

MOBIL EXPLORATION NORWAY INC.

WELL 7321/7-1

HOLE / CASING / MUD / CEMENTING DATA

HOLE SIZE / MUD TYPE	CASING AND THREAD	SHOE DEPTH (mRKB)	CEMENTING	
36" : M.L. - 611m SEAWATER / VISCOUS PILLS	30", 310 LB/FT VETCO ALT, GRADE B	609	2195 sx G 0.6 gal/sx ATL	15.8 ppg SEAWATER
26" : 611m - 982m SEAWATER / VISCOUS PILLS	20", 133 LB/FT DRILL-QUIP S60, GRADE X56	970	1590 sx G 2.25% GEL 1340 sx G 0.2 gal/sx ATL	13.0 ppg FRESHWATER 15.9 ppg SEAWATER
17½" : 982m - 1435m GELLED SEAWATER/POLYMER	13 3/8", 72 LB/FT BUTTRESS, GRADE L80	1425	650 sx G 2.25% GEL 450 sx G	13.0 ppg FRESHWATER 15.9 ppg SEAWATER
12¼" : 1435m -2550m GELLED SEAWATER/POLYMER	—	—	—	—

ABANDONMENT PLUGS (mRKB)

CEMENT PLUGS SET AT:

- 3400 - 3290
- 2725 - 2620
- 2440 - 2330
- 2130 - 1945
- 1475 - 1350
- 775 - 525

FIGURE 1.4
FM-222

MOBIL EXPLORATION NORWAY INC.

WELL 7321/7-1

RFT RESULTS

Date/Run No.	Depth mRKB	Hydrostatic Mud Pressure psia	Formation Pressure		Temp. °F	Remarks
			psia	M pa		
24 SEP 88						
RUN 1						
1	1999.0	3288	—	—	122	DRY TEST
2	2002.0	3291	2787.2	19.218	130	MODERATE PERMEABILITY
3	2003.0	3292	2787.6	19.221	134	MODERATE PERMEABILITY
4	2006.0	3296	2791.6	19.248	137	MODERATE PERMEABILITY
5	2007.5	3297	2792.7	19.256	138	MODERATE PERMEABILITY
6	2012.0	3305	—	—	139	DRY TEST
7	2013.5	3307	—	—	140	DRY TEST
8	2019.0	3317	—	—	141	DRY TEST
9	2029.5	3335	—	—	141	DRY TEST
10	2068.0	3405	—	—	142	DRY TEST
11	2074.5	3409	—	—	142	DRY TEST
12	2388.0	3916	3397.2	23.424	145	MODERATE PERMEABILITY
13	2389.0	3914	3401.4	23.453	156	LOW PERMEABILITY
14	2388.0	3910	3396.5	23.419	160	2 3/4 GALLON SAMPLE
15	2003.0	3291	2786.3	19.212	158	LOW PERMEABILITY
16	2002.0	3288	2783.7	19.194	147	LOW PERMEABILITY
17	2002.5	3287	2784.5	19.199	145	1 GALLON SAMPLE CHAMBER
15 OCT 88						
RUN 2						
1	2216.4	3710	—	—	157	DRY TEST
2	2389.8	3999	3396.6	23.420	160	LOW PERMEABILITY
3	2512.1	4201	—	—	162	DRY TEST
4	2518.1	4209	—	—	163	NO SEAL
5	2572.8	4292	—	—	164	NO SEAL
6	2581.4	4305	—	—	168	NO SEAL
7	2512.1	4186	—	—	168	NO SEAL. TOOL CHECK
8	2389.8	3985	2399.0	23.436	164	LOW PERMEABILITY. TOOL CHECK
9	2644.4	4418	—	—	165	NO SEAL
10	2668.1	4458	—	—	168	NO SEAL
11	2672.8	4464	(3424.3)	(23.611)	171	VERY LOW PERMEABILITY. NOT STABILIZED
12	3344.1	5557	—	—	210	DRY TEST
13	3348.0	5565	5036.8	34.728	216	LOW PERMEABILITY
14	3352.8	5569	—	—	218	DRY TEST
15	3361.4	5585	—	—	218	DRY TEST
16	3348.0	5556	5035.6	34.721	219	2 3/4 GALLON SAMPLE
17	3450.8	5733	—	—	222	DRY TEST
18	3456.2	5736	—	—	229	DRY TEST
19	3458.0	5738	—	—	230	DRY TEST
20	3481.0	5778	—	—	232	DRY TEST
21	3474.7	5763	—	—	235	DRY TEST
22	2389.8	3985	3396.0	23.416	171	1 GALLON SAMPLE

FIGURE 2-11

Mobil Exploration 7321/7-1INTERVAL SUMMARY36" hole for 30" casingRKB - 611 M

This section was drilled using seawater and high viscosity bentonite pills consisting of 25-30 ppg bentonite flocculated with lime. No hole cleaning problems were encountered.

The well was spudded on the 26th of June with a 17 1/2" bit and 36" hole opener, but by 528 m. the angle build up of the hole required the rig to be re-positioned for a new spud.

A 17 1/2" bit was run in, and the hole re-spudded on 27th June. This section was drilled from seabed (498m) to 622m pumping high viscosity pills on each connection. The hole was then opened to 36" to 611m, and after a wiper trip to 505m, filled with lime free bentonite mud. The 30" casing was run on the base plate to 609m and cemented without problems.

INTERVAL SUMMARY

26" hole for 26" casing

611 m - 983 m

The cement and 30" casing shoe were drilled out with a 26" bit, and then a 9 7/8" pilot hole was drilled from 626.5 - 982.5 m using seawater, and as on the previous section, high viscosity bentonite pills were pumped on connections. While attempting a wiper trip from 982.5m, the pipe became stuck for a short time at 964m and then required back reaming to 626m using the topdrive, and high viscosity pills were pumped as required. On running back to T.D. the hole required washing and reaming from 636m. The hole was cleaned with 2 x 125 bbl. high viscosity pills, and then displaced to 11.4 ppg mud. On pulling out to run Schlumberger logs, several tight spots were again encountered.

Schlumberger were unable to pass 869m, and so the 9 7/8" bit was run back in to 840m before reaming was required to T.D. On pulling out to 635m back reaming was again required. The bit was run back to 785m, reamed to T.D., and a 300 bbl. high viscosity pill displaced with 125 bbl. 11.4 ppg mud. Pulling out encountered more tight spots and the pipe became stuck at 667m. The pipe was worked free and pulled out, and it was decided to abandon logging of the 9 7/8" hole.

A 26" bit was run and the 9 7/8" hole opened from 626.5m using seawater and high viscosity pills each single. At 806m a wiper trip to the 30" casing shoe was performed without problems. However after further drilling to 884m it was not possible to pull out on a connection, and back reaming was necessary from 884 to 854m, and the pipe was stuck for a short time at 870m, high viscosity pills were pumped as required. The pipe was worked across this tight section before resuming drilling. No further problems were encountered to T.D. (983m), and a wiper trip to the 30" casing shoe encountered no tight hole. After sweeping the hole with high viscosity mud, the pipe was pulled out leaving only seawater in the hole this time, and Schlumberger ran side-wall cores successfully.

After a further wiper trip logging encountered a tight section from 955 to 983m. But otherwise the hole was in good condition. The 20" casing was run to 962m but from this depth required washing and working down to land it at 970m, and was then cemented without problems.

Mobil Exploration 7321/7-1INTERVAL SUMMARY17 1/2" hole 13 3/8" casing983m - 1435m

The cement, 20" casing shoe and 5m new formation was drilled out with 17 1/2" bit for a L.O.T. of 9.9 ppg. equivalent mud density.

Due to this low L.O.T. the bit was pulled out of hole for a cement squeeze job. The 17 1/2" bit was run back in hole and cement tagged at 967m. Washed down to 968m and hole was displaced to NaCl/PAC, according to program and treated with 0.5 ppb sodium bicarbonate.

After waiting on cement, drilling continued to 988m for another L.O.T. (10.9 ppg equivalent mud density). While drilling ahead to 1022m, a rapid loss of 220 bbls to the formation occurred. The annulus was displaced to sea water and the bit was pulled out of hole for a new B.H.A.

Ran bit back to T.D. and spotted a 145 ppb bentonite/sea water pill in open hole in order to heal formation.

A formation integrity test was performed before the well was washed to 1916m. The formation was still taking mud so the hole was filled with sea water and drilled to 1038m for another cement squeeze job.

Waited for cement to set while squeezing every hour. The well was washed to T.D. and a 60 bbl high viscosity pill was pumped prior to POOH for another squeeze cement job.

After waiting on cement, the cement was drilled out from 961m and the active mud system was changed to gel/sea water while drilling, and reduced the mud density from 9.7 ppg to 8.9 ppg. Drilling continued to 1038 m where lost circulation occurred. The bit was pulled out of hole for a new B.H.A. and ran back to T.D., where a 40 bbl, 25 ppb coarse LCM pill was spotted and squeezed.

Bit was pulled to the 20" shoe at 970 m and the mud was conditioned due to heavy cement contamination before further drilling.

At 1064m lost circulation occurred, and a 50 bbl LCM pill was pumped while drilling, establishing full returns until 1069m and bit was pulled out of hole for another cement squeeze job.

Ran in hole and tagged cement at 989m, washed and drilled cement to 1053m and washed to T.D. at 1069m.

Continued drilling down to 1122m and lost circulation. A 50 bbls LCM pill was pumped prior to pull out of hole to 1060m where a LCM pill was spotted in the shoe. Ran back to T.D. and broke circulation.- no returns. Pumped another 50 bbl LCM pill prior to pulling out of hole. Hole tight from 1028m to shoe. The stabilizers showed to be "balled" with clay - possible causing the lost returns.

Ran back to T.D. at 1060m and continued drilling to 1143 where circulation was lost. Pumped 50 bbls LCM pill (33 ppb) and established 70% circulation while continuing drilling to 1162m. Circulated bottoms up and pulled out of hole for another cement job.

B.O.P's were tested prior to running in hole with a 17 1/2" bit. Cement was tagged at 1068m and pressure tested with no success. Another cement plug was set and later tagged at 965m and drilled to 1155m. A pressure test was performed and proved negative. Circulated bottoms up while treating mud system for cement contamination and increased bentonite concentration to 20 ppb.

Continued drilling 17 1/2" hole to 1165m where circulation was lost. Pumped a 50 bbl LCM pill and established full returns.

The hole was drilled to 1214m and a trip was made to change bit. Ran back to 1214m and increased bentonite concentration to + 25 ppb to make bentonite particles help in sealing off lost circulation zones. Drilled to 1260m and lost circulation. Pumped 50 bbl LCM-pill and established full returns.

Continued drilling to 1302m and lost circulation. Pumped 35bbl LCM pill while drilling. Established 85% returns, drilled ahead to 1349m and lost circulation.

Pumped 50 bbls LCM pill to be left in open hole prior to pulling out of hole for a new bit. Ran in hole and washed/reamed from 20" casing shoe to T.D. at 1349m. Continued drilling, lost circulation at 1352m. Pumped 35 bbl LCM and regained 80% returns while drilling ahead.

A decision was made to decrease bentonite concentration to 15-18 ppg in order to run mud density at maximum of 9.0 ppg. Compensated bentonite with xanthan gum in order to maintain rheology, with YP of approximately 15 lb/100 ft².

Continued drilling to 1435m and lost circulation. Hole was swept with 60 bbls LCM pill prior to back reaming out to 20" casing shoe. Hole was tight from 1409-1200m. Washed and reamed to T.D. (Tight 1350-1390, 1426-T.D.)

Decision was made to run 13 3/8" casing, and hole was swept with 62 bbl LCM pill and a 1.9 ppb Nut Plug fine pill was spotted in open hole prior to pulling out of hole for Schlumberger logs.

13 3/8 casing was run to 1425m with no problems. Lost 85% returns when cement reached approximately 122m above 13 3/8 casing shoe. Total losses during displacement were 1180 bbls.

MOBIL EXPLORATION 7321/7-1INTERVAL SUMMARY

12 1/4" hole for 9 5/8" casing.
1435 m - 3550 m.

This first part of this section was drilled using a Bentonite/seawater mud, so as to ensure minimum mud densities (9.0 ppg maximum), and supplemented with polymers for rheology and fluid loss control.

The cement and 13 3/8" casing shoe were drilled out and new formation to 1440m. The leak off test performed at this point proved to be unsatisfactory and two cement plugs had to be squeezed around the casing shoe before the leak-off test was accepted. At 1478m returns were lost and a LCM-pill was pumped followed by cement plugs and finally a DOB2C-pill (Diesel Oil Bentonite Cement-pill), before an acceptable F.I.T. was performed.

From this depth, 1478m, until a depth of 1885m was reached, extreme mud losses to the formation were experienced. This was most likely due to a vertical fault in the formation.

A total of 27 DOB2C-pills were pumped along with a total of 5100 bbls LCM-pills. Total mud losses in this part of the section added up to 19650 bbls. As the last cement was drilled out at 1885m, the F.I.T. proved to hold an equivalent mud weight of 11.4 ppg. The hole was displaced to a new seawater/bentonite/polymer mud with specifications as per operators agreements. The drilling commenced to 2450m at which point intermediate logging runs were performed. During this last interval, 1885m - 2450m, four cores were cut. Also the mud was gradually converted from a bentonite/polymer mud to a polymer mud, with additions only containing seawater and polymers.

As bottoms up mud after the logging reached the surface, 2 ppm H₂S was monitored, most likely caused by bacterial breakdown of the polymers. To prevent further bacterial attack on the polymers, Oilex biocide was added to the system. Also the pH was raised from the range of 8.5 to 9.5 and 0.4 ppb zinc carbonate was added to treat out sulphates.

The drilling commenced with a rate of penetration of +/- 3 m/hr without any further problems. The mud was maintained with additions of various polymers premixed in seawater, as needed. The centrifuge was run almost constantly and desilter occasionally. The shakers were equipped with 60 mesh top screens and 120-200 mesh bottom screens, which ensured a clean fluid with minimum maintenance cost.

Drilling continued without incident to T.D. at 3550m. During the last 50m drilled, the mud weight was raised twice due to increased pore pressures and connection gas. Final mudweight was 9.7 ppg.

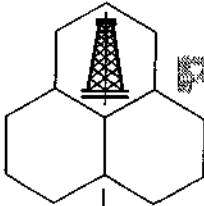
While circulating the hole clean prior to the logging, biocide was added to the mud and pH raised to 10 to prevent bacterial growth in the mud.

Logging was performed over a 71 1/2 period. No wiper trip proved to be needed as the hole stayed stable and the logging tools got down to T.D. each time without any problems. The only incident that occurred was when the RFT-tool became stuck for a while at approximately 1860m. The hole was then plugged and abandoned as per Mobil's program.

Having overcome the problem of lost circulation in the upper part of this interval, the employment of a simple and economical seawater/polymer fluid proved to be entirely satisfactory.

Although the caliper indicated considerable erosion of the well-bore down to 2000m, and moderate erosion down to 2700m, this might well be expected, taking account of the extended period for which this section was exposed. However, the final section in this interval yielded excellent calliper readings. The suitability of the system was indicated by the absence of drilling problems such as tight hole, fill etc. and no problems during 72 hours of logging also.

However, when using a low pH seawater/polymer mud it is strongly recommended to add a biocide to all mud made up. A sufficient concentration of biocide would prevent bacterial growth and thereby eliminate the risk of polymer degradation and following hydrogen sulphide production. As the mud system performed well, no other recommendations are made.



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PROJECT NO. 900788

SOURCE ROCK EVALUATION

OF MATERIAL FROM

BARENTS SEA WELL: 7321/7-1

VOLUME I

BA-89-569-1

19 APR. 1989

REGISTRAT
OLJEDIREKTORATET

A Petroleum Geochemistry Report

Prepared by Petra-Chem Limited

On Behalf Of

Mobil Exploration Norway Inc.

MARCH 1989



SUMMARY

Two hundred and seventy-one cuttings samples and one hundred and eleven sidewall cores were used to evaluate potential source rocks encountered during the drilling of Barents Sea well 7321/7-1.



1. INTRODUCTION

A total of two hundred and seventy-one cuttings samples and one hundred and eleven sidewall cores were used to compile a detailed geochemical source rock evaluation of the sediments drilled by Barents Sea Well 7321/7-1.

A maturation profile for the well was established using vitrinite reflectance values from reflected light microscopy, supported mainly by spore colouration and thermal alteration index assessed ratings in white transmitted light. The organic richnesses of the various sediments evaluated were determined using total organic carbon (TOC) measurements. In most instances, only those sediments containing greater than 0.50%wt. TOC were further evaluated for their hydrocarbon generative potentials, using pyrolysis measurements. Kerogen typing of the sediments was completed using microscopic techniques.



2. SAMPLE MATERIAL AVAILABLE FOR STUDY

The cuttings samples were all received wet and unwashed in tin cans. Before proceeding with washing, each tin was punctured and a sample of the headspace gas was removed for analysis. The cans were then opened and the sediments were thoroughly washed with water to remove all traces of drilling mud. Any potential contaminant (such as pipedope and lost circulation material) was noted during sample washing. After thorough washing, all the cuttings samples were air dried under controlled conditions at 40°C for not longer than twelve hours. Once dry, the cuttings samples were carefully picked to avoid cavings and to concentrate potentially organic rich lithologies for examination. Detailed descriptions of the cuttings samples are given in Table 7 of this report.

The sidewall cores were all received in screw top glass jars. All the sidewall cores were thoroughly washed with water and scraped free of mudcake (if necessary), prior to controlled air drying and crushing. Lithological descriptions of the sidewall cores are included in Table 2 of the report.



HEADSPACE ANALYSIS - CONCENTRATION OF INDIVIDUAL GASES

WELL NO: 7321/7-1

DEPTH (m)	IC4 /NC4	C1 ppm	C2 ppm	C3 ppm	IC4 ppm	NC4 ppm	IC5 ppm	NC5 ppm	C4 GRP	C5 GRP
990	0.482	2181	2877	4980	879	1821	480	409	2700	889
1000	0.629	6358	7192	7373	839	1333	236	167	2178	403
1010	0.645	67332	33516	17623	1181	1829	199	129	3010	328
1019	0.586	10947	12069	10872	1055	1798	280	207	2853	487
1030	1.121	25553	26617	9586	472	421	46	0	893	46
1037	1.095	29378	26166	7797	320	292	0	0	612	0
1050	1.08	24560	18626	8685	445	412	40	0	857	40
1065	1.000	14993	11756	8322	689	689	65	31	1378	96
1068	0.936	6017	7666	6525	559	597	49	37	1156	86
1080	0.964	4193	3514	3337	295	306	31	0	601	31
1090	0.968	2515	2828	3151	281	290	31	0	571	31
1100	0.812	1916	2338	2512	207	255	26	14	462	40
1100 (R)	0.802	1619	2001	2185	182	227	21	14	409	35
1110	1.184	5797	8016	8935	923	779	84	39	1702	123
1120	1.143	10497	10895	10822	1125	984	130	61	2109	191
1130	0.949	2954	4877	5378	559	589	81	0	1148	81
1140	0.981	5989	9143	11192	1331	1356	304	151	2687	455
1150	0.551	12422	3822	7880	1887	3422	1451	1111	5309	2562

TABLE 1A
cont...



DEPTH (m)	IC4 /NC4	C1 ppm	C2 ppm	C3 ppm	IC4 ppm	NC4 ppm	IC5 ppm	NC5 ppm	C4 GRP	C5 GRP
1160	0.595	12038	10563	21722	5174	8694	3217	2271	13868	5488
1170	0.606	6782	6026	10396	1694	2795	588	416	4489	1004
1180	0.666	6179	5770	9386	1450	2177	416	271	3627	687
1190	0.600	9521	6188	9955	1675	2788	595	431	4463	1026
1200	0.692	2948	2426	4113	606	876	182	150	1487	332
1210	0.730	12492	10419	17622	3078	4214	804	490	7292	1294
1220	0.651	17833	11196	14462	2299	3530	826	579	5829	1405
1230	0.679	37211	22272	23119	3353	4932	1099	760	8285	1859
1240	0.652	19222	13016	15873	2319	3552	794	557	5871	1351
1250	0.642	22180	11166	14421	2341	3646	819	602	5987	1421
1260	0.603	22303	8169	10568	1775	2939	628	526	4714	1154
1270	0.585	31451	12396	16168	2844	4858	1139	930	7702	2069
1280	0.556	34414	13065	17410	3304	5932	1500	1233	9236	2733
1290	0.558	32110	11691	16251	3134	5609	1430	1272	8743	2702
1300	0.531	18676	6413	9198	1992	3751	1084	1052	5772	2136
1310	0.511	19781	6846	8926	1675	3275	818	775	4950	1593
1320	0.540	33212	11773	16654	3380	6259	1719	1569	9639	3288
1330	0.537	30797	14227	20919	4517	8397	2456	2202	12914	4658
1340	0.532	21507	11861	20814	5266	9889	3481	3202	15155	6683
1350	0.542	17912	12747	23274	5890	10855	3773	3363	16745	7136
1360	0.541	27225	7005	11850	3095	5716	2357	2067	8811	4424

TABLE 1A
cont...



DEPTH (m)	IC4 /NC4	C1 ppm	C2 ppm	C3 ppm	IC4 ppm	NC4 ppm	IC5 ppm	NC5 ppm	C4 GRP	C5 GRP
1370	0.541	33842	9209	15969	4287	7921	3220	2953	12208	6173
1380	0.495	10131	3953	6322	1720	3468	1437	1425	5188	2862
1390	0.516	14653	7461	14516	4364	8445	3599	3403	12809	7002
1400	0.523	3504	3435	7243	2183	4176	1727	1703	6383	3430
1410	0.493	17892	8844	18415	5491	11119	4589	4414	16610	9003
1420	0.537	26089	10841	22917	7075	13154	5348	4853	20229	10201
1440	0.405	332	280	1589	423	1043	382	281	1466	663
1450	0.536	6424	5018	8440	1748	3261	930	895	5009	1825
1460	0.551	43411	24329	33017	6699	12144	3376	2905	18843	6281
1470	0.596	115348	62446	75567	14741	24696	6637	5342	39437	11979
1480	0.537	9793	11438	22803	5808	10805	3539	3053	16613	6592
1500	0.496	8423	4414	6197	1252	2522	783	775	3784	1558
1500 (R)	0.497	8005	4201	5904	1195	2406	752	746	3610	1498
1510	0.489	3852	2079	2514	459	937	278	285	1396	563
1520	0.511	9459	5366	7050	1357	2655	795	772	4012	1567
1530	0.516	4878	2516	2037	251	486	103	101	737	204
1540	0.497	6130	2684	2656	370	743	191	197	1113	388
1550	0.493	4476	1241	1386	253	513	157	171	766	328
1557	0.527	4437	1139	1149	190	360	106	101	550	207
1586	0.493	3336	1958	2150	341	691	186	181	1032	367
1586 (R)	0.494	3371	1970	2153	341	690	187	182	1031	369

TABLE 1A
cont...



DEPTH (m)	IC4 /NC4	C1 ppm	C2 ppm	C3 ppm	IC4 ppm	NC4 ppm	IC5 ppm	NC5 ppm	C4 GRP	C5 GRP
1590	0.589	25441	9969	9178	1484	2519	602	546	4003	1148
1595	0.470	1935	1627	2455	557	1186	390	393	1743	783
1610	0.540	1462	719	626	87	161	39	39	248	78
1620	0.461	2656	673	652	115	249	59	62	364	121
1630	0.521	3461	1276	1160	160	307	72	73	467	145
1650	0.571	1656	459	338	40	70	0	19	110	19
1670	0.488	3841	1666	1328	145	297	73	80	442	153
1680	0.470	5561	1969	2222	388	824	232	241	1212	473
1690	0.492	2659	844	774	103	209	48	53	312	101
1700	0.300	479	473	930	183	602	96	93	785	189
1710	0.492	234	148	292	66	134	42	45	200	87
1720	0.529	6651	3357	3738	592	1118	281	268	1710	549
1730	0.571	1129	583	464	64	112	28	25	176	53
1740	0.614	5433	2158	988	94	153	33	33	247	66
1767	0.641	6952	2846	1642	179	279	51	54	458	105
1777	0.582	6478	2328	1417	170	292	65	68	462	133
1786	0.576	3989	1514	1328	193	335	81	477	528	558
1795	0.569	4485	3705	3093	431	757	196	178	1188	374
1800	0.550	2002	2086	2752	492	894	246	238	1386	484
1800 (R)	0.550	1903	1983	2593	461	843	234	216	1304	450
1813	0.596	14157	6450	3617	399	669	137	125	1068	262

TABLE 1A
cont...



