalled.
	2460	Cut,He,WR!,W,S/Am	F-M-L	good	2/2+	
	2478	Am/He,W,WR!	F-M	good	2/2+	Poor residue.
	2555	Am/He,W,WR!	F	fair	2/2+	Poor residue.
swc	2616	Am/He,S	F	poor	2/2+, 3-	Almost barren.
swc	2670	Am/He,WR!,W	F	poor	3-	Almost barren.
swc	2713	Am/WR!,W,He	F	poor		Almost barren.
swc	2787	Am/W,He,S,P	F	fair to good	3-	Poor residue.
swc	2834	Am,W/He,P,S	F	fair to poor		Small residue.
swc	2850	Am/W,He,Cut,P,S	F-M	fair to poor	2	Sapropelized.
swc	2925	W,Cut,P,S/Am	F-M	poor to fair	2	Poor residue.

ABBREVATIONS

Am	amorphous	Cy	cysts, algae	W	woody material	F	fine
He	herbaceous	P	pollen grains	C	coal	M	medium
Cut	cuticles	S	spores	R!	reworked	L	large

IKU

TABLE NO.: IX G

NORSK HYDRO

VISUAL KEROGEN ANALYSIS

WELL NO.: 7120/12-1

Sample	Depth	Composition of residue	Particle size	Preservation - palynomorphs	Thermal maturation index	Remarks
swc	2959	He,WR!/Am	F	poor	2	Almost barren.
	2985	Am/He,W,WR!,P,S	F-M-L	fair	2	Aggregates.
	3030	Am/Cut,W,He,P,S	F-M-L	good to fair	2-/2, 2+/3-, 3-	Aggregates, staining.
swc	3043	Am/Cut,W,He,P,S	F-M	poor	2	Poor residue.
swc	3097	(Am/Cut,He,W,P,S)	F-M	fair	2	Almost barren sed.
	3155	Am/Cut,W,He,WR!	F-M	fair to good	2-/2, 2	Poor residue.
swc	3167	WR!,Cut,He,W/Am	F-M		2	Poor residue.
swc	3201	Am,Cy/Cut,W,He,P,S	F-M-L	poor to fair	2	Pyrite
swc	3219	(W,Cut,He,P,S/Am)	F-M	poor	2/2+	Poor residue.
	3240	W,Cut,He,P,S/Am,Cy	F-M	poor	2-/2, 2/2+	Pyrite.
swc	3275	W,WR!,He,S,P/Am,Cy	F-M	poor to fair	2/2+	Poor residue, pyrite.

ABBREVATIONS

Am	amorphous	Cy	cysts, algae	W	woody material	F	fine
He	herbaceous	P	pollen grains	C	coal	M	medium
Cut	cuticles	S	spores	R!	reworked	L	large

IKU

TABLE NO.: IX H

NORSK HYDRO

VISUAL KEROGEN ANALYSIS

WELL NO.: 7120/12-1

Sample	Depth	Composition of residue	Particle size	Preservation - palynomorphs	Thermal maturation index	Remarks
	3300	W,WR!,Cut,He,S,P/Am,Cy	F,M	poor	2/2+	Pyrite.
swc	3337	W,Cut,He,P,S/Am,Cy	F-M-L	poor to fair	3-	Pyrite.
	3350	Cut,He,W,WR!,S,P/Am	F-M	poor to fair	2, 3-	Poor residue.
	3375	W,He,Cut,P,S/Am,Cy	F-M	fair to good	2, 3-	Aggregates, thinwalled palyn.
swc	3425	Am,Cy/W,WR!,Cut,P,S	F-M	poor to fair	2/2+, 2+	Aggregates and pyrite.
swc	3445	Am,Cy/WR!,W,Cut,He,S,P	F-M	good to fair	3-	Richer.
swc	3472	Am,Cy/WR!,W,He,S,P	F-M	poor to fair	3-	Cysts.
swc	3505	He,W,Cut,S,P	F-M	fair to good	3-	
swc	3534	Cut,He,W,WR!,P,S/Am,Cy	F-M-L	good to poor	3-	Sapropelized, pyrite.
swc	3543.5	Cut,He,W,P,S/Am	F-M-L	fair to poor	2+/3-	Sapropelized.
swc	3570	Cut,He,W,P,S/Am	F-M-L	fair to good	3-	Sapropelized. Pyrite.