DEPTH (m)	IC4 /NC4	C1 ppm	C2 ppm	C3 ppm	IC4 ppm	NC4 ppm	IC5 ppm	NC5 ppm	C4 GRP	C5 GRP
1822	0.560	13760	8130	5687	799	1426	395	378	2225	773
1831	0.605	27711	12134	7174	963	1590	402	349	2553	751
1840	0.634	153793	77077	45047	6322	9960	2532	2059	16282	4591
1849	0.601	55971	34909	21719	3011	5004	1311	1065	8015	2376
1858	0.700	132890	51377	18758	1748	2497	459	358	4245	817
1867	0.714	105393	47049	21623	2762	3865	928	678	6627	1606
1885	0.760	53491	23197	12405	2055	2699	879	571	4754	1450
1900	0.750	110520	25360	8554	1001	1333	335	228	2334	563
1900 (R)	0.760	106634	24603	8324	969	1277	331	222	2256	553
1921	0.916	336943	83531	15384	1373	1498	328	182	2871	510
1948	1.000	394212	107606	19098	1778	1777	342	194	3555	536
1950	0.890	50644	41054	14792	1805	2030	460	276	3846	736
1975	0.019	71525	135084	21246	2344	2300	628	334	4644	962
1990	0.810	26026	14156	6080	1103	1367	564	321	2485	885
2011	0.816	33881	11283	2076	222	272	78	48	494	126
2020	0.772	19082	8903	2086	282	365	120	81	647	201
2029	0.809	16072	8235	1917	247	305	110	76	552	186
2038	0.783	14715	6366	1632	239	305	120	78	544	198
2047	0.760	8045	3999	1038	168	221	112	71	389	183
2056	0.800	32446	4844	824	124	155	85	52	279	137
2065	0.983	41984	11741	1938	241	245	110	54	486	164

TABLE 1A
cont...



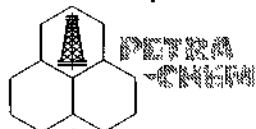
DEPTH (m)	IC4 /NC4	C1 ppm	C2 ppm	C3 ppm	IC4 ppm	NC4 ppm	IC5 ppm	NC5 ppm	C4 GRP	C5 GRP
2074	1.080	49740	7928	842	108	100	62	38	208	100
2083	1.036	112843	20145	3379	649	626	409	182	1275	591
2092	0.938	67881	18229	3302	506	539	294	141	1045	435
2100	0.910	32074	8216	2588	606	665	444	238	1271	682
2110	0.883	79146	18563	4089	727	823	453	231	1550	684
2119	1.037	76175	18057	3671	688	663	420	103	1351	523
2128	1.517	30811	11938	2606	636	419	355	103	1055	458
2137	2.282	158296	39077	8530	2417	1059	981	184	3476	1165
2146	2.528	42028	14632	3658	933	369	346	59	1302	405
2155	3.006	37246	16319	4234	1371	456	549	76	1827	625
2164	2.881	23963	12349	2669	729	253	299	39	982	338
2173	3.293	21821	10039	2183	629	191	232	29	820	261
2182	2.826	11067	6025	1366	342	121	141	24	463	165
2191	4.308	13410	7087	1215	349	81	131	14	430	145
2220	3.22	11825	4109	696	177	55	76	13	232	89
2200	3.94	16622	6947	1146	303	77	108	8	380	116
(R) 2209	1.83	19384	3418	555	143	78	55	7	221	62
2218	1.82	42362	5239	919	301	165	119	14	466	133
2227	1.93	19280	3467	702	222	115	84	16	337	100
2236	1.45	23347	5138	617	180	124	63	-	304	63
2245	0.91	15937	4400	685	251	275	85	9	526	94
2254	4.09	15395	4016	648	221	54	94	16	275	110

TABLE 1A
cont...



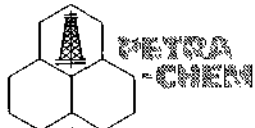
DEPTH (m)	IC4 /NC4	C1 ppm	C2 ppm	C3 ppm	IC4 ppm	NC4 ppm	IC5 ppm	NC5 ppm	C4 GRP	C5 GRP
2263	4.54	20915	9766	2263	1085	239	394	54	1324	448
2272	4.12	12697	5064	757	280	68	108	9	348	117
2281	2.70	16212	6239	1682	583	216	275	66	799	341
2290	2.86	13160	6378	1897	690	241	318	70	931	388
2299	1.86	9733	4144	958	227	122	106	26	349	132
2300	1.44	9807	3380	850	220	153	129	56	373	185
2308	3.30	22501	8351	1602	521	158	208	34	679	242
2317	3.88	5398	1571	216	62	16	24	-	78	24
2326	4.00	20851	5649	795	224	56	79	12	280	91
2335	3.57	24927	6270	877	218	61	76	10	279	86
2344	3.56	11398	2870	390	96	27	36	-	123	36
2353	3.50	10250	3014	615	203	58	79	-	261	79
2362	2.61	15284	4942	1037	261	100	117	21	361	138
2371	2.50	14379	3825	884	272	109	131	29	381	160
2380	1.18	29877	7077	2595	475	403	213	83	878	296
2389	1.18	40490	3538	1297	237	201	106	41	438	147
2398	0.81	14713	7745	2430	307	379	113	83	686	196
2400	0.72	11799	3557	1277	195	269	113	89	464	202
2407	1.68	32806	8182	1832	335	199	114	59	534	173
2416	2.50	47528	12734	2210	443	177	150	30	620	180
2425	1.81	151225	16503	2694	496	274	172	47	770	219

TABLE 1A
cont...



DEPTH (m)	IC4 /NC4	C1 ppm	C2 ppm	C3 ppm	IC4 ppm	NC4 ppm	IC5 ppm	NC5 ppm	C4 GRP	C5 GRP
2434	2.367	50803	5779	571	116	49	53	24	165	77
2443	2.357	13930	1961	285	66	28	21	0	94	21
2452	1.855	61150	7216	1232	295	159	114	33	454	147
2461	1.46	61790	9592	1531	222	152	72	21	374	93
2470	1.504	26537	5586	982	164	109	75	-	273	75
2479	1.657	27817	5231	869	179	108	68	24	287	92
2488	1.321	22605	2541	474	111	84	35	-	195	35
2497	1.95	22317	2744	561	125	64	70	-	190	70
2500	1.88	23714	1748	214	30	16	13.2	2.6	46	16
2506	1.10	56513	4519	448	66	60	-	-	126	-
2515	No Counts Leaky Can									
2524	1.82	7737	1216	185	60	33	10	-	93	10
2533	0.75	12006	1111	163	43	57	18	-	100	18
2542	1.32	34479	2755	248	37	28	13	-	65	13
2551	2.35	66394	3063	228	40	17	18	-	57	18
2560	1.23	219476	6999	307	27	22	12	-	49	12
2569	2.06	39891	2758	311	70	34	28	13	104	41
2578	3.13	36870	3287	403	94	30	29	-	124	29
2587	3.59	29124	2413	296	79	22	-	-	101	-
2596	1.59	34391	2433	231	35	22	-	-	57	-
2599	1.65	2.22x10 ⁷	4098	229	38	23	10	3	68	13

TABLE 1A
cont...



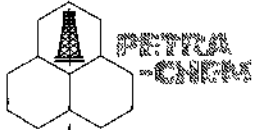
DEPTH (m)	IC4 /NC4	C1 ppm	C2 ppm	C3 ppm	IC4 ppm	NC4 ppm	IC5 ppm	NC5 ppm	C4 GRP	C5 GRP
2605	-	260776	5379	218	24	-	-	-	24	-
2614	-	71397	3556	263	48	-	-	-	79	-
2623	-	29188	2186	239	47	-	-	-	69	-
2632	-	461455	8796	365	44	-	-	-	44	-
2641	-	266839	5816	229	30	-	-	-	30	-
2650	-	67827	3772	245	43	-	-	-	43	-
2659	2.24	36412	2982	309	65	29	-	-	95	-
2668	-	13710	1043	120	28	-	-	-	28	-
2677	-	52327	2114	157	28	-	-	-	28	-
2686	1.21	30742	4355	1021	209	173	117	-	382	117
2695	-	31436	1799	148	32	-	-	-	32	-
2700	1.39	10212	869	168	39	28	27	7	67	34
2704	-	31764	2954	307	72	-	32	9	72	40
2713	2.0	75630	2894	225	48	24	32	-	72	32
2722	1.5	36233	1885	178	27	18	-	-	45	-
2731	-	108527	3039	205	35	-	-	-	35	-
2740	-	52770	2287	182	-	-	-	-	-	-
2749	1.79	20507	2527	404	68	38	-	-	105	-
2758	-	27067	1765	177	-	52	-	-	52	-
2767	4.22	32558	2185	241	114	27	-	-	161	-
2776	0.12	44170	931	41	6.9	56	-	-	63	-

TABLE 1A
cont...



DEPTH (m)	IC4 /NC4	C1 ppm	C2 ppm	C3 ppm	IC4 ppm	NC4 ppm	IC5 ppm	NC5 ppm	C4 GRP	C5 GRP
2785	-	111312	1559	33	-	4	-	-	4	-
2794	-	58742	1464	54	-	-	-	-	-	-
2800	0.35	56969	1432	64	13	37	-	-	-	-
2803	-	77127	2410	92	-	-	-	-	-	-
2812	-	35215	1025	36	-	-	-	-	-	-
2821	-	62658	1373	40	-	-	-	-	-	-
2830	-	27661	615	14	-	-	-	-	-	-
2839	-	22853	703	28	-	-	-	-	-	-
2848	-	47933	788	29	-	-	-	-	-	-
2857	-	41464	792	22	-	-	-	-	-	-
2866	-	6382	329	26	-	-	-	-	-	-
2875	1.96	11402	1213	168	49	25	-	-	74	-
2884	-	252797	1651	54	-	-	-	-	-	-
2893	-	200182	1139	31	-	-	-	-	-	-
2900	1.14	55160	1269	160	33	29	-	-	-	-
2902	3.5	44242	915	98	21	6	-	-	27	-
2902 (R)	1.86	41860	867	85	13	7	-	-	20	-
2911	-	30676	824	36	-	-	-	-	-	-
2920	-	36085	917	46	-	-	-	-	-	-
2929	-	26361	632	22	-	-	-	-	-	-

TABLE 1A
cont...



DEPTH (m)	IC4 /NC4	C1 ppm	C2 ppm	C3 ppm	IC4 ppm	NC4 ppm	IC5 ppm	NC5 ppm	C4 GRP	C5 GRP
2938	-	36552	680	21	-	-	-	-	-	-
2947	-	32015	764	27	-	-	-	-	-	-
2956	-	32464	842	54	-	-	-	-	-	-
2965	-	44748	1030	31	-	-	-	-	-	-
2974	-	17571	561	30	-	-	-	-	-	-
2983	-	10645	410	21	-	-	-	-	-	-
2992*	-	86	-	-	-	-	-	-	-	-
3000	-	19244	416	21	-	-	-	-	-	-
3001	-	23181	513	18	-	-	-	-	-	-
3010	-	26463	427	22	-	-	-	-	-	-
3019	-	31612	395	15	-	-	-	-	-	-
3028	-	29595	420	-	-	-	-	-	-	-
3037	-	36248	513	-	-	-	-	-	-	-
3046	-	28294	372	14	-	-	-	-	-	-
3055	-	29438	319	-	-	-	-	-	-	-
3064	-	25902	309	-	-	-	-	-	-	-
3073	-	24950	333	13	-	-	-	-	-	-
3082	-	24005	257	-	-	-	-	-	-	-
3091	-	15454	259	15	-	-	-	-	-	-
3100	-	24107	234	12	-	-	-	-	-	-

TABLE 1A
cont...



DEPTH (m)	IC4 /NC4	C1 ppm	C2 ppm	C3 ppm	IC4 ppm	NC4 ppm	IC5 ppm	NC5 ppm	C4 GRP	C5 GRP
3109	-	21662	271	-	-	-	-	-	-	-
3118	-	16325	243	-	-	-	-	-	-	-
3127	-	11578	224	-	-	-	-	-	-	-
3136	-	11933	227	15	-	-	-	-	-	-
3154	-	20337	502	53	-	-	-	-	-	-
3163	-	9748	292	-	-	-	-	-	-	-
3172	-	14507	253	-	-	-	-	-	-	-
3181	-	5712	146	-	-	-	-	-	-	-
3190	-	3429	101	-	-	-	-	-	-	-
3199	-	8104	110	-	-	-	-	-	-	-
3202	-	8080	101	-	-	-	-	-	-	-
3208	-	11275	147	-	-	-	-	-	-	-
3217	-	6028	123	-	-	-	-	-	-	-
3226	-	6377	121	-	-	-	-	-	-	-
3235	-	4822	119	-	-	-	-	-	-	-
3244	-	2539	70	-	-	-	-	-	-	-
3253	-	4879	82	-	-	-	-	-	-	-
3262	-	8272	101	-	-	-	-	-	-	-
3271	-	192527	273	-	-	-	-	-	-	-
3280	-	41061	159	-	-	-	-	-	-	-
3289	-	18181	118	-	-	-	-	-	-	-

TABLE 1A
cont....



DEPTH (m)	IC4 /NC4	C1 ppm	C2 ppm	C3 ppm	IC4 ppm	NC4 ppm	IC5 ppm	NC5 ppm	C4 GRP	C5 GRP
3298	-	171176	253	-	-	-	-	-	-	-
3301	-	48854	114	8	-	-	-	-	-	-
3307	-	245361	371	-	-	-	-	-	-	-
3316	-	113261	247	-	-	-	-	-	-	-
3325	-	380636	434	-	-	-	-	-	-	-
3334	-	56776	193	-	-	-	-	-	-	-
3343	-	48670	669	95	-	-	-	-	-	-
3352	-	25239	810	102	-	-	-	-	-	-
3361	-	33309	393	-	-	-	-	-	-	-
3370	-	12066	240	-	-	-	-	-	-	-
3379	-	10872	112	-	-	-	-	-	-	-
3388	-	22089	113	-	-	-	-	-	-	-
3397	-	10397	89	-	-	-	-	-	-	-
3406	-	21475	103	-	-	-	-	-	-	-
3415	-	14782	108	-	-	-	-	-	-	-
3416	-	18888	102	12	-	-	-	-	-	-
3424	-	12642	91	-	-	-	-	-	-	-
3433	-	18755	118	-	-	-	-	-	-	-
3442	-	13633	52	-	-	-	-	-	-	-
3451	-	11128	55	-	-	-	-	-	-	-
3460	-	11201	77	-	-	-	-	-	-	-

TABLE 1A
cont...



DEPTH (m)	IC4 /NC4	C1 ppm	C2 ppm	C3 ppm	IC4 ppm	NC4 ppm	IC5 ppm	NC5 ppm	C4 GRP	C5 GRP
3469	-	11980	69	-	-	-	-	-	-	-
3478	-	28635	127	-	-	-	-	-	-	-
3487	-	36100	152	-	-	-	-	-	-	-
3496	-	34082	189	-	-	-	-	-	-	-
3500	-	41543	216	20	-	-	-	-	-	-
3505	-	28998	135	-	-	-	-	-	-	-
3514	-	23242	104	-	-	-	-	-	-	-
3523	-	27562	108	-	-	-	-	-	-	-
3532	-	14328	99	-	-	-	-	-	-	-
3541	-	20709	117	-	-	-	-	-	-	-
3550	-	45145	215	-	-	-	-	-	-	-

Key

- R = Repeat value
- = Below detection limit
- * = Open can

TABLE 1A



HEADSPACE ANALYSIS - VOLUMES

WELL NO: 7321/7-1

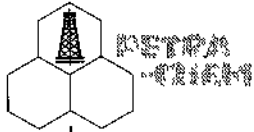
DEPTH (m)	VOLUME HEADSPACE (mls)	VOLUME CUTTINGS (cm ³)	DRY wt (g)
990	135	1030	286.4
1010	140	1020	329.7
1019	170	1025	191.9
1030	165	1060	273.4
1037.5	150	1035	301.3
1000	186	1060	483.4
1050	100	1030	431.2
1065	70	1040	294.1
1068	110	1020	277.3
1080	95	1050	249.4
1090	115	1025	187.1
1100	190	1090	192.1
1110	110	1075	178.5
1120	65	1040	246.8
1130	175	1000	263.0
1140	100	1035	256.0
1150	185	1000	255.9
1160	130	1035	300.4
1170	135	1000	349.9
1180	135	1000	305.8

TABLE 1B
cont...



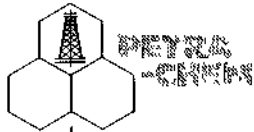
DEPTH (m)	VOLUME HEADSPACE (mls)	VOLUME CUTTINGS (cm ³)	DRY wt (g)
1190	135	1060	239.8
1200	120	1045	332.7
1210	160	1060	202.1
1220	130	1015	342.6
1230	75	1035	415.0
1240	120	1000	413.5
1250	110	1045	436.1
1260	110	1070	373.7
1270	95	1050	384.6
1280	85	1060	338.3
1290	65	1025	424.7
1300	140	1105	315.7
1310	110	1070	365.3
1320	45	1045	515.2
1330	60	1040	573.5
1340	160	1060	500.5
1350	180	1070	588.6
1360	90	1075	339.6
1370	70	1055	347.5
1380	210	925	273.3
1390	120	010	158.9
1400	180	1115	299.0

TABLE 1B
cont...



DEPTH (m)	VOLUME HEADSPACE (mls)	VOLUME CUTTINGS (cm ³)	DRY wt (g)
1410	160	1070	510.1
1420	105	1050	285.9
1440	320	1090	614.5
1450	95	1045	595.8
1460	105	1010	510.0
1470	145	995	510.2
1480	350	1025	471.2
1500	132	918	258.4
1510	205	1020	340.7
1520	50	995	232.1
1530	155	995	393.1
1540	125	1120	483.4
1550	165	1015	595.9
1557	45	1005	156.6
1586	375	1015	164.0
1590	120	1025	409.9
1595	270	785	212.0
1610	165	1000	303.9
1620	150	1000	201.9
1630	150	1010	261.7
1650	120	1000	302.2
1670	155	1000	326.0

TABLE 1B
cont...



DEPTH (m)	VOLUME HEADSPACE (mls)	VOLUME CUTTINGS (cm ³)	DRY wt (g)
1680	90	1000	208.7
1690	150	1015	188.8
1700	170	885	272.6
1710	150	1045	202.2
1720	95	1015	129.1
1730	150	1025	289.0
1740	160	1000	259.5
1767	165	1030	337.5
1777	135	1025	235.9
1786	250	1030	173.4
1795	210	995	128.9
1800	240	815	180.7
1813	180	965	417.8
1822	220	1050	306.1
1831	105	1030	366.3
1840	105	1015	398.2
1849	160	1020	596.4
1858	210	1020	461.0
1867	130	1000	306.0
1885	280	775	349.4
1900	180	875	534.8

TABLE 1B
cont...



DEPTH (m)	VOLUME HEADSPACE (mls)	VOLUME CUTTINGS (cm ³)	DRY wt (g)
1921	80	1050	403.5
1948	185	1010	442.4
1950	355	700	260.8
1975	160	1050	287.9
1990	170	885	200.9
2011	190	917	362.4
2020	185	1010	396.3
2029	225	970	564.7
2038	245	1000	476.1
2047	220	1010	500.7
2056	190	1015	496.2
2065	165	1035	522.0
2074	175	1050	252.1
2083	150	1060	695.1
2092	205	947	481.3
2100	270	867	364.7
2110	200	1050	534.3
2119	195	1065	464.8
2128	230	1010	472.6
2137	150	1010	405.4
2146	170	1015	397.1
2155	210	1005	410.9
2164	190	1010	390.5

TABLE 1B
cont...



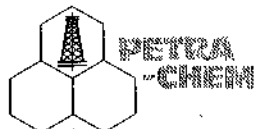
DEPTH (m)	VOLUME HEADSPACE (mls)	VOLUME CUTTINGS (cm ³)	DRY wt (g)
2173	140	1005	276.0
2182	250	1000	194.8
2200	180	925	328.4
2209	140	1000	379.2
2218	120	1000	383.1
2227	180	1020	311.8
2236	130	1030	369.8
2245	160	1000	353.0
2254	140	1010	464.7
2263	90	995	557.5
2272	210	1055	409.9
2281	140	990	492.5
2290	130	1050	543.7
2300	150	1445	507.2
2308	170	1115	526.8
2317	110	1000	460.7
2326	60	1020	498.1
2335	80	1030	474.6
2344	110	1110	392.7
2353	90	1000	401.9
2362	150	1000	329.2
2371	185	1080	341.7
2380	130	1060	350.6

TABLE 1B
cont...



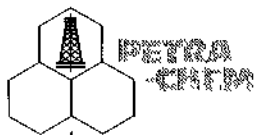
DEPTH (m)	VOLUME HEADSPACE (mls)	VOLUME CUTTINGS (cm ³)	DRY wt (g)
2389	330	1070	597.3
2398	190	1070	146.5
2400	198	1237	538.1
2407	190	1015	294.4
2416	45	980	525.3
2425	100	1015	410.3
2434	50	1040	309.2
2443	150	1000	181.3
2452	110	1055	614.2
2461	160	1045	525.3
2470	155	1020	565.8
2479	350	985	562.9
2488	305	1050	330.8
2497	275	1030	304.6
2500	215	785	350.5
2506	130	1000	259.7
2515	180	1035	123.7
2524	275	960	141.5
2533	195	1055	278.0
2542	175	1000	248.3
2551	155	990	222.3
2560	85	1000	290.0
2569	95	1010	288.0

TABLE 1B
cont...



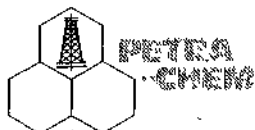
DEPTH (m)	VOLUME HEADSPACE (mls)	VOLUME CUTTINGS (cm ³)	DRY wt (g)
2578	135	1035	451.3
2587	160	1015	250.0
2596	160	1020	303.9
2599	125	930	348.4
2605	50	1020	352.7
2614	150	1020	301.9
2623	150	1025	316.1
2632	85	1000	277.7
2641	55	1050	282.9
2650	80	1040	317.4
2659	105	1045	314.9
2668	195	1010	237.3
2677	120	1055	143.3
2686	60	1030	459.1
2695	155	1035	384.7
2700	95	960	408.9
2704	125	1030	437.6
2713	65	1035	259.5
2722	120	1000	492.0
2731	85	1080	382.3
2740	110	1050	424.0
2749	100	1070	413.4
2758	80	1000	342.0

TABLE 1B
cont...



DEPTH (m)	VOLUME HEADSPACE (mls)	VOLUME CUTTINGS (cm ³)	DRY wt (g)
2767	155	1045	533.6
2776	160	1025	615.5
2785	90	1020	694.2
2794	120	1025	586.4
2800	150	905	554.5
2803	100	1010	759.6
2812	80	1010	732.2
2821	110	1015	756.2
2830	60	1000	491.3
2839	85	1050	593.4
2848	80	1000	658.4
2857	155	1050	605.5
2866	185	1020	693.2
2875	145	1060	798.5
2884	75	1050	716.5
2893	90	1065	717.7
2900	85	970	928.5
2902	120	1075	501.8
2911	150	1010	726.4
2920	90	1050	708.2
2929	185	1010	666.5
2938	150	1060	635.5
2947	100	1040	658.0

TABLE 1B
cont...



DEPTH (m)	VOLUME HEADSPACE (mls)	VOLUME CUTTINGS (cm ³)	DRY wt (g)
2956	90	1000	697.4
2965	90	1025	702.2
2974	110	1030	648.4
2983	110	980	294.7
2992	335	1005	666.5
3000	145	910	754.0
3001	55	1015	679.6
3010	110	1000	664.9
3019	90	1025	597.3
3028	100	1020	659.8
3037	60	1010	723.8
3046	110	995	581.6
3055	140	1020	679.6
3064	120	1010	669.8
3073	90	1050	638.7
3082	110	1005	554.9
3091	70	1050	694.7
3100	170	885	548.6
3109	140	1050	713.1
3118	135	1020	719.0
3127	130	1050	724.3
3136	100	1030	769.7
3154	110	1045	849.1

TABLE 1B
cont...



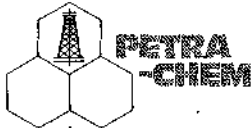
DEPTH (m)	VOLUME HEADSPACE (mls)	VOLUME CUTTINGS (cm ³)	DRY wt (g)
3163	125	1050	606.8
3172	85	1040	630.4
3181	120	1050	576.4
3190	170	1025	531.3
3199	160	1020	498.5
3202	310	745	367.1
3208	185	1000	474.4
3217	150	1055	689.6
3226	110	1015	630.2
3235	170	1050	558.8
3244	105	1045	383.1
3253	225	1030	415.2
3262	250	1045	460.5
3271	130	1035	482.7
3280	105	1020	473.4
3289	180	1020	431.9
3298	155	1045	673.5
3301	300	755	323.6
3307	20	1005	792.4
3316	115	1030	640.9
3325	170	1040	562.5
3334	190	1020	696.7
3343	205	1040	567.5

TABLE 1B
cont...



DEPTH (m)	VOLUME HEADSPACE (mls)	VOLUME CUTTINGS (cm ³)	DRY wt (g)
3352	150	1020	633.9
3361	225	1000	548.8
3370	225	1025	471.6
3379	270	1040	603.9
3388	190	1020	670.0
3397	260	1020	609.3
3406	190	995	646.8
3415	180	1030	620.3
3416	175	880	638.0
3424	140	1020	314.2
3433	145	1020	410.1
3442	240	1025	128.9
3451	265	1025	265.8
3460	220	1030	778.3
3469	170	1020	815.9
3478	160	1020	757.9
3487	160	1025	810.3
3496	150	1020	781.1
3500	210	845	391.1
3505	185	1025	478.3
3514	300	1025	473.5
3523	270	1020	552.3
3532	220	1010	553.1
3541	200	1000	827.6
3550	150	1025	580.5

TABLE 1B



LITHOLOGICAL AND ORGANIC RICHNESS DATA

WELL NO: 7321/7-1

DEPTH (m)	LITHOLOGY (% CUTTINGS IN PLACE)	TOTAL ORGANIC CARBON % wt.
613 SWC	Medium grey slightly calcareous mudstone	0.92
617 SWC	Medium-dark grey mudstone	1.03
623 SWC	Medium to dark grey soft slightly calcareous clay with light grey/brown firm patches containing occasional very hard mudstone clasts	0.78
630 SWC	Dark-medium grey mudstone	0.84 (0.84R)
637 SWC	Dark grey mudstone	1.10
644 SWC	Medium-dark grey mudstone	0.93
650 SWC	Dark grey mudstone	0.84
658 SWC	Dark grey mudstone	0.58
664 SWC	Medium to dark grey soft clay	0.70
670 SWC	Dark grey mudstone	1.04
676 SWC	Dark grey mudstone	0.74
682 SWC	Dark grey mudstone	0.90
688 SWC	Dark grey mudstone	0.73

TABLE 2
cont...



DEPTH (m)	LITHOLOGY (% CUTTINGS IN PLACE)	TOTAL ORGANIC CARBON % wt.
694 SWC	Dark grey mudstone	0.77
700 SWC	Medium to dark grey soft clay	1.01
706 SWC	Medium-dark grey mudstone	0.71
712 SWC	Dark grey mudstone	0.71
718 SWC	Medium-dark grey mudstone	0.46
724 SWC	Dark grey mudstone	0.53
736 SWC	Medium to grey firm clay	0.49
742 SWC	Medium grey mudstone	0.48
748 SWC	Dark-medium grey mudstone	0.56
754 SWC	Dark-medium grey mudstone	0.63
760 SWC	Dark grey mudstone	0.62
765 SWC	Dark grey mudstone	0.38
771 SWC	Medium to dark grey mudstone	0.50
779 SWC	Dark grey mudstone	0.49
791 SWC	Medium grey mudstone	0.67
798 SWC	Medium-dark grey mudstone	0.43

TABLE 2
cont...



DEPTH (m)	LITHOLOGY (% CUTTINGS IN PLACE)	TOTAL ORGANIC CARBON % wt.
804 SWC	Medium to dark grey moderately firm clay	0.70
817 SWC	Medium-dark grey calcareous mudstone	0.52
823 SWC	Dark grey slightly calcareous mudstone	0.91
830 SWC	Dark grey mudstone	0.63
836 SWC	Dark grey mudstone	0.86
842 SWC	Medium-dark grey slightly calcareous mudstone	0.80
848 SWC	Medium to dark grey moderately firm clay	0.61
866 SWC	Dark grey mudstone	0.81
872 SWC	Dark grey mudstone	0.83 (0.88R)
878 SWC	Dark grey mudstone	0.65
884 SWC	Medium to grey firm clay	0.81
890 SWC	Dark-medium grey mudstone	0.50
896 SWC	Dark-medium grey mudstone	0.90 (0.96R)
902 SWC	Dark grey slightly calcareous mudstone	0.59
908 SWC	Dark grey slightly calcareous mudstone	0.90
914 SWC	Dark-medium grey mudstone	0.36

TABLE 2
cont...



DEPTH
(m)

LITHOLOGY
(% CUTTINGS IN PLACE) TOTAL ORGANIC
CARBON % wt.

920 SWC	Medium grey crumbly clay	0.35 (0.32R)
926 SWC	Medium-light grey mudstone	0.46
932 SWC	Dark grey mudstone	0.70
938 SWC	Medium-dark grey mudstone	0.66
944 SWC	Dark-medium grey mudstone	0.49
950 SWC	Dark-medium grey mudstone	0.85
956 SWC	Medium to dark grey firm clay	0.56
962 SWC	Dark-medium grey mudstone	0.71
968 SWC	Medium grey mudstone	0.74
974 SWC	Medium grey slightly calcareous mudstone	0.61 (0.65R)
1000	Light-medium grey slightly calcareous mudstone (100%)	0.83
1019	Dark-medium grey mudstone (100%)	0.85
1030	Dark-medium grey silty mudstone (100%)	0.92
1037.5	Mid-dark grey silty mudstone (98%)	0.88
1050	Pale grey siltstone (98%)	0.24
1068	Dark grey silty mudstone (100%)	1.02 (1.04R)

TABLE 2
cont...



DEPTH
(m)

LITHOLOGY
(% CUTTINGS IN PLACE) TOTAL ORGANIC
CARBON % wt.

1080	Dark grey mudstone (100%)	1.24
1100	Medium grey very slightly calcareous mudstone (40%)	1.16
1110	Dark grey mudstone (40%)	1.01 (0.98R)
1120	Dark grey mudstone (100%)	1.01
1140	Dark grey silty mudstone (100%)	0.99
1150	Dark grey mudstone (100%)	1.01
1170	Pale grey siltstone (95%)	0.12
1180	Pale grey siltstone (80%)	0.14 (0.14R)
1200	Medium grey slightly calcareous mudstone (60%)	1.59
1210	Dark grey mudstone (90%)	1.72 (1.71R)
1220	Medium to dark grey mudstone (80%)	1.40
1250	Dark grey mudstone (90%)	1.51
1260	Dark grey mudstone (90%)	1.55
1280	Dark grey mudstone (100%)	1.35
1290	Dark grey mudstone (90%)	1.48
1300	Medium-dark grey mudstone (60%)	1.53
1310	Medium grey muddy siltstone (100%)	1.31

TABLE 2
cont...



DEPTH
(m)

LITHOLOGY
(% CUTTINGS IN PLACE)

TOTAL ORGANIC
CARBON % wt.

1320	Dark grey mudstone (100%)	1.28
1330	Dark grey muddy siltstone (95%)	1.38
1340	Dark grey mudstone (90%)	1.87
1350	Dark grey silty mudstone (99%)	1.25
1370	Dark grey occasionally black mudstone (100%)	1.72
1380	Dark grey silty mudstone (100%)	1.26
1390	LCM + Cavings (100%)	*
1400	Medium-dark grey non- calcareous mudstone (50%)	1.39 (1.48R)
1410	Dark-medium grey silty mudstone (90%)	1.25 (1.32R)
1420	Medium grey silty mudstone (80%)	0.81
1440	Medium grey siltstone (55%)	0.89
1450 SWC	Dark grey slightly calcareous mudstone	0.99
1470	Dark grey/brown silty mudstone (60%)	1.44
1480	Dark grey/brown silty mudstone (60%)	1.58
1500X	Medium-dark grey siltstone (30%)	1.87X
1500X SWC	Dark grey slightly calcareous mudstone	0.98 (1.02RX)

TABLE 2
cont...



DEPTH
(m)

LITHOLOGY
(% CUTTINGS IN PLACE) TOTAL ORGANIC
CARBON % wt.

1520X	Off-white to cream sandstone (98%)	0.03X
1530X	Cement (100%)	*
1550X SWC	Dark grey mudstone	1.48X
1586X	Dark grey mudstone (100%)	1.12X
1595X	Medium-dark grey silty mudstone (60%)	1.92X
1600X SWC	Dark grey-brown calcareous mudstone	1.64X
1620X	Dark grey mudstone (100%)	1.46X
1630X	Off-white sandstone (100%)	0.09X
1650X SWC	Dark grey-brown calcareous mudstone	1.96X
1670X	Dark grey mudstone (100%)	1.88X
1680X	LCM + Cavings (100%)	*
1700X	Dark grey silty mudstone (100%)	2.13X (2.16XR)
1720X	Dark grey/black mudstone (100%)	1.76X
1730X	Dark grey/black mudstone (100%)	2.20X
1750X	Dark grey-brown mudstone (100%)	2.00X
1767X	Dark grey mudstone (100%)	1.82X
1777X	Dark grey mudstone (100%)	1.79X
1786X	Dark grey silty mudstone (100%)	2.00X

TABLE 2
cont...



	LITHOLOGY (% CUTTINGS IN PLACE)	TOTAL ORGANIC CARBON % wt.
1800X	Light to medium grey muddy siltstone grading to a mudstone (100%)	2.33X
1800X SWC	Dark grey slightly calcareous mudstone	2.32X
1813X	Dark grey silty mudstone (100%)	1.01X
1822X	Dark grey mudstone (100%)	1.35X
1831X	Dark grey to black mudstone (100%)	1.54X
1840X	Black mudstone (80%)	1.65X
1850X SWC	Dark grey mudstone	1.94X
1867X	Black to dark grey mudstone (80%)	2.07X
1885X	Dark grey mudstone (60%)	1.44X
1891X SWC	Dark grey-black mudstone	3.29X (3.67XR)
1900X	Medium to dark grey mudstone (70%)	2.90X
1900X SWC	Medium grey mudstone	0.24
1910 SWC	Medium-grey mudstone	0.16
1917.5 SWC	Dark grey-black mudstone	7.24
1920 SWC	Dark grey-black mudstone	7.88
1927 SWC	Dark grey-black mudstone	9.00

TABLE 2
cont...



DEPTH
(m)

LITHOLOGY
(% CUTTINGS IN PLACE) TOTAL ORGANIC
CARBON % wt.

1931 SWC	Dark grey-black mudstone	6.94
1935 SWC	Dark grey-black mudstone	5.53
1940 SWC	Dark grey-black mudstone	6.82
1945 SWC	Dark grey-black mudstone	10.88
1949.5 SWC	Dark grey-black mudstone	13.85
1950	Dark grey to black micaceous mudstone (100%)	6.74 (6.75R)
1955 SWC	Dark grey-black mudstone	12.95 (12.90R)
1960 SWC	Dark grey-black mudstone	7.39
1965 SWC	Dark grey slightly calcareous mudstone	1.33
1970 SWC	Dark grey mudstone	1.14
1975 SWC	Dark-medium grey mudstone	0.84 (0.81R)
1980 SWC	Dark-medium grey mudstone	0.59
1985 SWC	Medium grey mudstone	0.36 (0.35R)
1990	Medium to dark grey mudstone with micaceous horizons (60%)	6.09 (6.50R)
1990 SWC	Medium grey mudstone	0.81

TABLE 2
cont...



DEPTH (m)	LITHOLOGY (% CUTTINGS IN PLACE)	TOTAL ORGANIC CARBON % wt.
1995 SWC	Medium grey slightly calcareous mudstone	0.51
1998 SWC	Dark-medium grey slightly calcareous mudstone	0.59
2011 SWC	Medium grey-brown slightly calcareous medium coarse sandstone	0.10
2029	Black mudstone (30%)	6.97
2038 (B)	Medium red/brown muddy sandstone (90%)	0.15
2038	Black occasionally silty mudstone (10%)	5.90
2052 SWC	Dark grey slightly calcareous mudstone	2.43
2065	Black mudstone (30%)	5.52
2074	Black mudstone (25%)	6.95
2083	Black occasionally silty mudstone (30%)	4.90
2100 (SST)	Medium to fine grained muddy medium grey coloured cemented sandstone with mudstone laminae (90%)	1.00
2100 (MD)	Black to dark grey mudstone (5%)	4.16 (4.30R)
2100 SWC	Light-medium grey calcareous medium grained sandstone	0.06
2110	Black mudstone (10%)	4.07
2119	Black to medium grey silty mudstone (20%)	3.86

TABLE 2
cont...



DEPTH
(m)

LITHOLOGY
(% CUTTINGS IN PLACE)

TOTAL ORGANIC
CARBON % wt.

2128	Dark to medium grey micaceous silty mudstone (30%)	2.86
2137	Dark to medium grey micaceous silty mudstone (30%)	1.69
2147 SWC	Dark grey mudstone	0.80
2164	Dark-medium grey silty mudstone (50%)	1.35
2173	Dark-medium grey silty mudstone (40%)	1.35
2182	Black/dark grey occasionally silty mudstone (50%)	1.37
2199 SWC	Dark grey mudstone	0.71
2200	Medium to dark grey mudstone (95%)	0.97 (1.07R)
2218	Dark grey silty mudstone (60%)	0.83
2227	Dark grey slightly micaceous silty mudstone (10%)	1.09
2236	Dark grey mudstone (30%)	1.66
2250 SWC	Dark grey mudstone	1.93
2263	Medium grey silty mudstone (50%)	1.48
2272	Light to medium grey micaceous siltstone (45%)	0.44

TABLE 2
cont...



DEPTH (m)	LITHOLOGY (% CUTTINGS IN PLACE)	TOTAL ORGANIC CARBON % wt.
2281	Light to medium grey silty mudstone (60%)	0.66
2290	Medium grey mudstone (60%)	1.30
2300	Dark grey to black mudstone with silty horizons (35%)	2.14
2300 SWC	Light-medium grey mudstone	0.34
2317	Medium grey mudstone (40%)	1.38
2326	Medium grey mudstone (20%)	1.17
2335	Medium grey occasionally dark grey mudstone (70%)	1.53
2350 SWC	Dark grey mudstone	1.27 (1.28R)
2362	Dark grey mudstone (20%)	1.12
2371	Dark grey mudstone (10%)	1.18
2380	Dark grey mudstone (20%)	1.38
2389	Dark-medium grey mudstone (20%)	4.59
2400 (PMD)	Pale to light grey calcareous mudstone (25%)	0.58
2400 (DMD)	Dark grey to black mudstone (50%)	2.77 (2.59R)
2401 SWC	Medium to dark grey mudstone	0.57
2416	Mid-dark grey mudstone (20%)	1.24
2425	Mid to dark grey mudstone (25%)	3.73 (3.85R)

TABLE 2
cont...



DEPTH (m)	LITHOLOGY (% CUTTINGS IN PLACE)	TOTAL ORGANIC CARBON % wt.
2434	Dark grey mudstone (50%)	1.02
2448 SWC	Medium-dark grey mudstone	0.71
2461	Dark grey mudstone (30%)	1.86
2470	Dark grey mudstone (50%)	1.13
2479	Dark grey mudstone (65%)	1.27
2488	Dark grey mudstone (60%)	2.34
2500	Pale-medium grey mudstone/siltstone (100%)	0.40
2503 SWC	Medium grey mudstone	0.18
2515	Medium grey siltstone (45%)	0.36
2524	Medium-dark grey mudstone (40%)	0.76
2533	Medium grey siltstone (35%)	1.40
2548 SWC	Medium grey mudstone	0.63
2560	Black occasionally coaly mudstone (45%)	8.52
2569	Black/dark grey mudstone (40%)	3.11
2578	Dark grey mudstone (14%)	2.99
2587	Dark grey mudstone (15%)	1.95
2596	Medium-dark grey mudstone (10%)	2.86
2599	Dark-medium grey carbonaceous mudstone (25%)	7.03

TABLE 2
cont...



DEPTH
(m)

LITHOLOGY
(% CUTTINGS IN PLACE)

TOTAL ORGANIC
CARBON % wt.

2601 SWC	Pale grey sandstone	0.09
2605 (C)	Grey-black coal (10%)	60.27 (61.93R)
2605 (MD)	Dark grey carbonaceous mudstone (20%)	7.55
2614	Dark grey mudstone (20%)	5.36
2623	Black-dark grey mudstone (15%)	2.61 (2.67R)
2632	Black lustrous coal (20%)	39.74
2655 SWC	Dark grey slightly calcareous mudstone	0.47
2668	Dark grey-black mudstone (10%)	2.35
2677	Black occasionally coaly mudstone (10%)	2.52
2686	Dark grey to black occasionally carbonaceous shale (85%)	2.29
2698 SWC	Medium-dark grey mudstone	0.48
2700	Medium grey occasionally calcareous siltstone (75%)	1.31
2713	Dark grey to black shale (25%)	2.01
2722 (DG)	Dark grey shale (30%)	1.19
2722 (MG)	Medium grey shale (68%)	0.44
2731	Dark grey shale (30%)	7.87

TABLE 2
cont...



DEPTH
(m)

LITHOLOGY
(% CUTTINGS IN PLACE) TOTAL ORGANIC
CARBON % wt.

2740	Mid to dark grey mudstone (30%)	3.95
2750 SWC	Medium-light grey siltstone	0.26 (0.26R)
2767	Dark grey mudstone (90%)	2.80
2776	Dark grey mudstone (70%)	0.74
2785	Dark grey slightly micaceous silty mudstone (35%)	1.11 (1.06R)
2800	Dark grey to black mudstone (85%)	1.96
2812	Dark grey mudstone (65%)	0.57
2821	Dark grey mudstone (70%)	0.50
2830	Dark grey mudstone (25%)	0.89
2839	Dark grey mudstone (40%)	0.93
2850 SWC	Dark grey mudstone	0.84
2866	Dark grey mudstone (20%)	0.84 (0.83R)
2875	Dark grey mudstone (20%)	1.37
2884	Dark grey occasionally black mudstone (25%)	1.28
2900	Dark grey to black mudstone (50%)	1.96
2911	Dark grey mudstone (20%)	1.24
2920	Dark-medium grey silty mudstone (30%)	1.31
2929	Dark grey mudstone (50%)	1.46

TABLE 2
cont...



DEPTH
(m)

LITHOLOGY
(% CUTTINGS IN PLACE) TOTAL ORGANIC
CARBON % wt.

2938	Dark grey silty mudstone (30%)	1.17
2953 SWC	Dark grey mudstone	0.71
2965	Dark grey silty mudstone (60%)	0.96
2973	Dark grey silty mudstone (30%)	0.79
2983	Dark grey mudstone (5%)	0.93
2997 SWC	Medium-dark grey mudstone	0.62
3000	Dark grey to black muddy siltstone (80%)	1.01
3010	Dark grey mudstone (25%)	0.68
3019	Dark grey mudstone (30%)	0.94
3028	Dark grey mudstone (30%)	1.36
3037	Dark grey mudstone (50%)	1.08
3051 SWC	Medium-dark grey mudstone	0.91 (0.92R)
3064	Dark grey mudstone (65%)	0.93
3073	Dark grey mudstone (55%)	0.78
3082	Dark grey mudstone (55%)	0.88
3099 SWC	Medium-dark grey mudstone	0.86
3100	Dark grey to black mudstone (50%)	0.94
3118	Dark grey silty mudstone (40%)	1.12
3127	Dark grey mudstone (25%)	1.14

TABLE 2
cont...



DEPTH
(m)

LITHOLOGY
(% CUTTINGS IN PLACE) TOTAL ORGANIC
CARBON % wt.

3136	Dark grey mudstone (20%)	0.85
3148 SWC	Medium-dark grey slightly calcareous mudstone	0.66
3163	Dark grey-black mudstone (20%)	1.70
3172	Dark grey mudstone (30%)	1.35
3190	Dark grey mudstone (10%)	0.88
3202	Dark grey to black muddy micaceous siltstone (50%)	0.89
3203 SWC	Medium-dark grey slightly calcareous mudstone	0.89
3217	Dark grey mudstone (20%)	0.75
3235	Dark grey mudstone (30%)	0.66
3244	Dark grey mudstone (30%)	0.61
3256 SWC	Dark-medium grey mudstone	0.83 (0.90R)
3271	Dark grey-black lustrous mudstone (30%)	19.61
3280	Dark grey mudstone (35%)	2.35
3289	Dark grey mudstone (30%)	1.15
3301	Black silty mudstone (20%)	4.74
3302 SWC	Light grey slightly calcareous siltstone	0.13
3316	Dark grey mudstone (25%)	8.62
3325	Dark grey-black lustrous coal (10%)	75.26
3334	Dark grey mudstone (30%)	3.40

TABLE 2
cont...



DEPTH (m)	LITHOLOGY (% CUTTINGS IN PLACE)	TOTAL ORGANIC CARBON % wt.
3343	Dark grey-black mudstone (25%)	2.90
3352	Dark grey mudstone (25%)	1.93
3361	Dark grey mudstone (20%)	1.63
3370	Dark grey mudstone (10%)	3.92
3385 SWC	Dark-medium grey mudstone -	0.79 (0.87R)
3397	Dark grey mudstone (40%)	1.49
3406	Dark grey-black silty mudstone (40%)	1.29
3416	Dark grey to black mudstone (80%)	1.07
3433	Dark grey to black silty mudstone (60%)	1.06
3444 SWC	Dark grey mudstone	0.94
3460	Dark grey to black occasionally micaceous siltstone (30%)	0.87
3469	Dark grey-black mudstone (10%)	1.20
3478	Dark grey-black mudstone (30%)	1.05 (1.02R)
3487	Dark grey to black silty mudstone (25%)	1.27
3500	Dark grey to black muddy siltstone (50%)	1.57
3500 (SWC)	Dark grey mudstone	0.98
3514	Dark grey silty mudstone (70%)	0.87 (0.88R)

TABLE 2
cont...