ABBREVATIONS

Am	amorphous	Cy	cysts, algae	W	woody material	F	fine
He	herbaceous	P	pollen grains	C	coal	M	medium
Cut	cuticles	S	spores	R!	reworked	L	large

IKU

TABLE X

ROCK EVAL PYROLYSES

IKU No.	DEPTH (m)	S1	S2	S3	TOC (%)	HYDR. INDEX	OXYGEN INDEX	OIL OF GAS CONTENT S1+S2	PROD. INDEX S1/(S1+S2)	TEMP. max (C)
K4215	760	.03	.34	2.10	1.26	27	167	.38	.09	431
K4224	895	.04	.22	1.66	1.31	17	127	.26	.16	437
K4231	1000	.04	.34	.98	1.31	26	75	.38	.11	426
K4237	1090	.05	.30	1.20	1.34	23	90	.36	.15	436
K4245	1210	.31	.83	1.22	1.44	57	85	1.14	.27	434
K4257	1345	.23	.40	1.74	.88	45	198	.63	.37	432
K4259	1375 Dark grey clayst.	.09	2.04	1.92	4.39	47	44	2.13	.04	433
K4260	1390 Dark grey clayst.	.09	.86	3.38	4.47	19	76	.95	.09	432
K4262	1420 Dark grey clayst.	.20	.94	3.63	3.33	28	109	1.14	.18	435
K4265	1465 Dark grey clayst.	.27	2.70	1.94	4.05	67	48	2.97	.09	256
K4430	1525 Dark grey - grey clayst.	.02	.03	1.54	1.06	3	146	.05	.41	436
K4432	1555 Grey silty clayst.	.06	.35	3.27	1.25	28	262	.41	.16	446
K4435	1600	.11	.30	1.15	1.10	27	105	.41	.28	440
K4436	1615	.10	.21	2.92	.56	38	521	.31	.32	444
K4439	1660	.15	1.04	1.16	1.78	58	65	1.18	.12	436
K5220	1661.8	.49	2.36	1.16	1.92	123	60	2.84	.17	432
K5221	1664.0	.45	3.25	1.44	2.32	140	62	3.70	.12	437
K5222	1666.7	.37	1.84	.98	1.29	142	76	2.21	.17	433
K5223	1667.9	.56	4.26	1.13	.55	774	206	4.82	.12	429
K4440	1675	.41	5.03	3.08	3.10	162	100	5.43	.07	433
K4441	1690	.20	3.15	3.25	2.99	105	109	3.34	.06	438
K4442	1705	.62	4.43	1.01	2.37	187	43	5.05	.12	438
K4911	1720	.82	9.34	2.56	3.79	246	68	10.16	.08	432
K4912	1735	.55	9.62	3.13	3.62	266	86	10.17	.05	424
K4913	1750	.31	7.81	3.08	4.08	191	75	8.12	.04	434

IKU

TABLE X

ROCK EVAL PYROLYSES

IKU No.	DEPTH (m)	S1	S2	S3	TOC (%)	HYDR. INDEX	OXYGEN INDEX	OIL OF GAS CONTENT S1+S2	PROD. INDEX S1/(S1+S2)	TEMP. max (C)
K4916	1795	.70	14.12	5.33	4.57	309	117	14.82	.05	431
K4917	1810	.62	15.11	1.38	5.03	300	28	15.74	.04	430
K4919	1840	1.33	18.16	1.36	4.69	387	29	19.48	.07	428
K4921	1870	.70	16.57	1.73	4.84	342	36	17.27	.04	42
K4923	1900	1.74	22.80	8.08	4.38	521	185	24.54	.07	432
237	1901	.79	16.22	1.09	7.75	209	14	17.01	.05	433
	Dark green,grey clayst.									
K4993	1915	1.29	17.74	1.71	5.43	327	31	19.02	.07	430
K4994	1930	1.26	22.51	1.60	6.76	333	24	23.77	.05	428
K4995	1945	1.26	24.44	1.83	7.53	325	24	25.70	.05	431
K4996	1960	1.78	28.00	1.74	9.71	288	18	29.78	.06	423
K7997	1975	1.54	26.04	1.84	10.06	259	18	27.58	.06	417
K4998	1990	1.81	27.12	1.69	10.01	271	17	28.93	.06	423
K4999	2005	1.18	26.62	6.66	11.07	240	60	27.80	.04	441
229	2011	2.18	33.12	2.05	13.14	252	16	35.30	.06	430
	Green grey clayst.									
K5000	2020	1.55	26.10	6.27	9.79	267	64	27.65	.06	425
	Dark grey clayst.									
K5224	2043.0	.46	1.08	1.77	1.98	55	90	1.55	.30	440
K5005	2080	1.33	22.54	7.01	8.42	268	83	23.86	.06	426
K5013	2200	1.69	38.80	6.44	9.10	426	71	40.50	.04	435
K5014	2215	1.05	24.47	7.50	7.46	328	101	25.52	.04	432
K5015	2230	1.17	24.30	6.96	10.26	237	68	25.47	.05	429
216	2239	1.98	11.44	2.55	15.50	74	16	13.42	.15	450
	Coal									
K5016	2245	.67	13.05	6.30	7.63	171	83	13.71	.05	430
K5019	2290	.64	21.67	6.65	19.00	114	35	22.32	.03	436
K5020	2305	.85	24.92	6.43	24.40	102	26	25.77	.03	435
K5023	2350	.06	.18	6.91	.80	22	864	.24	.26	447