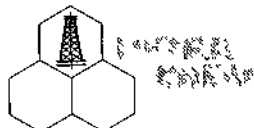


DEPTH (m)	LITHOLOGY (% CUTTINGS IN PLACE)	TOTAL ORGANIC CARBON % wt.
3523	Dark grey to black silty mudstone (55%)	1.51
3532	Dark grey to black silty mudstone (60%)	1.13
3541	Dark grey to black mudstone (40%)	1.28
3550	Dark grey mudstone (60%)	1.19 -

Key

- R = Repeat Value
- X = Sample extracted prior to TOC measurement
- SWC = Sidewall Core
- SST = Sandstone lithology
- MD = Mudstone lithology
- PMD = Pale mudstone lithology
- DMD = Dark mudstone lithology
- C = Coal lithology
- DG = Dark grey lithology
- B = Red/brown lithology
- * = Sample not analysed - can contained either cement,
LCM or Cavings

TABLE 2

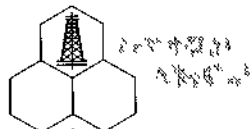


PYROLYSIS DATA

WELL NO: 7321/7-1

DEPTH (m)	S1 YIELD (ppm)	S2 YIELD (ppm)	EXTRACTED S2 YIELD (ppm)	S3 YIELD (ppm)	T MAX °C
613 SWC	71 (69R)	457 (449R)	-	221 (230R)	455 (454R)
617 SWC	97	564	-	279	452
623 SWC	99	476	-	204	451
630 SWC	65	564	-	237	448
637 SWC	86	652	-	263	448
644 SWC	157	671	-	252	453
650 SWC	48	458	-	203	448
658 SWC	28	153	-	134	453
664 SWC	81 (75R)	297 (310R)	-	223 (217R)	447 (448R)
670 SWC	53	558	-	333	448
676 SWC	48	345	-	177	448
682 SWC	61	256	-	271	448
688 SWC	55	306	-	176	448
694 SWC	27	170	-	177	448
700 SWC	147	415	-	253	449
706 SWC	56	237	-	228	448
712 SWC	49 (46R)	187 (184R)	-	200 (185R)	451 (449R)
724 SWC	65	205	-	134	449
736 SWC	144	183	-	155	445

TABLE 3A
cont...



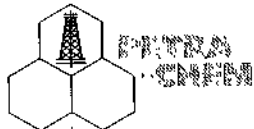
DEPTH (m)	S1 YIELD (ppm)	S2 YIELD (ppm)	EXTRACTED S2 YIELD (ppm)	S3 YIELD (ppm)	T MAX °C
748 SWC	23	205	-	157	448
754 SWC	66	229	-	158	448
760 SWC	31	216	-	166	446
771 SWC	102	199	-	131	446
791 SWC	36	155	-	181	449
804 SWC	105	375	-	182	447
817 SWC	96	237	-	125	448
823 SWC	52	359	-	246	448
830 SWC	33	200	-	165	448
836 SWC	66	374	-	208	448
842 SWC	143	398	-	216	448
848 SWC	133 (101R)	390 (393R)	-	146 (148R)	448 (448R)
866 SWC	47 (51R)	366 (391R)	-	243 (235R)	448 (448R)
872 SWC	139	442	-	224	448
878 SWC	122	479	-	156	448
884 SWC	88	351	-	243	447
890 SWC	96	279	-	115	448
896 SWC	134	567	-	214	449
902 SWC	109	413	-	195	448
908 SWC	111	523	-	342	449
920 SWC	127	207	-	91	448
932 SWC	128	267	-	182	447
938 SWC	143	512	-	178	448

TABLE 3A
cont...



DEPTH (m)	S1 YIELD (ppm)	S2 YIELD (ppm)	EXTRACTED S2 YIELD (ppm)	S3 YIELD (ppm)	T MAX °C
950 SWC	136	421	-	230	447
956 SWC	140 (140R)	252 (265R)	-	185 (168R)	448 (448R)
962 SWC	97	341	-	227	448
968 SWC	101	541	-	215	458
974 SWC	97	444	-	176	457
1000	128 (87R)	367 (320R)	-	174 (191R)	457 (458R)
1019	152	318	-	229	457
1030	104	293	-	240	451
1037.5	317	442	-	255	449
1068	144	703	-	278	456
1080	137	814	-	360	458
1100	131 (120R)	710 (736R)	-	302 (268R)	451 (452R)
1110	155	639	-	241	452
1120	362	732	-	213	451
1140	198	706	-	188	452
1150	468	1055	-	212	451
1200	276 (289R)	1245 (1249R)	-	367 (350R)	455 (456R)
1210	292	1200	-	430	459
1220	405	940	-	294	451
1250	423	1111	-	302	455
1260	475	1132	-	341	454

TABLE 3A
cont...



DEPTH (m)	S1 YIELD (ppm)	S2 YIELD (ppm)	EXTRACTED S2 YIELD (ppm)	S3 YIELD (ppm)	T MAX °C
1280	441	1088	-	365	454
1290	318	909	-	311	454
1300	491 (463R)	1424 (1412R)	-	321 (352R)	451 (454R)
1310	432 (460R)	1284 (1269R)	-	328 (341R)	457 (457R)
1320	490	1427	-	294	461
1330	478	1329	-	290	454
1340	461	1375	-	412	457
1350	537	1335	-	238	456
1370	497	1301	-	362	457
1380	454	1202	-	291	460
1400	523	1625	-	343	455
1410	545	1174	-	321	456
1420	419	1104	-	171	456
1440	370	1009	-	168	458
1450 SWC	496	1270	-	230	457
1470	648	1364	-	259	461
1480	612	1364	-	267	456
1500	2744	2823	1822	393	460
1500 SWC	1564	1427	-	221	460
1550 SWC	1347	2011	-	342	461
1586	1278	1947	-	224	460
1595	1942	2449	1586	346	465

TABLE 3A
cont...



DEPTH (m)	S1 YIELD (ppm)	S2 YIELD (ppm)	EXTRACTED S2 YIELD (ppm)	S3 YIELD (ppm)	T MAX °C
1600 SWC	1718	2007	-	361	461
1620	1342	1786	-	307	461
1650 SWC	1462	2173	-	412	462
1670	1500	2296	-	358	461
1700X	-	-	2036 (2094R)	364 (407R)	460 (461R)
1720X	-	-	2127	315	452
1730X	-	-	1832	396	463
1750X	-	-	2173	421	464
1767X	-	-	1909	420	463
1777X	-	-	2001	360	464
1786X	-	-	1879	439	468
1800X	-	-	1427	467	476
1800X SWC	-	-	1017	462	461
1813X	-	-	1506	222	463
1822X	-	-	1316	257	466
1831X	-	-	1049	270	470
1840X	-	-	1436	344	464
1850X SWC	-	-	1785	485	467
1867X	-	-	1681	498	481
1885X	-	-	2378 (2264R)	289 (301R)	482 (481R)
1891X SWC	-	-	2497	752	471
1900X	-	-	4066	609	485

TABLE 3A
cont...



DEPTH (m)	S1 YIELD (ppm)	S2 YIELD (ppm)	EXTRACTED S2 YIELD (ppm)	S3 YIELD (ppm)	T MAX °C
1917.5 SWC	1818	5864	-	2751	464
1920 SWC	1797	5990	-	1419	471
1927 SWC	1865	6661	-	1981	472
1931 SWC	1550	5001	-	1597	468
1935 SWC	947	3264	-	1161	469
1940 SWC	1248	4161	-	1160	470
1945 SWC	3051	6785	-	2068	473
1949.5 SWC	2485	6365	-	2771	467
1950X	-	-	4437	1551	484
1955 SWC	3001	7626	-	2973	469
1960 SWC	1980 (1655R)	4061 (4297R)	-	1181 (1183R)	466 (467R)
1965 SWC	324	422	-	2262	468
1970 SWC	318	587	-	1938	469
1975 SWC	303	341	-	182	466
1980 SWC	299	407	-	130	469
1990X	-	-	4066	1188	485
1990 SWC	170	305	-	154	467
1995 SWC	137	257	-	107	471
1998 SWC	134	433	-	100	472
2029	2104	4482	-	1394	473
2038	2073	3622	-	1063	471
2052 SWC	472	1003	-	413	473
2065	1326	3130	-	883	470
2074	1363	3271	-	1321	468

TABLE 3A
cont...



DEPTH (m)	S1 YIELD (ppm)	S2 YIELD (ppm)	EXTRACTED S2 YIELD (ppm)	S3 YIELD (ppm)	T MAX °C
2083	1162	2910	-	833	469
2100 SST	117	442	-	161	468
2100 MD	726	2223	1696	719	485
2110	1055	2468	-	570	466
2119	885 (908R)	2137 (2276)	-	619 (617R)	472 (471R)
2128	553	1490	-	430	472
2137	251	792	-	271	471
2147 SWC	149	248	-	136	471
2164	204	521	-	189	470
2173	183	519	-	216	471
2182	180	566	-	233	473
2199 SWC	110	187	-	99	470
2200	107 (118R)	401 (421R)	-	155 (182R)	481 (479R)
2218	95	284	-	141	470
2227	164	381	-	164	473
2236	185	576	-	300	472
2250 SWC	269	590	-	270	473
2263	311	693	-	179	476
2281	136	346	-	89	478
2290	195	475	-	234	471
2300	407	1084	-	48	476
2317	226	716	-	219	475
2326	175	544	-	160	476

TABLE 3A
cont...



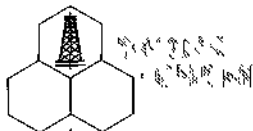
DEPTH (m)	S1 YIELD (ppm)	S2 YIELD (ppm)	EXTRACTED S2 YIELD (ppm)	S3 YIELD (ppm)	T MAX °C
2335	199	672	-	212	475
2350 SWC	237	347	-	214	471
2362	220	561	-	213	476
2371	181	480	-	200	475
2380	605	1396	-	219	474
2389	1552	3344	-	781	479
2400 PMD	455	690	-	111	467
2400 DMD	1171 (1215R)	2361 (2364R)	2167 (2111R)	333 (311R)	477 (479R)
2401 SWC	141	93	-	99	468
2416	125	421	-	199	468
2425	1058	2540	-	490	468
2434	173	596	-	130	467
2448 SWC	38	106	-	108	464
2461	446	1129	-	259	467
2470	194	567	-	145	473
2479	215	630	-	216	464
2488	311	1395	-	325	464
2500	75	286	-	68	489
2524	93	372	-	104	476
2533	231	710	-	182	473
2548 SWC	145	97	-	69	483
2560	596	3125	-	1272	484
2569	333	1596	-	342	480

TABLE 3A
cont...



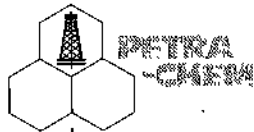
DEPTH (m)	S1 YIELD (ppm)	S2 YIELD (ppm)	EXTRACTED S2 YIELD (ppm)	S3 YIELD (ppm)	T MAX °C
2578	531	1563	-	340	478
2589	426 (401R)	948 (903R)	-	273 (271R)	478 (480R)
2596	454	1384	-	401	474
2599	389	2225	-	112	509
2605 (C)	1750	23323	-	10981	482
2605 (MD)	405 (434R)	2616 (2676R)	-	106 (104R)	475 (472R)
2614	486	1840	-	751	481
2623	184	1016	-	343	476
2632	1940	13321	-	4767	478
2668	344	1068	-	282	476
2677	246	928	-	353	476
2686	301	1100	-	230	475
2700	211	565	-	170	473
2713	212	625	-	303	476
2722 (DG)	167	512	-	143	477
2731	678	3136	-	1259	477
2740	533	1516	-	555	477
2767	703	1283	-	281	478
2776	98	152	-	90	474
2785	87	152	-	120	476
2800	146	318	-	256	476
2812	78	72	-	80	474
2821	58	54	-	45	481

TABLE 3A
cont...



DEPTH (m)	S1 YIELD (ppm)	S2 YIELD (ppm)	EXTRACTED S2 YIELD (ppm)	S3 YIELD (ppm)	T MAX °C
2830	117	108	-	99	482
2839	113	108	-	121	481
2850 SWC	126	92	-	76	480
2866	68	157	-	92	481
2875	322	487	-	192	472
2884	171	255	-	154	477
2900	272	590	-	216	491
2911	102	163	-	117	478
2920	163	215	-	144	468
2929	204	149	-	147	473
2938	63	115	-	106	481
2953 SWC	114	66	-	78	468
2965	103	105	-	86	474
2973	55	104	-	95	481
2983	87	141	-	102	476
2997 SWC	79	152	-	68	477
3000	61	149	-	80	362
3010	113	52	-	61	474
3019	67	143	-	94	477
3028	57	128	-	122	482
3037	68	205	-	119	481
3051 SWC	102 (104R)	92 (92R)	-	91 (101R)	470 (469R)
3064	45	100	-	75	481

TABLE 3A
cont...



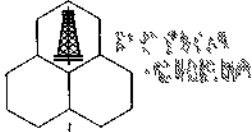
DEPTH (m)	S1 YIELD (ppm)	S2 YIELD (ppm)	EXTRACTED S2 YIELD (ppm)	S3 YIELD (ppm)	T MAX °C
3073	43	97	-	70	478
3082	102	120	-	133	481
3099 SWC	104	55	-	120	470
3100	45	103	-	104	364
3118	124	201	-	134	471
3127	185	151	-	160	476
3136	69	116	-	95	469
3148 SWC	96	60	-	66	468
3163	326	416	-	188	478
3172	72	124	-	108	479
3190	251	189	-	123	474
3202	118	163	-	117	482
3203 SWC	100	94	-	107	465
3217	87	88	-	75	465
3235	57	90	-	66	481
3244	43	97	-	55	363
3256 SWC	196	99	-	69	468
3271	372	821	-	2157	481
3280	277	516	-	306	471
3289	344	468	-	116	480
3301	522	136	-	379	333
3302 SWC	174	247	-	156	479
3316	441	438	-	952	480
3325	630	1252	-	9784	482

TABLE 3A
cont...



DEPTH (m)	S1 YIELD (ppm)	S2 YIELD (ppm)	EXTRACTED S2 YIELD (ppm)	S3 YIELD (ppm)	T MAX °C
3334	936	1056	-	341	480
3343	651	724	-	348	481
3352	379 (364R)	690 (700R)	-	193 (195R)	483 (474R)
3361	276	352	-	147	481
3370	589	1216	-	470	480
3385 SWC	89	99	-	67	468
3397	49	115	-	164	475
3406	99	145	-	129	478
3416	297	74	-	75	346
3433	142	194	-	127	483
3444 SWC	150	162	-	66	488
3460	92	231	-	96	488
3469	134	189	-	96	462
3478	228	63	-	124	488
3487	83	186	-	89	463
3500	63	160	-	126	359
3500 SWC	156	271	-	108	480
3514	236	133	-	123	452
3523	140	254	-	136	476
3532	65	100	-	124	452
3541	76	191	-	102	482
3550	86	207	-	95	481

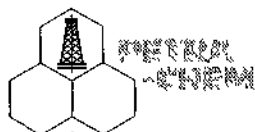
TABLE 3A
cont...



Key

- SWC = Sidewall Core
- MD = Mudstone lithology
- DMD = Dark mudstone lithology
- = No data, sample extracted with solvent prior to analysis

TABLE 3A

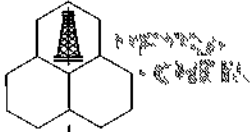


PYROLYSIS DATA

WELL NO: 7321/7-1

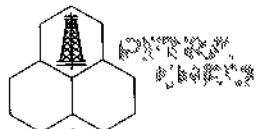
DEPTH (m)	HI (S2/TOC)	OI (S3/TOC)	PI (S1/S1+S2)	PP (S1+S2)
613 SWC	50 (48R)	24 (25)	0.13 (0.09)	528 (518R)
617 SWC	54	27	0.14	661
623 SWC	61	26	0.17	575
630 SWC	67	28	0.10	629
637 SWC	59	24	0.11	738
644 SWC	72	27	0.18	828
650 SWC	54	24	0.09	506
658 SWC	26	23	0.15	181
664 SWC	42 (44R)	32 (31R)	0.21 (0.19R)	378 (385R)
670 SWC	53	32	0.08	611
676 SWC	46	24	0.12	393
682 SWC	28	30	0.19	317
688 SWC	41	24	0.15	361
694 SWC	22	23	0.13	197
700 SWC	41	25	0.26	562
706 SWC	33	32	0.19	293
712 SWC	26 (26R)	28 (26R)	0.20 (0.20R)	236 (230R)
724 SWC	38	25	0.24	270
736 SWC	37	32	0.44	327

TABLE 3B
cont...



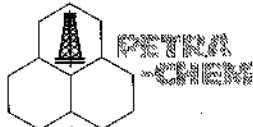
DEPTH (m)	HI (S2/TOC)	OI (S3/TOC)	PI (S1/S1+S2)	PP (S1+S2)
748 SWC	36	28	0.10	228
754 SWC	36	25	0.22	295
760 SWC	34	27	0.12	247
771 SWC	39	26	0.33	301
791 SWC	23	27	0.18	191
804 SWC	53	26	0.21	480
817 SWC	46	24	0.29	333
823 SWC	39	27	0.12	411
830 SWC	31	26	0.14	233
836 SWC	43	24	0.15	440
842 SWC	49	27	0.26	541
848 SWC	63 (64R)	24 (24R)	0.25 (0.20R)	523 (494R)
866 SWC	45 (48R)	30 (29R)	0.11 (0.12R)	413 (442R)
872 SWC	53	27	0.23	581
878 SWC	74	24	0.20	601
884 SWC	43	30	0.20	439
890 SWC	56	23	0.26	375
896 SWC	61	23	0.19	701
902 SWC	70	33	0.21	522
908 SWC	58	38	0.18	634
920 SWC	59	26	0.38	334
932 SWC	38	26	0.32	395
938 SWC	78	27	0.22	655

TABLE 3B
cont...



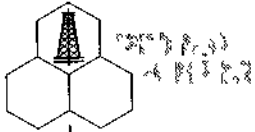
DEPTH (m)	HI (S2/TOC)	OI (S3/TOC)	PI (S1/S1+S2)	PP (S1+S2)
950 SWC	50	27	0.24	557
956 SWC	45 (47R)	33 (30R)	0.36 (0.35R)	392 (405R)
962 SWC	48	32	0.22	438
968 SWC	73	29	0.16	642
974 SWC	70	28	0.18	541
1000 SWC	44 (39R)	21 (23R)	0.26 (0.21R)	495 (407R)
1019	37	27	0.32	470
1030	32	26	0.26	397
1037.5	50	29	0.41	759
1068	68	27	0.17	847
1080	66	29	0.14	951
1100	61 (63R)	26 (23R)	0.16 (0.14R)	841 (856R)
1110	65	24	0.20	794
1120	72	21	0.33	1094
1140	64	19	0.21	904
1150	104	21	0.31	1523
1200	78 (82R)	23 (22R)	0.18 (0.19R)	1521 (1538R)
1210	70	25	0.19	1492
1220	67	21	0.30	1345
1250	82	20	0.27	1534
1260	73	22	0.29	1607
1280	80	27	0.28	1529

TABLE 3B
cont...



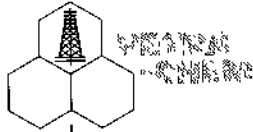
DEPTH (m)	HI (S2/TOC)	OI (S3/TOC)	PI (S1/S1+S2)	PP (S1+S2)
1290	61	21	0.25	1227
1300	93 (92R)	21 (23R)	0.26 (0.25R)	1915 (1875R)
1310	98 (96R)	25 (26R)	0.25 (0.26R)	1716 (1729R)
1320	111	23	0.25	1917
1330	96	21	0.26	1807
1340	73	22	0.25	1836
1350	106	19	0.28	1872
1370	101	21	0.27	1798
1380	95	23	0.27	1656
1400	116	24	0.24	2148
1410	93	25	0.31	1719
1420	136	21	0.27	1523
1440	69	19	0.27	1379
1450 SWC	128	23	0.28	1766
1470	95	18	0.32	2012
1480	86	17	0.30	1976
1500	97	21	0.49	5567
1500 SWC	142	22	0.52	2991
1550 SWC	136	23	0.40	3358
1586	174	20	0.40	3225
1595	82	18	0.44	4391
1600 SWC	122	22	0.46	3725
1620	122	21	0.43	3128

TABLE 3B
cont...



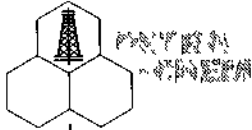
DEPTH (m)	HI (S2/TOC)	OI (S3/TOC)	PI (S1/S1+S2)	PP (S1+S2)
1650 SWC	111	21	0.40	3635
1670	122	19	0.40	3796
1700X	96 (98R)	17 (19R)	-	-
1720X	121	18	-	-
1730X	83	18	-	-
1750X	109	21	-	-
1767X	105	23	-	-
1777X	112	20	-	-
1786X	93	22	-	-
1800X	61	20	-	-
1800X SWC	101	20	-	-
1813X	112	22	-	-
1822X	97	19	-	-
1831X	68	18	-	-
1840X	87	21	-	-
1850X SWC	92	23	-	-
1867X	81	24	-	-
1885X	165 (157R)	20 (21R)	-	-
1891X SWC	73	22	-	-
1900X	67	21	-	-
1917.5 SWC	81	20	0.31	7682
1920 SWC	76	18	0.30	7787

TABLE 3B
cont...



DEPTH (m)	HI (S2/TOC)	OI (S3/TOC)	PI (S1/S1+S2)	PP (S1+S2)
1927 SWC	74	22	0.28	8526
1931 SWC	72	23	0.31	6551
1935 SWC	59	21	0.29	4211
1940 SWC	61	17	0.30	5409
1945 SWC	62	19	0.31	9836
1949.5 SWC	45	20	0.28	8850
1950X	48	23	-	-
1955 SWC	59	23	0.28	10627
1960 SWC	54 (58R)	16 (16R)	0.32 (0.28R)	6041 (5952R)
1965 SWC	31	17	0.43	746
1970 SWC	51	17	0.35	905
1975 SWC	41	22	0.47	644
1980 SWC	69	22	0.30	706
1990X	48	19	-	-
1990 SWC	37	19	0.35	475
1995 SWC	50	21	0.34	394
1998 SWC	73	17	0.23	567
2029	64	20	0.31	6586
2038	61	18	0.36	5695
2052 SWC	41	17	0.32	1475
2065	56	16	0.29	4456
2074	47	19	0.29	4634
2083	59	17	0.28	4072

TABLE 3B
cont...



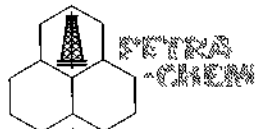
DEPTH (m)	HI (S2/TOC)	OI (S3/TOC)	PI (S1/S1+S2)	PP (S1+S2)
2100 (SST)	44	16	0.20	559
2100 (MD)	41	17	0.24	2949
2110	60	14	0.29	3523
2119	55 (59R)	16 (16R)	0.29 (0.29R)	3022 (3184R)
2128	52	15	0.27	2043
2137	46	16	0.24	1043
2147 SWC	31	17	0.37	397
2164	38	14	0.28	725
2173	38	16	0.26	702
2182	41	17	0.24	746
2199 SWC	26	14	0.37	297
2200	41 (39R)	16 (17R)	0.21 (0.21R)	508 (539R)
2218	34	17	0.25	379
2227	34	15	0.30	545
2236	34	18	0.24	761
2250 SWC	30	14	0.31	859
2263	46	12	0.30	1004
2281	52	13	0.28	482
2290	36	18	0.29	670
2300	35	14	0.27	1491
2317	51	16	0.23	942
2326	46	14	0.24	719
2335	43	14	0.22	871

TABLE 3B
cont...