IKU

TABLE X

ROCK EVAL PYROLYSES

IKU No.	DEPTH (m)	S1	S2	S3	TOC (%)	HYDR. INDEX	OXYGEN INDEX	OIL OF GAS CONTENT S1+S2	PROD. INDEX S1/(S1+S2)	TEMP. max (C)
K5024	2365	.81	.90	1.07	.48	188	223	1.72	.47	436
K5026	2395	.08	.33	8.20	.62	53	1323	.41	.19	419
K5027	2410	.87	20.96	6.95	10.55	199	66	21.84	.04	433
197	2429	.97	9.87	9.79	6.72	147	146	10.84	.09	435
	Grey green claryst.									
K5029	2440	.76	29.14	2.91	8.81	331	33	29.90	.03	439
K5030	2455	1.31	29.78	3.47	12.40	240	28	31.09	.04	435
K5083	2470	.68	16.59	1.25	8.19	203	15	17.27	.04	439
	Dark grey silty claryst.									
K5084	2485	.74	17.92	1.29	6.05	296	21	18.66	.04	442
	Grey to dark brown silty claryst.									
K5087	2530	.98	2.31	.94	1.04	222	91	3.29	.30	449
	Grey silty claryst.									
K5088	2545	1.10	4.50	1.18	2.58	175	46	5.61	.20	439
K5099	2700	.13	.20	1.42	.64	31	221	.33	.39	462
K5104	2775	.37	.98	4.37	.82	120	533	1.35	.27	458
K5109	2850	1.28	1.48	1.40	.51	291	274	2.76	.46	465
169	2902	1.80	13.03	1.39	4.37	298	32	14.83	.12	439
	Siltst.									
K5114	2925	1.11	1.52	1.38	.67	227	207	2.63	.42	455
K5194	2940	.12	1.11	1.40	1.59	70	88	1.23	.10	451
K5197	2985	.15	.33	1.38	.95	35	145	.48	.31	446
	Grey partly silty claryst.									
K5200	3030	1.58	14.35	1.58	7.21	199	22	15.93	.10	440
	Dark grey claryst.									
K5201	3045	.14	1.25	1.09	6.59	19	17	1.39	.10	451
	Dark grey claryst.									
K5205	3105	.06	.68	1.19	1.13	60	106	.73	.08	444
K5208	3150	.06	.81	1.28	1.63	50	79	.87	.07	450
K5209	3165	.21	.85	.15	1.51	56	10	1.06	.20	446
K5210	3180	.35	1.89	1.47	1.73	109	85	2.25	.16	435
153	3201	1.93	3.22	3.02	1.52	212	199	5.15	.37	448
K5212	3210	.52	2.40	4.35	2.41	100	180	2.91	.18	434

IKU

TABLE X

ROCK EVAL PYROLYSES

IKU No.	DEPTH (m)	S1	S2	S3	TOC (%)	HYDR. INDEX	OXYGEN INDEX	OIL OF GAS CONTENT S1+S2	PROD. INDEX S1/(S1+S2)	TEMP. max (C)
K5214	3240	.21	1.99	1.39	1.92	103	72	2.20	.10	444
K5216	3270	.96	5.16	1.03	3.04	170	34	6.12	.16	442
148	3275	.92	2.18	2.81	1.35	162	208	3.10	.30	441
K5218	3300	.65	9.83	1.22	4.88	201	25	10.48	.06	43
K5225	3330	.41	2.71	1.22	2.53	107	48	3.12	.13	440
K5226	3345	.57	4.02	1.71	2.78	145	62	4.59	.12	445
K5228	3375	.84	2.59	1.24	1.93	134	64	3.43	.24	446
K5231	3420	.21	.78	1.27	1.37	57	93	.99	.21	451
136	3425	.19	.53	2.08	1.04	51	200	.72	.26	442
K5232	3435	.24	.56	1.29	1.09	51	119	.80	.30	441
134	3445	.21	.92	2.41	1.25	73	193	1.13	.19	443
K5233	3450	.18	.56	1.18	1.14	49	104	.74	.24	448
K5234	3465 Shaly coal	6.73	133.86	4.23	26.70	501	16	140.59	.05	440
132	3472	.24	1.17	2.72	1.33	88	204	1.42	.17	452
K5235	3480	.22	.15	1.45	1.22	13	119	.38	.59	443
127	3508 Limest.	.93	2.44	2.56	3.16	77	81	3.36	.28	443
125	3515.5 Limest.	.46	.88	2.57	1.11	79	232	1.34	.34	456
K5242	3521.9	.64	1.51	.52	1.15	131	45	2.15	.30	447
K5243	3522.5	1.12	2.24	.43	1.45	154	29	3.36	.33	439
K5245	3523.4	.25	.56	.59	.95	59	62	.81	.30	451
K5244	3524.5	.55	1.35	.62	1.26	107	49	1.90	.29	443
K5238	3525	.22	.58	1.28	1.16	50	110	.80	.28	450
K5246	3525.5	.58	1.64	.50	1.88	87	27	2.22	.26	447
124	3534	2.00	3.74	3.30	3.37	111	98	5.74	.35	439
K5239	3540	.23	.54	1.17	1.24	44	95	.77	.30	449