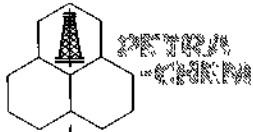
DEPTH (m)	HI (S2/TOC)	OI (S3/TOC)	PI (S1/S1+S2)	PP (S1+S2)
2350 SWC	27	17	0.40	584
2362	50	19	0.28	781
2371	40	17	0.27	661
2380	58	16	0.30	2001
2389	72	17	0.31	4896
2400 (PMD)	119	19	0.39	1145
2400 (DMD)	78 (82R)	12 (12R)	0.33 (0.33R)	3532 (3579R)
2401 SWC	16	17	0.60	234
2416	33	16	0.22	546
2425	65	13	0.29	3598
2434	58	13	0.22	769
2448 SWC	14	15	0.26	144
2461	61	14	0.28	1575
2470	50	13	0.25	761
2479	50	17	0.25	845
2488	59	14	0.18	1706
2500	100	17	0.20	361
2524	48	14	0.20	465
2533	50	13	0.24	941
2548 SWC	15	11	0.59	242
2560	104	15	0.16	3721
2569	51	11	0.17	1929
2578	52	13	0.25	2094

TABLE 3B
cont...



DEPTH (m)	HI (S2/TOC)	OI (S3/TOC)	PI (S1/S1+S2)	PP (S1+S2)
2589	48 (46R)	14 (14R)	0.31 (0.31R)	1374 (1304R)
2596	48	14	0.24	1838
2599	30	16	0.14	2614
2605 (C)	38	18	0.06	25073
2605	35 (35R)	14 (13R)	0.13 (0.14R)	3021 (3110R)
2614	34	14	0.20	2326
2623	38	13	0.15	1200
2632	33	12	0.12	15261
2668	45	12	0.24	1412
2677	36	14	0.20	1174
2686	48	10	0.21	1401
2700	75	13	0.27	776
2713	31	15	0.25	837
2722 (DG)	43	12	0.24	679
2731	39	16	0.17	3814
2740	38	14	0.26	2049
2767	45	10	0.35	1986
2776	20	12	0.39	250
2785	13	11	0.36	239
2800	25	13	0.31	464
2812	12	14	0.52	150
2821	10	9	0.51	112
2830	12	11	0.52	225

TABLE 3B
cont...



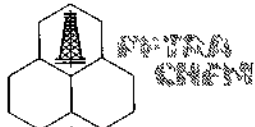
DEPTH (m)	HI (S2/TOC)	OI (S3/TOC)	PI (S1/S1+S2)	PP (S1+S2)
2839	11	13	0.51	221
2850 SWC	10	9	0.57	218
2866	18	11	0.30	225
2875	35	14	0.39	809
2884	19	12	0.40	426
2900	30	11	0.31	862
2911	13	9	0.38	265
2920	16	11	0.43	378
2929	10	10	0.57	353
2938	9	9	0.35	178
2953 SWC	9	11	0.63	180
2965	10	9	0.49	208
2973	13	12	0.34	159
2983	15	11	0.38	228
2997 SWC	13	11	0.34	231
3000	14	8	0.29	210
3010	7	9	0.68	165
3019	15	10	0.31	210
3028	9	9	0.30	185
3037	18	11	0.24	273
3051 SWC	10 (10R)	10 (11R)	0.52 (0.53R)	194 (196R)
3064	10	8	0.31	145
3073	12	9	0.30	140

TABLE 3B
cont...



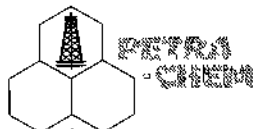
DEPTH (m)	HI (S2/TOC)	OI (S3/TOC)	PI (S1/S1+S2)	PP (S1+S2)
3082	13	15	0.45	222
3099 SWC	6	14	0.65	159
3100	14	11	0.29	148
3118	17	12	0.38	325
3127	13	14	0.55	336
3136	13	11	0.37	185
3148 SWC	9	10	0.61	156
3163	24	11	0.43	742
3172	9	8	0.36	196
3190	21	14	0.57	440
3202	18	13	0.41	281
3203 SWC	10	12	0.51	194
3217	11	10	0.49	175
3235	13	10	0.38	147
3244	15	9	0.30	140
3256 SWC	10	8	0.66	295
3271	4	11	0.31	1193
3280	21	13	0.34	793
3289	18	10	0.42	812
3301	2	8	0.79	658
3302 SWC	24	12	0.41	421
3316	50	11	0.50	878
3325	19	13	0.33	1882
3334	31	10	0.46	1992

TABLE 3B
cont...



DEPTH (m)	HI (S2/TOC)	OI (S3/TOC)	PI (S1/S1+S2)	PP (S1+S2)
3343	24	12	0.47	1375
3352	35 (36R)	10 (10R)	0.35 (0.34R)	1069 (1064R)
3361	21	9	0.43	628
3370	31	12	0.32	1805
3385 SWC	12	8	0.47	188
3397	7	11	0.29	164
3406	11	10	0.40	244
3416	6	7	0.80	371
3433	18	12	0.42	336
3444 SWC	17	7	0.48	312
3460	26	11	0.28	323
3469	15	8	0.41	323
3478	61	12	0.78	291
3487	14	7	0.30	269
3500	10	8	0.28	223
3500 SWC	27	11	0.36	427
3514	15	14	0.63	369
3523	16	9	0.35	394
3532	8	11	0.39	165
3541	14	8	0.28	267
3550	17	8	0.29	293

TABLE 3B

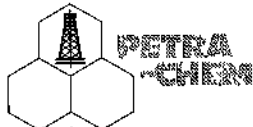


VITRINITE REFLECTANCE DATA

WELL NO: 7321/7-1

DEPTH (m)	VITRINITE REFLECTANCE		(R _o ave%)	
	AUTOCHTHONOUS		ALLOCHTHONOUS	
617 SWC	0.72	(4)	1.25	(1) 1.58 (1)
623 SWC	-		1.31	(5)
644 SWC	0.72	(1)	1.02	(2)
664 SWC			1.29	(29) 2.04 (1)
700 SWC	0.74	(5)		1.91 (2)
718 SWC	0.71	(4)	1.04	(4)
736 SWC			1.35	(5)
771 SWC	0.72	(4)	1.24	(2)
791 SWC	0.76	(2)	1.28	(1) 2.24 (1)
804 SWC				1.32 (5)
848 SWC			1.26	(7) 2.19 (1)
872 SWC	0.81	(2)		
884 SWC				1.40 (3)
920 SWC	0.86	(4)		1.87 (5)
938 SWC	NDP			
956 SWC	^B 0.30	(3)	1.35	(25) 1.92 (2)
968 SWC				1.64 (22)
1000	0.93	(14)	1.49	(1) 1.73 (3)
1100	NDP			
1200	0.90	(5)	1.13	(4)
1300	0.89	(13)		

TABLE 4
cont...



DEPTH (m)	VITRINITE REFLECTANCE		(R _o ave [±])	
	AUTOCHTHONOUS		ALLOCHTHONOUS	
1400	NDP			
1450 SWC	B _{0.29} (3)			
1500	C _{0.64} (2)		1.11 (4)	
1595	C _{0.67} (6)		0.97 (4)	
1650 SWC				1.55 (1)
1700 SWC	0.86 (5)			
1750 SWC	0.92 (1)		1.35 (1)	
1800	0.97 (5)			
1885	1.04 (7)			
1891 SWC	0.97 (3)		1.23 (1)	1.62 (1)
1900	1.21 (20)			
1910 SWC	NDP			
1917.5 SWC	NDP			
1927 SWC	1.17 (16)			1.51 (3)
1940 SWC	1.20 (15)			1.47 (6)
1950	1.22 (11)			
1955 SWC	1.19 (13)			
1975 SWC	NDP			
1990 SWC	1.21 (12)			1.55 (1)
2052 SWC	1.29 (22)			
2100 (MD)	1.28 (20)			
2147 SWC	1.31 (21)			
2200	1.40 (20)			

TABLE 4
cont...



DEPTH (m)	VITRINITE REFLECTANCE (R _o ave%)	
	AUTOCHTHONOUS	ALLOCHTHONOUS
2250 SWC	1.40 (22)	
2300	1.30 (20)	
2350 SWC	1.41 (10)	
2400 (DMD)	1.28 (20)	
2448 SWC	1.47 (17)	
2500	1.77 (27)	
2548 SWC	1.63 (12)	2.07 (3)
2599	1.82 (8)	
2655 SWC	NDP	
2700	1.75 (12)	
2750 SWC	1.76 (14)	
2800	NDP	
2850 SWC	NDP	
2900	1.87 (1)	
2953 SWC	1.90 (12)	
3000	NDP	
3051 SWC	2.00 (5)	
3100	NDP	
3202	2.23 (13)	
3256 SWC	2.12 (14)	
3301	2.17 (30)	
3385 SWC	2.39 (12)	
3416	3.28 (13)	

TABLE 4
cont...



DEPTH (m)	VITRINITE REFLECTANCE (R _o ave%)	
	AUTOCHTHONOUS	ALLOCHTHONOUS
3444 SWC	NDP	
3500	NDP	
3550	2.73 (7)	

Key

- SWC = Sidewall core
- NDP = No determination possible
- MD = Mudstone lithology
- DMD = Dark mudstone lithology

Figures in parentheses refer to the number of measurements completed.

Emboldened figures are the values considered representative of the autochthonous vitrinite.

TABLE 4



VISUAL KEROGEN DESCRIPTIONS

WELL NO: 7321/7-1

DEPTH (m)	STRUCTURED KEROGEN			AMORPHOUS KEROGEN	SPORE COLOUR (1-7)
	CUTICLE	BROWN WOOD	BLACK WOOD		
617 SWC	-	TRACE	LEAN	ABUNDANT	4
644 SWC	-	-	TRACE	ABUNDANT	4/5 ^T
664 SWC	-	TRACE	TRACE	COMMON	?4
700 SWC	-	LEAN	LEAN	ABUNDANT	4/5
718 SWC	-	TRACE	TRACE	ABUNDANT	4/5
736 SWC	-	LEAN	LEAN	LEAN/ COMMON	4/5
791 SWC	-	-	TRACE	ABUNDANT	4/5
804 SWC	-	TRACE	TRACE	COMMON	5
872 SWC	-	-	TRACE	ABUNDANT	4/5
884 SWC	-	LEAN	LEAN	COMMON	4/5
938 SWC	-	TRACE	LEAN	ABUNDANT	4/5
956 SWC	-	TRACE	LEAN	LEAN/ COMMON	5
968 SWC	-	LEAN	LEAN/ COMMON	COMMON/ ABUNDANT	4/5 ^T
1000	-	LEAN	LEAN	COMMON	4/5 ^T
1100	-	TRACE	LEAN	COMMON/ ABUNDANT	4/5 ^T
1200	-	TRACE	TRACE	ABUNDANT	4/5 ^T
1300	-	-	TRACE	ABUNDANT	4/5 ^T
1400	-	-	TRACE	COMMON	4/5
1450 SWC	-	-	TRACE	ABUNDANT	4/5 ^T

TABLE 5
cont...



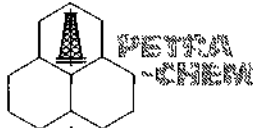
DEPTH (m)	STRUCTURED KEROGEN			AMORPHOUS KEROGEN	SPORE COLOUR (1-7)
	CUTICLE	BROWN WOOD	BLACK WOOD		
1500	-	-	TRACE	ABUNDANT	4/5 ^T
1595	-	TRACE	TRACE	ABUNDANT	4/5 ^T
1700	-	-	TRACE	ABUNDANT	4/5 ^T
1750 SWC	-	LEAN	TRACE	ABUNDANT	4/5 ^T
1800	-	LEAN	TRACE	ABUNDANT	4/5 ^T
1885	-	LEAN	TRACE	ABUNDANT	4/5 ^T
1891 SWC	TRACE	LEAN	-	ABUNDANT	4/5 ^T
1900	-	-	TRACE	ABUNDANT	4/5 ^T
1910 SWC	-	-	TRACE	COMMON	5 ^T
1917 SWC	-	-	TRACE	ABUNDANT	5 ^T
1927 SWC	-	LEAN/ COMMON	TRACE	ABUNDANT	5 ^T
1940 SWC	-	LEAN	TRACE	ABUNDANT	5 ^T
1950	-	COMMON	LEAN/ COMMON	COMMON	5 ^T
1955 SWC	-	COMMON	LEAN/ COMMON	COMMON	5 ^T
1975 SWC	-	-	TRACE	ABUNDANT	5 ^T
1990	-	-	LEAN	ABUNDANT	5 ^T
2052 SWC	-	LEAN/ COMMON	LEAN/ COMMON	COMMON	5
2100	TRACE	COMMON	ABUNDANT	LEAN/ COMMON	5 ^T
2147 SWC	TRACE	COMMON	COMMON/ ABUNDANT	LEAN	5
2200	TRACE	LEAN	LEAN	COMMON/ ABUNDANT	5/6

TABLE 5
cont...



DEPTH (m)	STRUCTURED KEROGEN			AMORPHOUS KEROGEN	SPORE COLOUR (1-7)	
	CUTICLE	BROWN WOOD	BLACK WOOD			
2250	SWC	TRACE	COMMON/ ABUNDANT	COMMON	TRACE	5/6
2300		-	TRACE	TRACE	COMMON/ ABUNDANT	5 ^T
2350	SWC	-	LEAN	COMMON	ABUNDANT	5
2400		-	LEAN	LEAN	ABUNDANT	5 ^T
2448	SWC	-	LEAN/ COMMON	COMMON	COMMON	5
2500		-	TRACE	LEAN	LEAN	5/6 ^T
2548	SWC	TRACE	COMMON	ABUNDANT	LEAN/ COMMON	5/6
2599		-	LEAN/ COMMON	LEAN/ COMMON	COMMON ABUNDANT	5 ^T
2655	SWC	-	TRACE	LEAN	COMMON/ ABUNDANT	5/6 ^T
2700		-	COMMON	COMMON	COMMON/ ABUNDANT	5/6 ^T
2750	SWC	-	COMMON	COMMON/ ABUNDANT	COMMON	5/6
2800		-	ABUNDANT	ABUNDANT	TRACE	6 ^T
2850	SWC	-	TRACE	TRACE	ABUNDANT	5/6 ^T
2900		-	LEAN/ COMMON	LEAN/ COMMON	LEAN	5/6 ^T
2953	SWC	-	LEAN	COMMON	TRACE	6
3000		-	LEAN/ COMMON	LEAN/ COMMON	LEAN	5/6 ^T
3051	SWC	-	LEAN	COMMON/ ABUNDANT	TRACE	6/7
3100		-	LEAN/ COMMON	COMMON	-	NS

TABLE 5
cont...



DEPTH (m)	STRUCTURED KEROGEN			AMORPHOUS KEROGEN	SPORE COLOUR (1-7)
	CUTICLE	BROWN WOOD	BLACK WOOD		
3202	-	LEAN/ COMMON	COMMON	-	NS
3256 SWC	-	LEAN/ COMMON	ABUNDANT	LEAN	6/7
3301	TRACE	COMMON	COMMON	-	6
3385 SWC	-	LEAN	COMMON	COMMON	6/7
3416	-	LEAN/ COMMON	TRACE/ LEAN	COMMON	6
3444 SWC	TRACE	COMMON	COMMON	COMMON	6/7
3500	-	LEAN/ COMMON	COMMON	COMMON	6/7
3550	-	COMMON	COMMON	COMMON	6/7

Key

- T = Thermal Alteration Index rating completed on amorphous material
- NS = No spores observed
- * = Abundant finely disseminated material observed in the kerogen preparation

TABLE 5



SOLVENT EXTRACT EXAMINATIONS

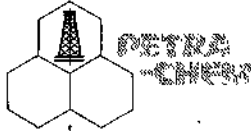
WELL NO: 7321/7-1

DEPTH (m)	TSE (% wt)	SAC (% TSE)	CPI	PR/PH	C ₁₇ /PR	C ₁₈ /PH
Diesel Plug	*	95.2	ND	1.12	1.78	1.97
1500	0.346	92.3	ND	1.43	1.85	2.31
1595	0.431	93.4	ND	1.36	1.88	2.47

Key

TSE = Total Soluble Extract
SAC = Saturate Alkane Content
CPI = Carbon Preference Index
PR = Pristane
PH = Phytane
ND = Not Determined - Alkane range too short

TABLE 6



LITHOLOGY SHEET

WELL NO: 7321/7-1

DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
1000	Cuttings (99%+) Cavings (<1%)	<u>Light-medium grey slightly calcareous mudstone (100%)</u>
1019	Cuttings (60%) Cavings (10%) Cement (30%)	<u>Dark-medium grey mudstone (100%)</u> Medium-light grey siltstone (Trace)
1030	Cuttings (80%) Cavings (20%) Cement (Trace)	<u>Dark-medium grey silty mudstone (100%)</u>
1037.5	Cuttings (50%) Cavings (50%)	<u>Mid-dark grey silty mudstone (98%)</u> Off-white silty sandstone (2%)
1050	Cuttings (60%) Cavings (40%)	<u>Pale grey siltstone (98%)</u> Dark grey claystone (2%)
1068	Cuttings (25%) Cavings (5%) LCM (70%)	<u>Dark grey silty mudstone (100%)</u>
1080	Cuttings (1%) Cavings (4%) LCM (95%)	<u>Dark grey mudstone (100%)</u>
1100	Cuttings (70%) Cavings (10%) LCM (20%)	<u>Medium grey very slightly calcareous mudstone (40%)</u> Light grey slightly calcareous mudstone (30%) Brown slightly calcareous mudstone (30%)
1110	Cuttings (1%) Cavings (4%) LCM (95%)	<u>Dark grey mudstone (40%)</u> Off-white sandstone (60%)

TABLE 7
cont...



DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
1120	Cuttings (5%) Cavings (Trace) LCM (95%)	<u>Dark grey mudstone (100%)</u>
1140	Cuttings (5%) Cavings (Trace) LCM (95%)	<u>Dark grey silty mudstone (100%)</u>
1150	Cuttings (1%) LCM (99%)	<u>Dark grey mudstone (100%)</u>
1170	Cuttings (5%) Cavings (45%) LCM (50%)	<u>Pale grey siltstone (95%)</u> Mid to dark grey claystone (5%)
1180	Cuttings (30%) Cavings (10%) LCM (60%)	<u>Pale grey siltstone (80%)</u> Dark claystone (10%) Mid grey claystone (10%)
1200	Cuttings (80%) Cavings (5%) LCM (15%)	<u>Medium grey slightly calcareous mudstone (60%)</u> Light grey calcareous siltstone (30%) Light brown slightly calcareous mudstone (30%)
1210	Cuttings (45%) Cavings (5%) LCM (50%)	<u>Dark grey mudstone (90%)</u> Medium-dark muddy siltstone (10%)
1220	Cuttings (70%) Cavings (30%) Mica (Trace) Nut Plug (Trace)	<u>Dark to medium grey mudstone (80%)</u> Off-white sandstone (20%)
1250	Cuttings (80%) Cavings (20%) Mica (Trace)	<u>Dark grey mudstone (90%)</u> Off-white silty sandstone (10%)

TABLE 7
cont...



DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
1260	Cuttings (80%) Cavings (20%) Mica (Trace)	<u>Dark grey mudstone (90%)</u> Off-white to mid grey sandstone (10%)
1280	Cuttings (20%) Cavings (60%) Nut Plug (20%) Mica (Trace)	<u>Dark grey mudstone (100%)</u>
1290	Cuttings (70%) Cavings (10%) LCM (20%)	<u>Dark grey mudstone (90%)</u> Medium-dark grey silty mudstone (10%)
1300	Cuttings (20%) Cavings (15%) LCM (65%)	<u>Medium-dark grey mudstone (60%)</u> Medium grey calcareous mudstone (30%) Light grey slightly calcareous siltstone (10%)
1310	Cuttings (5%) Cavings (25%) LCM (70%)	<u>Medium grey muddy siltstone (100%)</u>
1320	Cuttings (40%) Cavings (30%) Nut Plug (30%) Mica (Trace)	<u>Dark grey mudstone (100%)</u>
1330	Cuttings (40%) Cavings (30%) LCM (30%)	<u>Dark grey muddy siltstone (95%)</u> Light grey siltstone (5%)
1340	Cuttings (40%) LCM (60%)	<u>Dark grey mudstone (90%)</u> Dark-medium grey siltstone (10%)

TABLE 7
cont...



DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
1350	Cuttings (60%) Cavings (Trace) LCM (40%)	<u>Dark grey silty mudstone (99%)</u> Light grey muddy sandstone (1%)
1370	Cuttings (Trace) Cavings (5%) LCM (95%)	<u>Dark grey occasionally black mudstone (100%)</u>
1380	Cuttings (Trace) Cavings (Trace) LCM (100%)	<u>Dark grey silty mudstone (100%)</u>
1390	Cuttings (0%) Cavings (1%) Nut Plug (99%) LCM (1%)	No cuttings
1400	Cuttings (30%) Cavings (<2%) LCM (68%)	<u>Medium-dark grey non calcareous mudstone (50%)</u> Light grey-brown non-calcareous siltstone (50%)
1410	Cuttings (40%) Cavings (10%) LCM (50%)	<u>Dark-medium grey silty mudstone (90%)</u> Medium grey silty sandstone (10%)
1440	Cuttings (98%) Cavings (Trace) LCM (2%)	<u>Medium grey siltstone (55%)</u> Medium-dark grey mudstone (35%) Soft clay/drilling mud? (10%)
1470	Cuttings (100%) Cavings (Trace)	<u>Dark grey/brown silty mudstone (60%)</u>
1480	Cuttings (100%)	<u>Dark grey/brown silty mudstone (60%)</u> Dark grey/black mudstone (40%)

TABLE 7
cont...



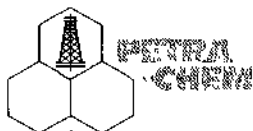
DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
1500	Cuttings (10%) Cavings (5%) LCM (85%)	<u>Medium-dark grey siltstone (30%)</u> Light-medium grey slightly calcareous siltstone (70%)
1520	Cuttings (50%) Cavings (30%) LCM (20%) Nut Plug - (20%)	<u>Off-white to cream sandstone (98%)</u> Dark grey claystone (2%)
1530	Cement (100%)	No cuttings
1586	Cuttings (2%) Cement (3%) LCM (95%)	<u>Dark grey mudstone (100%)</u>
1595	Cuttings (10%) Cavings (5%) Walnut- (35%) Plug LCM (50%)	<u>Medium-dark grey calcareous silty mudstone (60%)</u> Medium dark grey silty mudstone (40%)
1620	Cuttings (Trace) Cavings (Trace) LCM (100%)	<u>Dark grey mudstone (100%)</u>
1630	Cuttings (10%) Cavings (30%) LCM + (60%) Nut Plug	<u>Off white sandstone (100%)</u>
1670	Cuttings (Trace) Cement (60%) LCM (40%)	<u>Dark grey mudstone (100%)</u>
1680	Cavings (1%) LCM (99%)	No cuttings
1695- 1700	No Returns	

TABLE 7
cont...



DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
1700	Cuttings (10%) Cavings (5%) Walnut- (25%) Plug LCM (60%)	<u>Dark grey silty mudstone (100%)</u>
1720	Cuttings (5%) Cement (5%) LCM (90%)	<u>Dark grey/black mudstone (100%)</u>
1730	Cuttings (10%) Cement (30) LCM (60%)	<u>Dark grey/black mudstone (100)</u>
1767	Cuttings (15%) Cement (50%) LCM (35%)	<u>Dark grey mudstone (100%)</u>
1777	Cuttings (2%) Cement (Trace) LCM (98%)	<u>Dark grey mudstone (100%)</u>
1786	Cuttings (5%) Cement (15%) LCM (80%)	<u>Dark grey silty mudstone (100%)</u>
1800	Cuttings (20%) Cavings (5%) Walnut (25%) Mica (25%) LCM (25%)	<u>Light to medium grey muddy siltstone grading to a mudstone (100%)</u>
1813	Cuttings (5%) Cement (80%) LCM (15%)	<u>Dark grey silty mudstone (100%)</u>
1822	Cuttings (10%) Cement (Trace) LCM (90%)	<u>Dark grey mudstone (100%)</u>

TABLE 7
cont...



DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
1831	Cuttings (15%) Cavings (5%) Cement (10%) LCM (70%)	<u>Dark grey to black mudstone (100%)</u>
1840	Cuttings (90%) Cavings (Trace) Cement (10%)	<u>Black mudstone (80%)</u> Dark grey silty mudstone (20%)
1867	Cuttings (90%) Cavings (6%) Cement (2%) LCM (2%)	<u>Black to dark grey mudstone (80%)</u> Black/dark brown silty mudstone (20%)
1885	Cuttings (75%) Cavings (15%) Cement (5%) Mica (5%) LCM (Trace)	<u>Dark grey mudstone (60%)</u> Medium grey muddy siltstone (40%)
1900	Cuttings (80%) Cavings (Trace) Cement (10%) Mica (5%) LCM (Trace)	<u>Medium to dark grey mudstone (70%)</u> Medium grey muddy siltstone (15%) Dark grey to black mudstone (15%)
1950	Cuttings (95%) Cavings (Trace) LCM (Trace)	<u>Dark grey to black micaceous mudstone (100%)</u> Medium to light grey dolomitic mudstone (Trace)
1990	Cuttings (90%) Cavings (5%) LCM (Trace)	<u>Medium to dark grey mudstone with micaceous horizons (60%)</u> Pale to medium grey slightly dolomitic siltstone (40%)
2029	Cuttings (100%)	<u>Black mudstone (30%)</u> Red/brown muddy sandstone (70%)
2038	Cuttings (100%) Cavings (Trace)	<u>Medium red/brown muddy sandstone (90%)</u> <u>Black occasionally silty mudstone (10%)</u>

TABLE 7
cont...



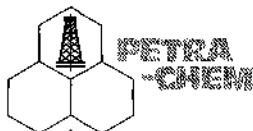
DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
2065	Cuttings (60%) Cavings (40%) Rust (Trace)	<u>Black mudstone (30%)</u> Medium grey mudstone (30%) Medium red/brown muddy sandstone (40%)
2074	Cuttings (100%) Cavings (Trace)	<u>Black mudstone (25%)</u> Medium red/brown sandstone (65%) Medium grey mudstone (10%)
2083	Cuttings (100%) Cavings (Trace)	<u>Black occasionally silty mudstone (30%)</u> Medium red/brown muddy sandstone (70%)
2100	Cuttings (100%) Cavings (Trace) Mica (Trace) Plastic (Trace)	<u>Medium to fine grained, muddy medium grey coloured calcareous cemented sandstone with mudstone laminae (90%)</u> <u>Black to dark grey mudstone (5%)</u> Light to medium grey mudstone (5%)
2110	Cuttings (100%)	<u>Black mudstone (10%)</u> Medium red/brown dark grey muddy siltstone (90%)
2119	Cuttings (90%) Cavings (10%)	<u>Black to medium grey silty mudstone (20%)</u> Medium red/brown muddy sandstone (80%)
2128	Cuttings (95%) Cavings (5%)	<u>Dark to medium grey micaceous silty mudstone (30%)</u> Light-medium grey muddy siltstone (40%) Medium grey muddy sandstone (30%)
2137	Cuttings (90%) Cavings (10%)	<u>Dark to medium grey micaceous silty mudstone (30%)</u> Light-medium grey muddy siltstone (40%) Medium grey muddy sandstone (30%)

TABLE 7
cont...



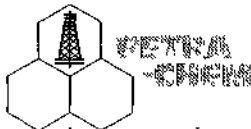
DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
2164	Cuttings (100%) Cavings (Trace) Rust (Trace)	<u>Dark-medium grey silty mudstone (50%)</u> Light-medium grey muddy siltstone (35%) Medium grey muddy sandstone (15%)
2173	Cuttings (100%) Rust (Trace)	<u>Dark-medium grey silty mudstone (40%)</u> Light-medium grey muddy siltstone (40%) Light-medium grey sandstone (20%)
2182	Cuttings (95%) Cavings (5%)	<u>Black/dark grey occasionally silty mudstone (50%)</u> Light-medium grey muddy siltstone (40%) Light-medium grey muddy sandstone (10%)
2200	Cuttings (95%) Cavings (5%) Wood (Trace) Straw (Trace)	<u>Medium to dark grey mudstone (95%)</u> Medium to pale grey calcareous mudstone (5%) Medium grained pale grey sandstone (Trace)
2218	Cuttings (100%) Cavings (Trace)	<u>Dark grey silty mudstone (60%)</u> Medium grey muddy siltstone (10%) Light-medium grey muddy sandstone (30%)
2227	Cuttings (90%) Cavings (10%)	<u>Dark grey slightly micaceous silty mudstone (10%)</u> Medium grey siltstone (25%) Light-medium grey sandstone (65%)
2236	Cuttings (90%) Cavings (10%)	<u>Dark grey mudstone (30%)</u> Light-medium grey silty mudstone (40%) Light-medium grey silty sandstone (30%)

TABLE 7
cont...



DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
2263	Cuttings (80%) Cavings (20%)	<u>Medium grey silty mudstone (50%)</u> Dark grey mudstone (10%) Light-medium grey sandstone (40%)
2272	Cuttings (75%) Cavings (25%)	<u>Light to medium grey micaceous siltstone (45%)</u> Light grey sandstone (50%) Medium to dark grey shale (5%)
2281	Cuttings (65%) Cavings (35%)	<u>Light to medium grey silty mudstone (60%)</u> Light to medium grey siltstone (40%)
2290	Cuttings (95%) Cavings (5%)	<u>Medium grey mudstone (60%)</u> Off-white to pale grey silty sandstone (40%)
2300	Cuttings (100%) Cavings (Trace)	<u>Dark grey to black mudstone with silty horizons (35%)</u> Medium grey calcareous mudstone (40%) Pale grey to white fine grained limestone (20%) Pale grey medium grained sandstone with muddy horizons (5%)
2317	Cuttings (95%) Cavings (5%) Rust (Trace)	<u>Medium grey mudstone (40%)</u> Light-medium grey silty sandstone (60%)
2326	Cuttings (80%) Cavings (20%)	<u>Medium grey mudstone (20%)</u> Light/medium grey siltstone (80%)
2335	Cuttings (80%) Cavings (20%) Rust (Trace)	<u>Medium grey occasionally dark grey mudstone (70%)</u> Light/medium grey silty sandstone (30%)

TABLE 7
cont...



DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
2362	Cuttings (85%) Cavings (15%)	<u>Dark grey mudstone (20%)</u> Medium grey siltstone (25%) Light grey sandstone (50%) Light grey limestone (5%)
2371	Cuttings (90%) Cavings (19%) Rust (Trace)	<u>Dark grey mudstone (10%)</u> Medium muddy siltstone (60%) Medium-light sandstone (30%)
2380	Cuttings (80%) Cavings (20%)	<u>Dark grey mudstone (20%)</u> Medium grey silty mudstone (30%) Light grey sandstone (40%) Whitish grey limestone (10%)
2389	Cuttings (70%) Cavings (30%) LCM (Trace)	<u>Dark-medium grey mudstone (20%)</u> Light-medium grey sandstone (80%)
2400	Cuttings (85%) Cavings (10%) Pipe Dope (5%) LCM (Trace)	<u>Pale to light grey calcareous mudstone (25%)</u> <u>Dark grey to black mudstone (50%)</u> Light grey to white limestone (25%)
2416	Cuttings (80%) Cavings (20%) Rust (Trace)	<u>Mid to dark grey mudstone (20%)</u> Off-white to mid grey sandstone (80%)
2425	Cuttings (85%) Cavings (15%)	<u>Mid to dark grey mudstone (25%)</u> Off-white to mid grey sandstone (75%)
2434	Cuttings (75%) Cavings (25%)	<u>Dark grey mudstone (50%)</u> Off-white to grey silty sandstone (50%)
2461	Cuttings (80%) Cavings (20%)	<u>Dark grey mudstone (30%)</u> Off-white to grey silty sandstone (55%) Mid grey claystone (15%)

TABLE 7
cont...



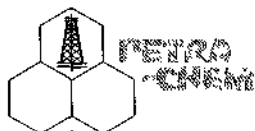
DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
2470	Cuttings (20%) Cavings (80%) Pipedope (Trace)	<u>Dark grey mudstone (50%)</u> Medium-light grey silty sandstone (20%) Medium grey mudstone (30%)
2479	Cuttings (60%) Cavings (30%)	<u>Dark grey mudstone (65%)</u> Pale grey siltstone (30%) Pale grey sandstone (5%)
2488	Cuttings (90%) Cavings (10%) Pipedope (Trace)	<u>Dark grey mudstone (60%)</u> Pale grey siltstone (15%) Off-white sandstone (5%)
2500	Cuttings (75%) Cavings (25%)	<u>Pale-medium grey mudstone/ siltstone (100%)</u>
2515	Cuttings (95%) Cavings (5%)	<u>Medium grey siltstone (45%)</u> Light grey siltstone (55%)
2524	Cuttings (80%) Cavings (20%)	<u>Medium-dark grey mudstone (40%)</u> Medium-light grey silty sandstone (60%)
2533	Cuttings (55%) Cavings (45%)	<u>Medium grey siltstone (35%)</u> Light to medium grey sandstone (35%)
2560	Cuttings (70%) Cavings (30%) Rust (Trace)	<u>Black occasionally coaly mudstone (45%)</u> Medium grey mudstone (55%) Light-medium grey sandstone (5%)
2569	Cuttings (65%) Cavings (20%) LCM (15%)	<u>Black/dark grey mudstone (40%)</u> Light grey silty mudstone (60)
2578	Cuttings (65%) Cavings (35%)	<u>Dark grey mudstone (14%)</u> Medium grey silty mudstone (45%) Medium-light grey sandstone (40%) Light grey limestone (1%)

TABLE 7
cont...



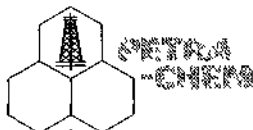
DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
2587	Cuttings (40%) Cavings (60%)	<u>Dark grey mudstone (15%)</u> Medium-light grey siltstone (40%) Light grey sandstone (40%) Whitish grey limestone (5%)
2596	Cuttings (85%) Cavings (15%) Rust (Trace)	<u>Medium-dark grey mudstone (10%)</u> Light-medium muddy siltstone (90%)
2599	Cuttings (85%) Cavings (15%) Cement (Trace) LCM (Trace)	<u>Dark-medium grey carbonaceous mudstone (25%)</u> Medium grey siltstone (75%)
2605	Cuttings (80%) Cavings (20%)	<u>Grey-black coal (10%)</u> <u>Dark grey carbonaceous mudstone (20%)</u> Medium grey silty sandstone (70%)
2614	Cuttings (80%) Cavings (20%)	<u>Dark grey mudstone (20%)</u> Medium grey siltstone (34%) Light-medium grey sandstone (45%) Light grey limestone (1%)
2623	Cuttings (90%) Cavings (10%)	<u>Black-dark grey mudstone (15%)</u> Medium-dark grey mudstone (30%) Light grey silty sandstone (50%) Light grey limestone (5%)
2632	Cuttings (90%) Cavings (10%)	<u>Black lustrous coal (20%)</u> Dark grey silty mudstone (30%) Medium grey mudstone (20%) Light grey silty sandstone (30%)

TABLE 7
cont...



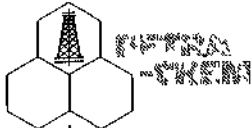
DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
2668	Cuttings (90%) Cavings (25%)	<u>Dark grey-black mudstone (10%)</u> Medium grey silty mudstone (25%) Light-medium grey silty sandstone (15%) Light grey coarse sandstone (50%)
2677	Cuttings (95%) Cavings (5%)	<u>Black occasionally coaly mudstone (10%)</u> Medium grey mudstone (40%) Medium-light grey silty sandstone (50%)
2686	Cuttings (90%) Cavings (10%) Mica (Trace)	<u>Dark grey to black occasionally carbonaceous shale (85%)</u> Light to mid grey siltstone (10%) White to off-white sandstone (5%)
2700	Cuttings (80%) Cavings (20%) Plastic (Trace) Cement (Trace)	<u>Medium grey occasionally calcareous siltstone (75%)</u> Dark-medium grey mudstone (25%)
2713	Cuttings (98%) Cavings (2%)	<u>Dark grey to black shale (25%)</u> Light to mid-grey silty mudstone (5%) Off-white to grey sandstone (70%)
2722	Cuttings (90%) Cavings (10%)	<u>Dark grey shale (30%)</u> <u>Medium grey shale (68%)</u> Off-white to grey sandstone (2%)
2731	Cuttings (85%) Cavings (15%)	<u>Dark grey shale (30%)</u> Medium grey shale (10%) Off-white to grey sandstone (60%)

TABLE 7
cont...



DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
2740	Cuttings (98%) Cavings (2%) Rust (Trace)	<u>Mid to dark grey mudstone (30%)</u> Off-white to grey sandstone (70%)
2767	Cuttings (75%) Cavings (25%)	<u>Dark grey mudstone (90%)</u> Off-white to grey sandstone (8%) White sandstone (2%)
2776	Cuttings (85%) Cavings (15%)	<u>Dark grey mudstone (70%)</u> Dark-medium grey siltstone (15%) Medium grey sandstone (15%)
2785	Cuttings (60%) Cavings (40%)	<u>Dark grey slightly micaceous silty mudstone (35%)</u> Off-white to grey and often micaceous muddy sandstone (65%)
2800	Cuttings (100%) Cavings (Trace) Shell (Trace)	<u>Dark grey to black mudstone (85%)</u> Dark grey muddy slightly calcareous siltstone (10%) Medium grey fine grained calcareous sandstone with pyrite (5%)
2812	Cuttings (85%) Cavings (15%)	<u>Dark grey mudstone (65%)</u> Dark-medium grey siltstone (25%) Light grey sandstone (9%) White limestone (1%)
2821	Cuttings (90%) Cavings (10%)	<u>Dark grey mudstone (70%)</u> Dark-medium grey mudstone (20%) Light grey sandstone (10%)
2830	Cuttings (85%) Cavings (15%)	<u>Dark grey mudstone (25%)</u> Medium-dark grey siltstone (45%) Medium-light grey sandstone (30%)

TABLE 7
cont...



DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
2839	Cuttings (100%) Cavings (Trace)	<u>Dark grey mudstone (40%)</u> Dark-medium grey siltstone (10%) Medium-light grey sandstone (50%)
2866	Cuttings (5%) Cavings (95%)	<u>Dark grey mudstone (20%)</u> Dark-medium grey siltstone (50%) Medium-light grey sandstone (30%)
2875	Cuttings (70%) Cavings (30%)	<u>Dark grey mudstone (20%)</u> Medium grey silty mudstone (25%) Light-medium grey calcareous silty sandstone (50%) Light grey limestone (5%)
2884	Cuttings (75%) Cavings (25%)	<u>Dark grey occasionally black mudstone (25%)</u> Medium grey silty mudstone (50%) Light-medium grey silty sandstone (25%)
2900	Cuttings (100%) Cavings (Trace) Shells (Trace)	<u>Dark grey to black mudstone (50%)</u> Fine grained muddy calcareous sandstone medium to pale grey with pyrite and mud partings (50%)
2911	Cuttings (70%) Cavings (30%)	<u>Dark grey mudstone (20%)</u> Medium grey silty mudstone (20%) Light to medium grey silty sandstone (60%)
2920	Cuttings (90%) Cavings (10%)	<u>Dark-medium grey silty mudstone (30%)</u> Medium grey silty sandstone (30%) Medium-light grey sandstone (40%)

TABLE 7
cont...



DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
2929	Cuttings (100%) Cavings (Trace)	<u>Dark grey mudstone (50%)</u> Light-medium grey silty sandstone (50%)
2938	Cuttings (95%) Cavings (5%)	<u>Dark grey silty mudstone (30%)</u> Light-medium grey silty sandstone (70%)
2965	Cuttings (100%) Cavings (Trace)	<u>Dark grey silty mudstone (60%)</u> Light-medium grey silty sandstone (40%)
2973	Cuttings (100%) Cavings (Trace) Rust (Trace)	<u>Dark grey silty mudstone (30%)</u> Medium grey silty sandstone (70%)
2983	Cuttings (95%) Cavings (5%)	<u>Dark grey mudstone (5%)</u> Medium grey siltstone (40%) Light-medium grey fine-medium sandstone (55%)
3000	Cuttings (100%) Plastic (Trace)	<u>Dark grey to black muddy siltstone (80%)</u> Medium grey fine grained micaceous calcareous cemented sandstone with muddy partings (20%)
3010	Cuttings (95%) Cavings (5%)	<u>Dark grey mudstone (25%)</u> Medium grey siltstone (35%) Light-medium grey sandstone (40%)
3019	Cuttings (90%) Cavings (10%)	<u>Dark grey mudstone (30%)</u> Dark-medium grey siltstone (30%) Light-medium grey sandstone (40%)
3028	Cuttings (90%) Cavings (10%)	<u>Dark grey mudstone (30%)</u> Medium grey siltstone (30%) Light grey sandstone (40%)

TABLE 7
cont...



DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
3037	Cuttings (95%) Cavings (5%)	<u>Dark grey mudstone (50%)</u> Medium grey siltstone (20%) Light grey silty sandstone (30%)
3064	Cuttings (95%) Cavings (5%)	<u>Dark grey mudstone (65%)</u> Medium grey siltstone (25%) Medium-light grey sandy siltstone (10%)
3073	Cuttings (90%) Cavings (10%)	<u>Dark grey mudstone (55%)</u> Medium grey siltstone (20%) Medium-light grey silty sandstone (25%)
3082	Cuttings (95%) Cavings (5%)	<u>Dark grey mudstone (55%)</u> Light-medium grey slightly calcareous silty sandstone (45%)
3100	Cuttings (100%)	<u>Dark grey to black mudstone (50%)</u> Medium grey fine grained silty sandstone with muddy partings (50%)
3118	Cuttings (90%) Cavings (10%)	<u>Dark grey silty mudstone (40%)</u> Light-medium grey slightly calcareous silty sandstone (60%)
3127	Cuttings (95%) Cavings (5%)	<u>Dark grey mudstone (25%)</u> Medium grey siltstone (25%) Light grey slightly calcareous silty sandstone (50%)
3136	Cuttings (95%) Cavings (5%)	<u>Dark grey mudstone (20%)</u> Medium grey siltstone (20%) Light grey slightly calcareous silty sandstone (60%)

TABLE 7
cont...



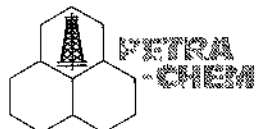
DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
3163	Cuttings (95%) Cavings (5%)	<u>Dark grey-black mudstone (20%)</u> Medium grey siltstone (35%) Light-medium grey slightly calcareous sandstone (40%) Light grey limestone (5%)
3172	Cuttings (90%) Cavings (10%)	<u>Dark grey mudstone (30%)</u> Medium grey siltstone (30%) Light grey silty sandstone (40%)
3190	Cuttings (95%) Cavings (5%)	<u>Dark grey mudstone (10%)</u> Light grey limestone (5%) Light-medium grey sandstone (50%) Light grey slightly calcareous sandstone (15%) Dark grey siltstone (20%)
3202	Cuttings (100%) Cavings (Trace)	<u>Dark grey to black muddy micaceous siltstone (50%)</u> Fine grained medium grey silty slightly calcareous sandstone (50%)
3217	Cuttings (95%) Cavings (5%)	<u>Dark grey mudstone (20%)</u> Light grey sandstone (60%) Light grey limestone (5%) Light grey calcareous sandstone (5%) Medium-dark grey siltstone (10%)
3235	Cuttings (95%) Cavings (5%)	<u>Dark grey mudstone (30%)</u> Medium-dark grey siltstone (20%) Light grey slightly calcareous silty sandstone (50%)
3244	Cuttings (95%) Cavings (5%)	<u>Dark grey mudstone (30%)</u> Medium-dark grey silty mudstone (25%) Medium grey silty sandstone (40%) Light grey limestone (5%)

TABLE 7
cont...



DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
3271	Cuttings (95%) Cavings (5%)	<u>Dark grey-black lustrous mudstone (30%)</u> Dark-medium grey siltstone (30%) Medium grey coarse sandstone (15%) Light-medium grey sandstone (25%)
3280	Cuttings (95%) Cavings (5%)	<u>Dark grey mudstone (35%)</u> Dark grey siltstone (10%) Medium grey siltstone (20%) Light-medium grey sandstone (35%)
3289	Cuttings (95%) Cavings (5%)	<u>Dark grey mudstone (30%)</u> Dark grey siltstone (20%) Medium grey silty sandstone (20%) Light-medium grey sandstone (30%)
3301	Cuttings (100%) Coal (Trace)	<u>Black silty mudstone (20%)</u> Medium grey siltstone (40%) Medium grey fine grained calcareous sandstone (30%)
3316	Cuttings (95%) Cavings (5%)	<u>Dark grey mudstone (25%)</u> Light grey limestone (5%) Medium-light grey coarse sandstone (45%) Dark-medium grey siltstone (25%)
3325	Cuttings (90%) Cavings (10%)	<u>Dark grey-black lustrous coal (10%)</u> Light grey limestone (5%) Medium grey sandstone (30%) Medium grey silty sandstone (30%) Dark grey silty mudstone (25%)

TABLE 7
cont...



DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
3334	Cuttings (95%) Cavings (5%)	<u>Dark grey mudstone (30%)</u> Medium grey siltstone (35%) Medium-light grey sandstone (25%) Light grey limestone (10%)
3343	Cuttings (95%) Cavings (5%)	<u>Dark grey-black mudstone (25%)</u> White limestone (10%) Light-medium grey sandstone (35%) Medium grey silty sandstone (15%) Medium-dark grey siltstone (15%)
3352	Cuttings (95%) Cavings (5%)	<u>Dark grey mudstone (25%)</u> Medium grey siltstone (25%) Light-medium grey sandstone (40%) Light grey limestone (10%)
3361	Cuttings (90%) Cavings (10%)	<u>Dark grey mudstone (20%)</u> Medium-dark grey silty mudstone (20%) Light-medium grey sandstone (55%) Light grey limestone (5%)
3370	Cuttings (90%) Cavings (10%)	<u>Dark grey mudstone (10%)</u> Light-medium grey calcareous sandstone (60%) Medium-dark grey siltstone (30%)
3397	Cuttings (90%) Cavings (10%)	<u>Dark grey mudstone (40%)</u> Light grey limestone (5%) Light-medium grey coarse sandstone (35%) Medium-light grey medium-fine sandstone (15%) Medium-dark grey siltstone (5%)

TABLE 7
cont...



DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
3406	Cuttings (95%) Cavings (5%)	<u>Dark grey-black silty mudstone (40%)</u> Light-medium grey sandstone (40%) Medium-dark grey siltstone (20%)
3416	Cuttings (100%)	<u>Dark grey to black mudstone (80%)</u> Medium grey fine grained sandstone with mica (20%)
3433	Cuttings (95%) Cavings (5%)	<u>Dark grey to black silty mudstone (60%)</u> Medium grey muddy micaceous siltstone (30%) Medium to pale grey sandstone (10%)
3460	Cuttings (99%) Cavings (1%)	<u>Dark grey to black occasionally micaceous siltstone (30%)</u> Medium to pale grey sandstone (70%)
3469	Cuttings (98%) Cavings (2%)	<u>Dark grey-black mudstone (10%)</u> Medium grey muddy sandstone (60%) Dark grey silty mudstone (30%)
3478	Cuttings (98%) Cavings (2%)	<u>Dark grey-black mudstone (30%)</u> Medium grey muddy siltstone (10%) Off-white to grey sandstone (60%)
3487	Cuttings (90%) Cavings (10%)	<u>Dark grey to black silty mudstone (25%)</u> Pale to medium grey silty sandstone (75%)

TABLE 7
cont...



DEPTH (m)	GROSS SAMPLE DESCRIPTION (% OF WHOLE SAMPLE)	LITHOLOGICAL DESCRIPTION OF CUTTINGS (% OF TOTAL IN PLACE)
3500	Cuttings (100%) Plastic (Trace)	<u>Dark grey to black muddy siltstone (50%)</u> Medium grey fine grained sandstone with muddy partings (50%)
3514	Cuttings (90%) Cavings (10%)	<u>Dark grey silty mudstone (70%)</u> Pale grey sandstone (30%)
3523	Cuttings (95%) Cavings (5%)	<u>Dark grey to black silty mudstone (55%)</u> Medium grey micaceous siltstone (40%) Off-white sandstone (5%)
3532	Cuttings (98%) Cavings (2%) LCM (Trace)	<u>Dark grey to black silty mudstone (60%)</u> Medium to dark grey micaceous siltstone (35%) Pale grey sandstone (5%)
3541	Cuttings (98%) Cavings (2%) Nutplug (Trace)	<u>Dark grey to black mudstone (40%)</u> Medium to dark grey siltstone (40%) Pale grey sandstone (20%)
3550	Cuttings (95%) Cavings (5%)	<u>Dark grey mudstone (60%)</u> Medium to dark grey siltstone (40%)

Key

Emboldened and underlined lithologies are those selected for analysis.

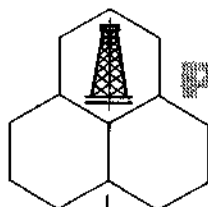
LCM = Lost circulation material

TABLE 7



REFERENCES

1. Batten, D.J. (1980) Presented in "Organic Maturation Studies and Fossil Fuel Exploration" p.205, Publs. Academic Press. Ed. J Brooks
2. Clementz, D.M. "Effect of oil and bitumen saturation on source-rock pyrolysis". AAPG 63, pp. 2227-2232.



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**Independent Consultants to the Oil Industry
PROJECT NO. 900788**

SOURCE ROCK EVALUATION

OF MATERIAL FROM

BARENTS SEA WELL: 7321/7-1

VOLUME II

BA-89-569-1
19 APR. 1989
REGISTRERT
OLJEDIREKTORATET

A Petroleum Geochemistry Report

Prepared by Petra-Chem Limited

On Behalf Of

Mobil Exploration Norway Inc.

MARCH 1989



APPENDIX A

VITRINITE HISTOGRAMS AND CHROMATOGRAMS



VITRINITE HISTOGRAMS

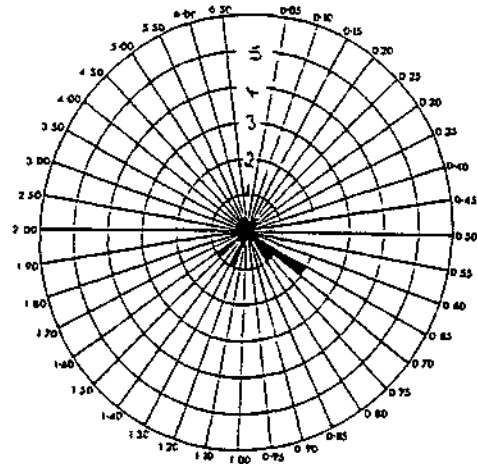
(1) Depth 617m (SWC)

Phytoclast Content - Very low

Phytoclast Condition - Majority extremely small and rounded

Measurements Completed (6):-

0.72, 0.69, 0.69, 0.76,
1.25, 1.58.



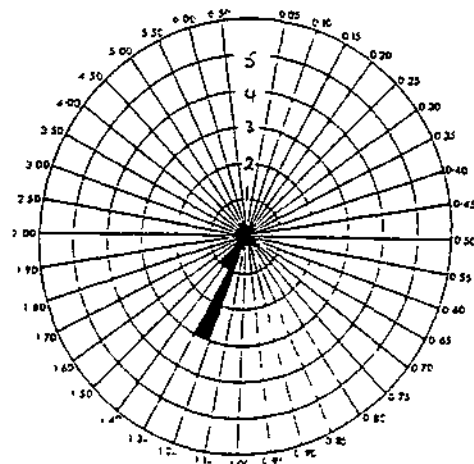
(2) Depth 623m (SWC)

Phytoclast Content - Very low

Phytoclast Condition - All small and rounded

Measurements Completed (5):-

1.40, 1.29, 1.36, 1.24,
1.28.





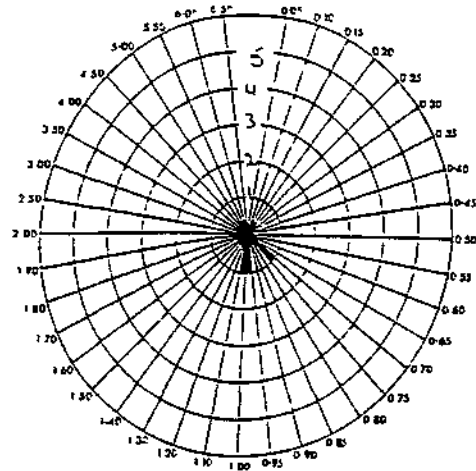
(3) Depth 644m (SWC)

Phytoclast Content - Extremely low

Phytoclast Condition - Usually very small (<3 microns) and rounded

Measurements Completed (3):-

0.72, 0.99, 1.04.



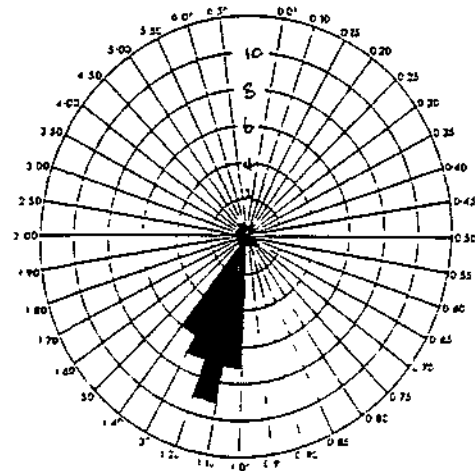
(4) Depth 664m (SWC)

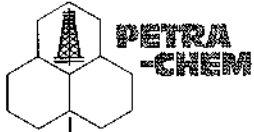
Phytoclast Content - Moderate

Phytoclast Condition - Generally small and rounded

Measurements Completed (30):-

1.27, 1.23, 1.36, 1.36,
1.40, 1.40, 1.40, 1.36,
1.40, 1.36, 1.15, 1.15,
1.27, 1.36, 1.27, 1.15,
1.15, 1.10, 1.23, 1.23,
2.04, 1.19, 1.19, 1.27,
1.40, 1.32, 1.27, 1.36,
1.40, 1.27.





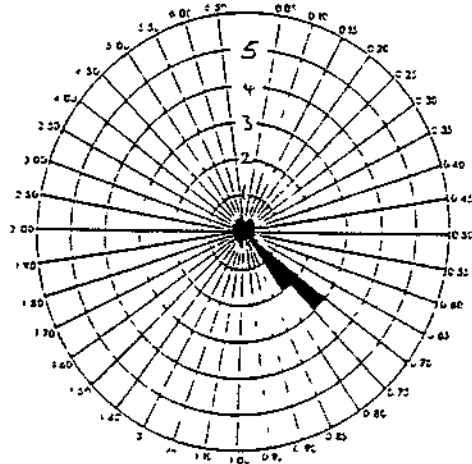
(5) Depth 700m (SWC)

Phytoclast Content - Very low

Phytoclast Condition - Majority small and rounded

Measurements Completed (7):-

0.71, 0.76, 0.72, 0.78,
0.74, 1.93, 1.89.



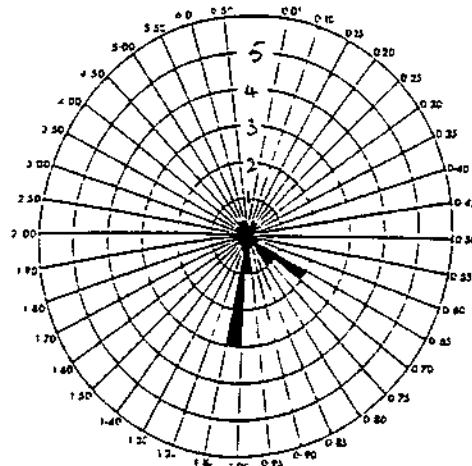
(6) Depth 718m (SWC)

Phytoclast Content - Very low

Phytoclast Condition - Extremely small, rounded particles

Measurements Completed (8):-

0.69, 0.66, 0.72, 0.76,
1.05, 1.02, 0.99, 1.08



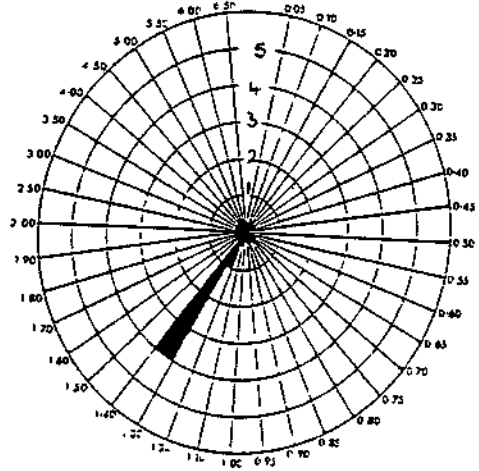


(7) Depth 736m (SWC)

Phytoclast Content - Extremely low
Phytoclast Condition - Very small and rounded

Measurements Completed (5):-

1.36, 1.27, 1.36, 1.32,
1.32.

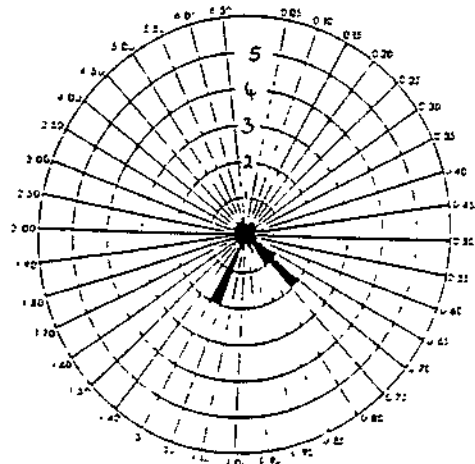


(8) Depth 771m (SWC)

Phytoclast Content - Very low
Phytoclast Condition - Very small, mostly rounded

Measurements Completed (6):-

0.69, 0.75, 0.72, 0.71,
1.28, 1.20.



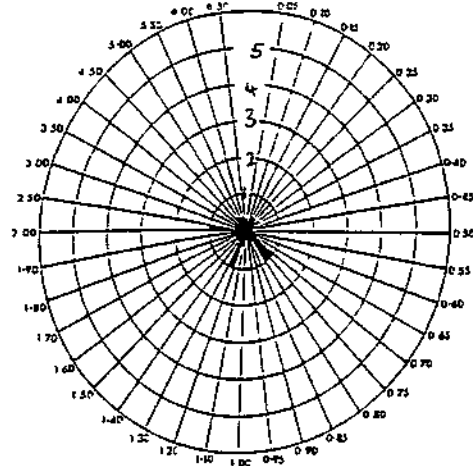


(9) Depth 791m (SWC)

Phytoclast Content - Extremely low
Phytoclast Condition - Very small and rounded

Measurements Completed (4):-

0.72, 0.79, 1.28, 2.24.

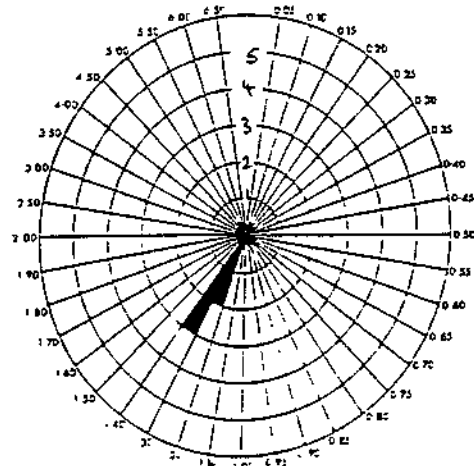


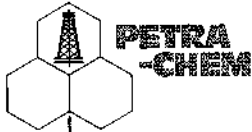
(10) Depth 804m (SWC)

Phytoclast Content - Very low
Phytoclast Condition - Generally small and rounded

Measurements Completed (5):-

1.27, 1.36, 1.24, 1.34,
1.38.



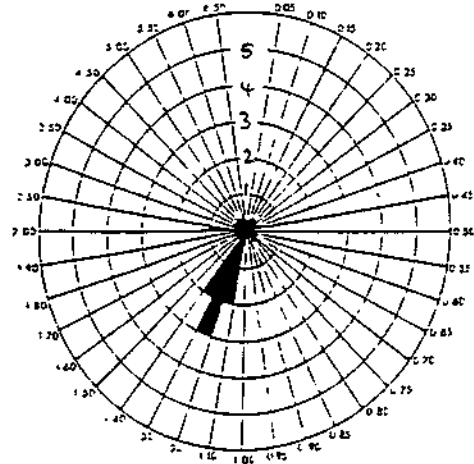


(11) Depth 848m (SWC)

Phytoclast Content - Very low
Phytoclast Condition - Vitrinite where present rather small
and often rounded

Measurements Completed (8):-

1.19, 1.34, 1.27, 1.24,
1.18, 1.24, 1.36, 2.19.

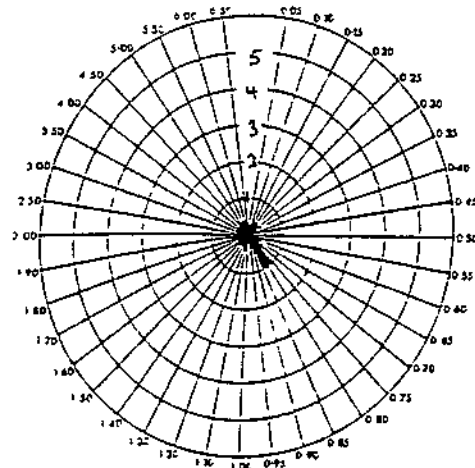


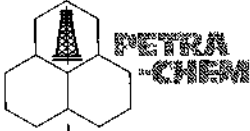
(12) Depth 872m (SWC)

Phytoclast Content - Extremely low
Phytoclast Condition - Generally very small and rounded

Measurements Completed (2):-

0.79, 0.82.



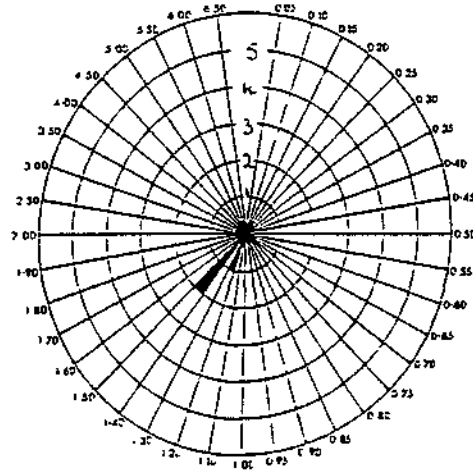


(13) Depth 884m (SWC)

Phytoclast Content - Extremely low
Phytoclast Condition - Very small and rounded

Measurements Completed (3):-

1.27, 1.44, 1.49.

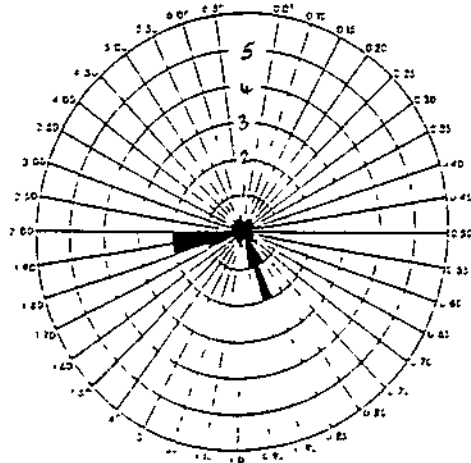


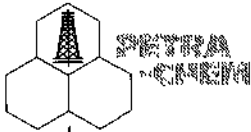
(14) Depth 920m (SWC)

Phytoclast Content - Very low
Phytoclast Condition - Small and generally rounded. Very few respectable wisps

Measurements Completed (9):-

0.81, 0.87, 0.85, 0.91,
1.75, 1.92, 1.86, 1.88,
1.97.





(15) Depth 938m (SWC)

Phytoclast Content - Virtually nil
Phytoclast Condition - Nothing measurable

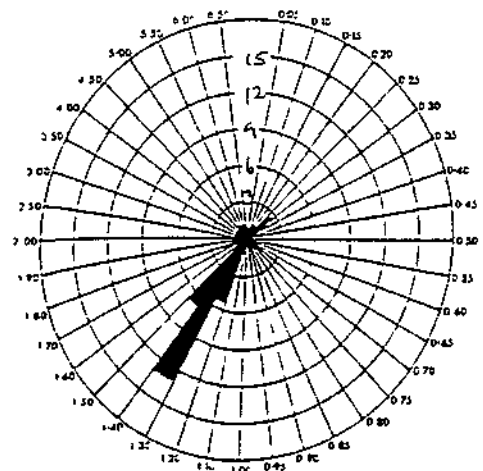
No Determination Possible

(16) Depth 956m (SWC)

Phytoclast Content - Moderate
Phytoclast Condition - Generally small and rounded. Bitumen present

Measurements Completed (30):-

0.29, 0.33, 0.29, 1.32,
1.27, 1.32, 1.40, 1.36,
1.44, 1.32, 1.36, 1.36,
1.36, 1.32, 1.27, 1.40,
1.36, 1.40, 1.36, 1.32,
1.27, 1.47, 1.27, 1.40,
1.36, 1.44, 1.27, 1.36,
1.83, 2.00.



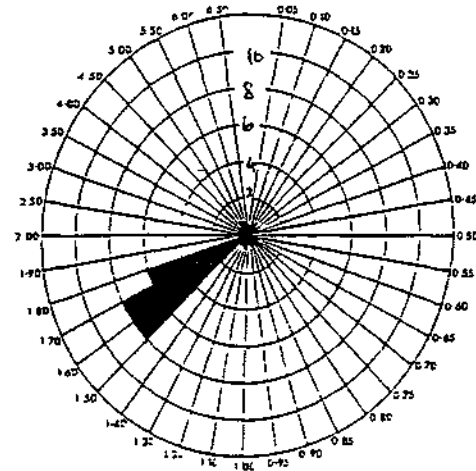


(17) Depth 968m (SWC)

Phytoclast Content - Moderate
Phytoclast Condition - Generally small and rounded

Measurements Completed (22):-

1.62, 1.58, 1.71, 1.78,
1.54, 1.61, 1.55, 1.61,
1.72, 1.59, 1.67, 1.54,
1.71, 1.63, 1.53, 1.58,
1.64, 1.66, 1.71, 1.69,
1.76, 1.59.

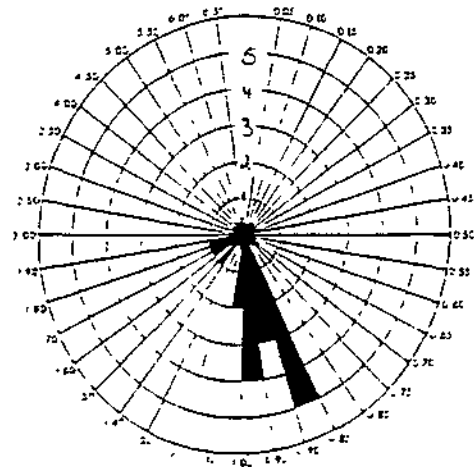


(18) Depth 1000m

Phytoclast Content - Low
Phytoclast Condition - Generally small, with a few
respectable vitrinite wisps

Measurements Completed (18):-

0.86, 0.97, 0.92, 0.92,
0.89, 0.89, 0.97, 0.95,
0.95, 0.92, 1.03, 0.86,
0.86, 1.06, 1.49, 1.64,
1.84, 1.70,





(19) Depth 1100m

Phytoclast Content - Virtually nil
Phytoclast Condition - Nothing measurable

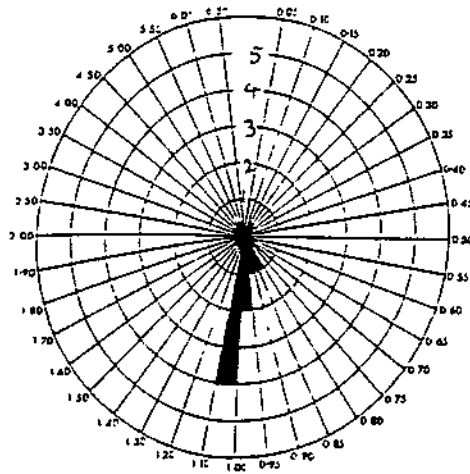
No Determination Possible

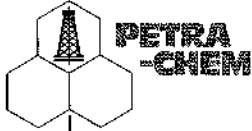
(20) Depth 1200m

Phytoclast Content - Very low
Phytoclast Condition - Very small and rounded

Measurements Completed (9):-

0.83, 0.86, 0.95, 0.95,
0.91, 1.16, 1.12, 1.10,
1.13.



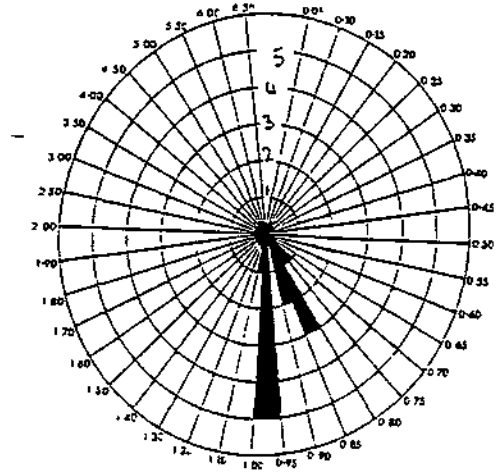


(21) Depth 1300m

Phytoclast Content - Low
Phytoclast Condition - Usually rather small, with a few respectable particles

Measurements Completed (13):-

0.83, 0.97, 1.00, 0.74,
0.97, 0.95, 0.86, 0.83,
0.86, 0.77, 0.97, 0.97,
0.83.



(22) Depth 1400m

Phytoclast Content - Virtually nil
Phytoclast Condition - Nothing measurable

No Determination Possible

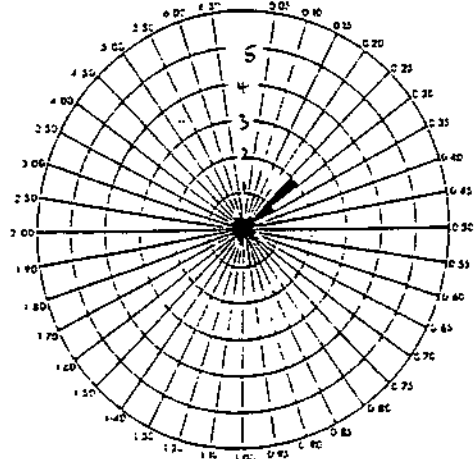


(23) Depth 1450m (SWC)

Phytoclast Content - Virtually nil
Phytoclast Condition - Only bitumen measurable

Measurements Completed (3):-

0.29, 0.31, 0.27.

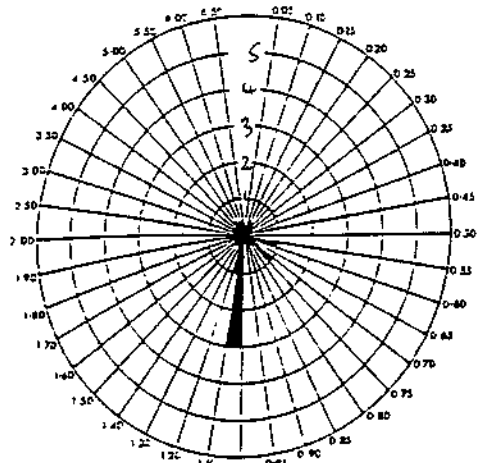


(24) Depth 1500m

Phytoclast Content - Very low
Phytoclast Condition - Very small particles, usually rounded

Measurements Completed (6):-

0.55, 0.73, 1.18, 1.08,
1.09, 1.09.





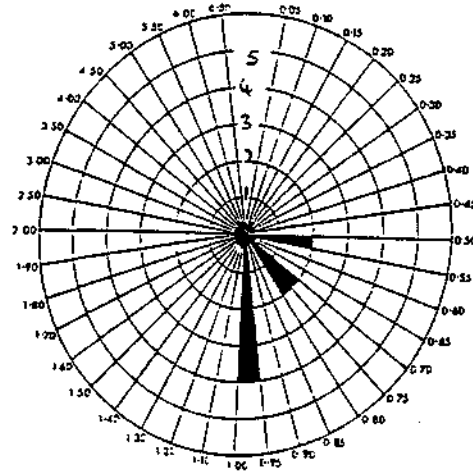
(25) Depth 1595m

Phytoclast Content - Very low

Phytoclast Condition - Generally rather small and rounded

Measurements Completed (10):-

0.52, 0.74, 0.52, 0.75,
0.77, 0.71, 0.98, 0.96,
0.99, 0.96.



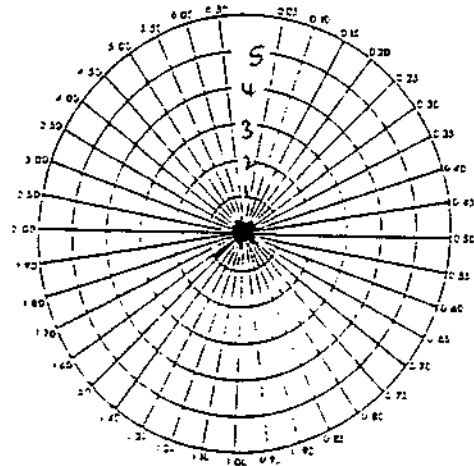
(26) Depth 1650m (SWC)

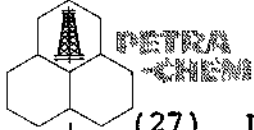
Phytoclast Content - Extremely low

Phytoclast Condition - Only one particle measurable

Measurements Completed (1):-

1.55.



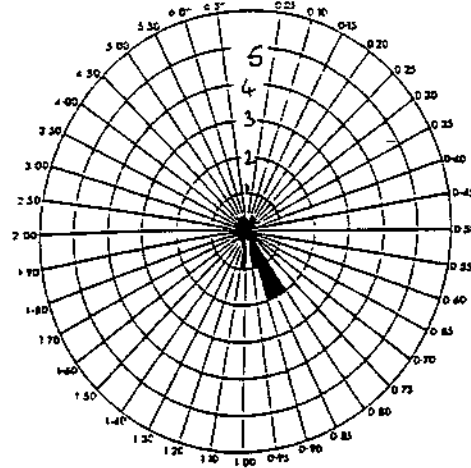


(27) Depth 1700m

Phytoclast Content - Very low
Phytoclast Condition - Generally small particles and wisps,
often well rounded

Measurements Completed (6):-

0.81, 0.87, 0.87, 0.84,
0.93, 1.00.

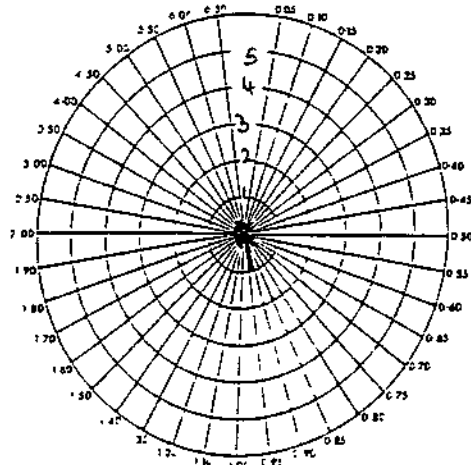


(28) Depth 1750m (SWC)

Phytoclast Content - Virtually nil
Phytoclast Condition - Only one particle measurable. Also
suspect mud additive lignosulphonate
present

Measurements Completed (1):-

0.92





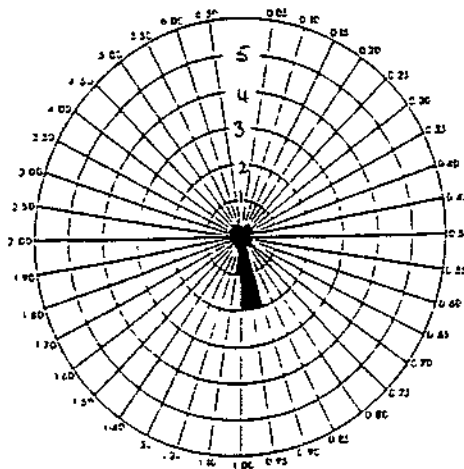
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(29) Depth 1800m

Phytoclast Content - Very low
Phytoclast Condition - Generally small. Only a very few
respectable pieces

Measurements Completed (5):-

0.97, 1.04, 0.98, 0.92,
0.94.

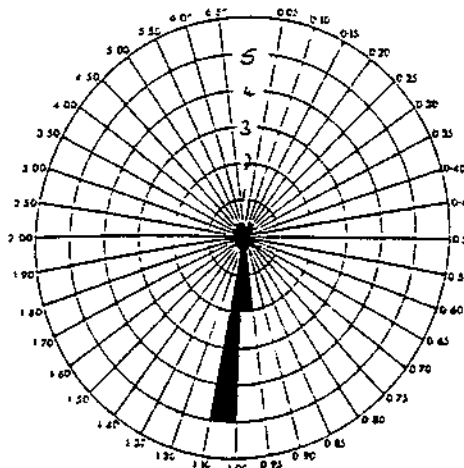


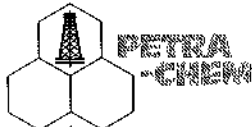
(30) Depth 1885m

Phytoclast Content - Very low
Phytoclast Condition - Very small particles

Measurements Completed (7):-

0.99, 1.05, 1.02, 1.06,
0.97, 1.10, 1.07.



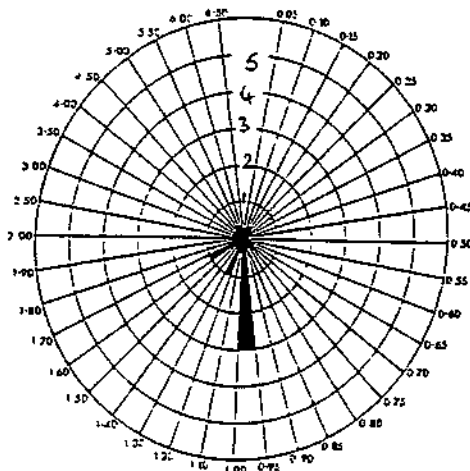


(31) Depth 1891m

Phytoclast Content - Extremely low
Phytoclast Condition - Only a very few particles measurable

Measurements Completed (5):-

0.97, 0.96, 0.98, 1.23,
1.62.

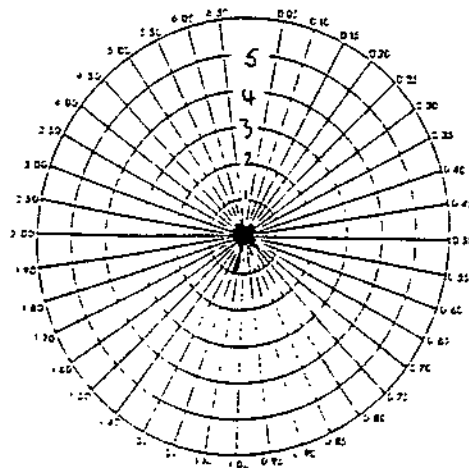


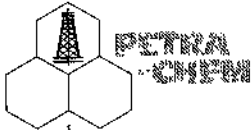
(32) Depth 1900m

Phytoclast Content - Moderate
Phytoclast Condition - Some respectable wisps and particles

Measurements Completed (20):-

1.11.





(33) Depth 1910m (SWC)

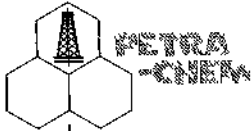
Phytoclast Content - Virtually nil
Phytoclast Condition - Nothing measurable

No Determination Possible

(34) Depth 1917.5m (SWC)

Phytoclast Content - Virtually nil
Phytoclast Condition - Nothing measurable

No Determination Possible

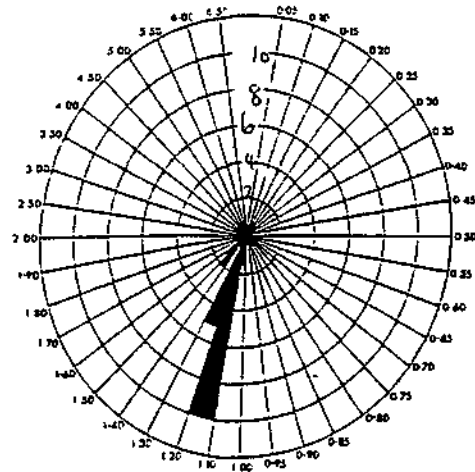


(35) Depth 1927m (SWC)

Phytoclast Content - Low to moderate
Phytoclast Condition - Mainly small, but a few reasonable wisps observed

Measurements Completed (19):-

1.20, 1.20, 1.15, 1.18,
1.13, 1.13, 1.18, 1.15,
1.04, 1.28, 1.13, 1.18,
1.15, 1.20, 1.24, 1.19,
1.55, 1.48, 1.49.

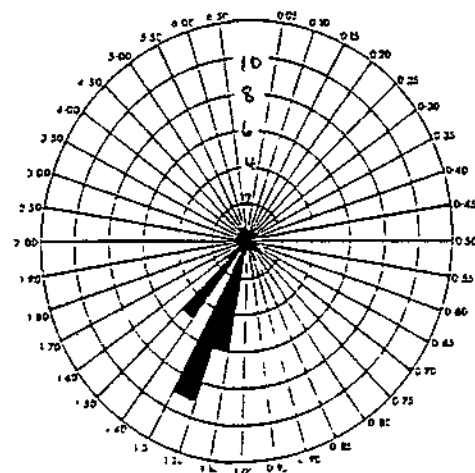


(36) Depth 1940m (SWC)

Phytoclast Content - Low
Phytoclast Condition - Generally rather small wisps and particles

Measurements Completed (21):-

1.23, 1.26, 1.19, 1.13,
1.24, 1.20, 1.18, 1.15,
1.16, 1.13, 1.24, 1.20,
1.26, 1.22, 1.26, 1.46,
1.42, 1.46, 1.42, 1.55,
1.49.



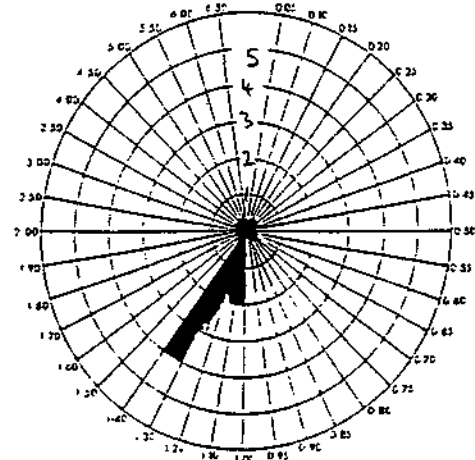


(37) Depth 1950m

Phytoclast Content - Very low
Phytoclast Condition - Bitumen present with only small amounts of vitrinite and inertinite

Measurements Completed (11):-

1.23, 1.30, 1.27, 1.26,
1.17, 1.15, 1.30, 1.33,
1.35, 1.03, 1.02.

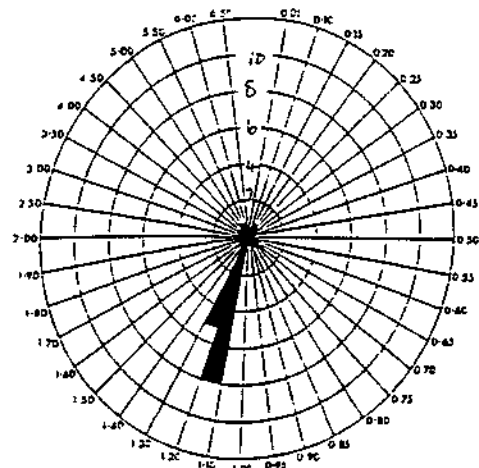


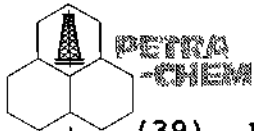
(38) Depth 1955m (SWC)

Phytoclast Content - Low to moderate
Phytoclast Condition - Mainly small, but a few reasonable wisps observed

Measurements Completed (13):-

1.15, 1.18, 1.19, 1.24,
1.28, 1.20, 1.24, 1.15,
1.19, 1.13, 1.18, 1.15,
1.21.





(39) Depth 1975m (SWC)

Phytoclast Content - Virtually nil
Phytoclast Condition - Nothing measurable

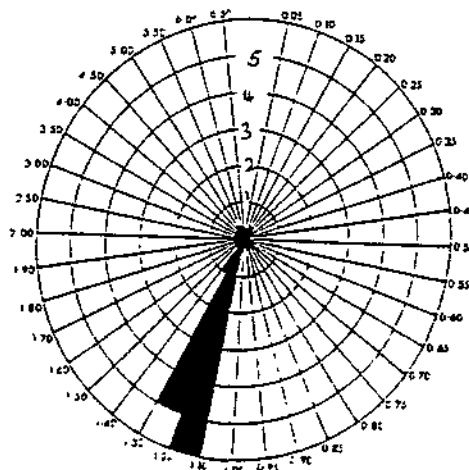
No Determination Possible

(40) Depth 1990m

Phytoclast Content - Very low
Phytoclast Condition - Generally small

Measurements Completed (12):-

1.20, 1.18, 1.13, 1.27,
1.16, 1.38, 1.23, 1.25,
1.12, 1.20, 1.14, 1.15.



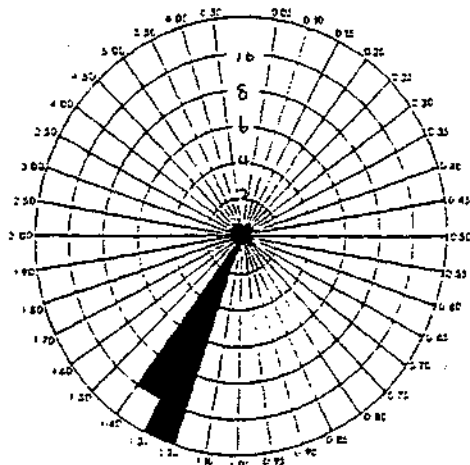


(41) Depth 2052m (SWC)

Phytoclast Content - Moderate to high
Phytoclast Condition - Reasonable wisps and stringers

Measurements Completed (22):-

1.33, 1.24, 1.23, 1.36,
1.24, 1.30, 1.28, 1.28,
1.38, 1.23, 1.32, 1.23,
1.27, 1.33, 1.34, 1.34,
1.33, 1.27, 1.27, 1.32,
1.28, 1.28.

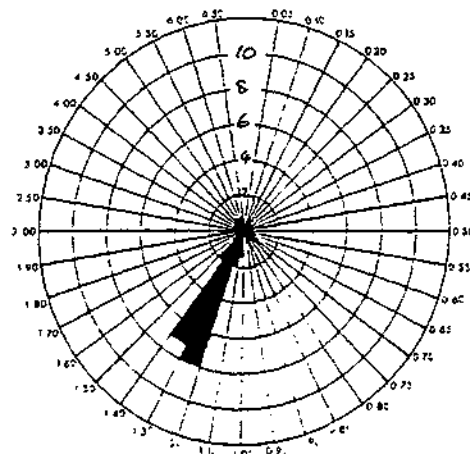


(42) Depth 2100m (MD)

Phytoclast Content - Moderate to high
Phytoclast Condition - Reasonable wisps and stringers plus
plentiful inertinite

Measurements Completed (20):-

1.12, 1.26, 1.03, 1.41,
1.34, 1.15, 1.28, 1.32,
1.34, 1.23, 1.29, 1.36,
1.29, 1.26, 1.41, 1.21,
1.30, 1.36, 1.26, 1.31.



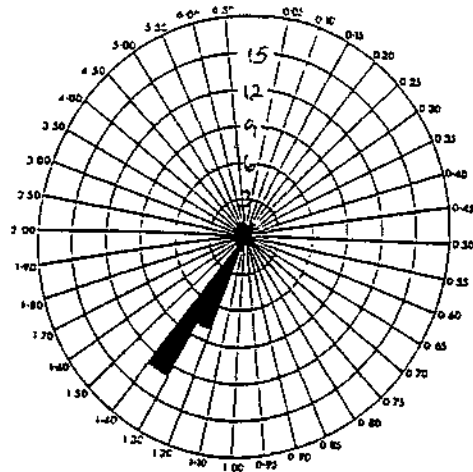


(43) Depth 2147m (SWC)

Phytoclast Content - Moderate
Phytoclast Condition - Some reasonable wisps

Measurements Completed (21):-

1.36, 1.27, 1.27, 1.33,
1.24, 1.36, 1.33, 1.28,
1.34, 1.24, 1.27, 1.34,
1.34, 1.29, 1.33, 1.31,
1.28, 1.34, 1.30, 1.33,
1.33.

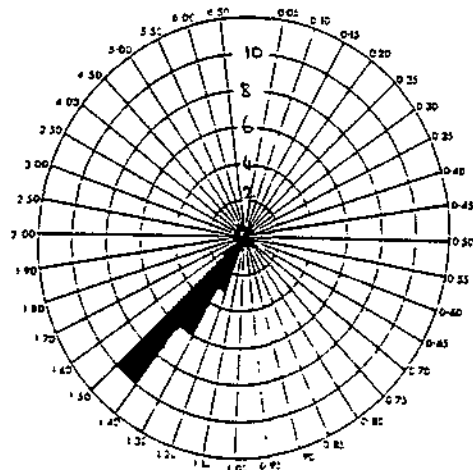


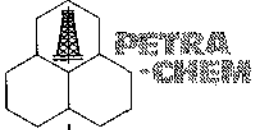
(44) Depth 2200m

Phytoclast Content - Moderate
Phytoclast Condition - Small gnarled vitrinite associated
with abundant inertinite

Measurements Completed (20):-

1.44, 1.39, 1.37, 1.41,
1.28, 1.23, 1.49, 1.51,
1.39, 1.48, 1.47, 1.44,
1.33, 1.27, 1.48, 1.42,
1.38, 1.42, 1.35, 1.41.



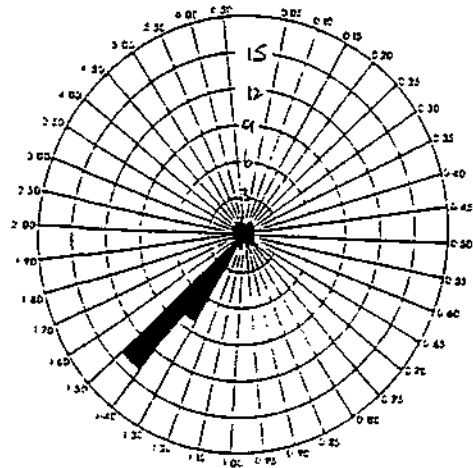


(45) Depth 2250m (SWC)

Phytoclast Content - Moderate to high
Phytoclast Condition - Generally small often gnarled particles

Measurements Completed (22):-

1.46, 1.43, 1.37, 1.33,
1.40, 1.43, 1.46, 1.40,
1.40, 1.42, 1.39, 1.36,
1.34, 1.44, 1.40, 1.38,
1.32, 1.44, 1.46, 1.40,
1.47, 1.39.

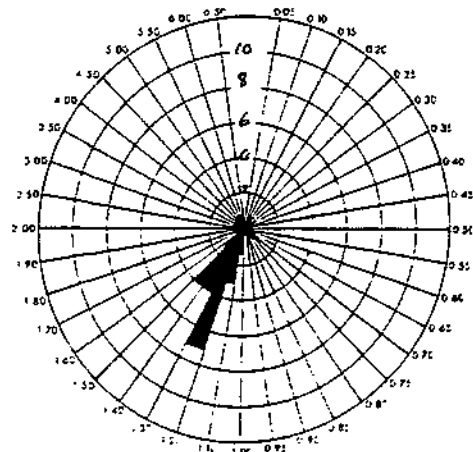


(46) Depth 2300m

Phytoclast Content - Moderate
Phytoclast Condition - Rather small, but some reasonable wisps present

Measurements Completed (20):-

1.30, 1.42, 1.40, 1.50,
1.30, 1.29, 1.13, 1.28,
1.17, 1.28, 1.20, 1.36,
1.28, 1.49, 1.48, 1.07,
1.17, 1.28, 1.39, 1.21.



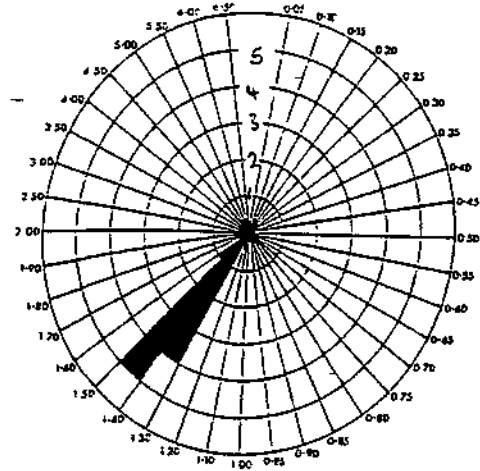


(47) Depth 2350m (SWC)

Phytoclast Content - Very low
Phytoclast Condition - Gnarled and small

Measurements Completed (10):-

1.36, 1.38, 1.42, 1.43,
1.44, 1.46, 1.32, 1.47,
1.51, 1.32.

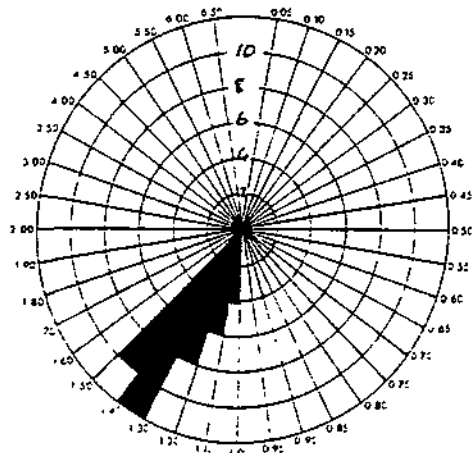


(48) Depth 2400m (DMD)

Phytoclast Content - Moderate to high
Phytoclast Condition - Rather small particles

Measurements Completed (20):-

1.31, 1.39, 1.28, 1.21,
1.22, 1.44, 1.22, 1.40,
1.44, 1.16, 1.31, 1.31,
1.12, 1.34, 1.37, 1.47,
1.01, 1.40, 1.17, 1.05.



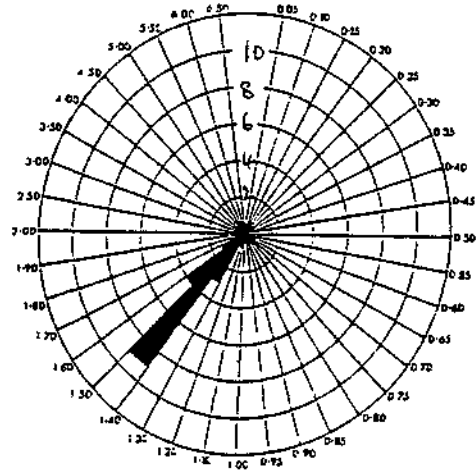


(49) Depth 2448m (SWC)

Phytoclast Content - Low to moderate
Phytoclast Condition - Generally small

Measurements Completed (17):-

1.47, 1.56, 1.51, 1.44,
1.39, 1.44, 1.53, 1.48,
1.38, 1.49, 1.52, 1.61,
1.32, 1.49, 1.47, 1.44,
1.46.

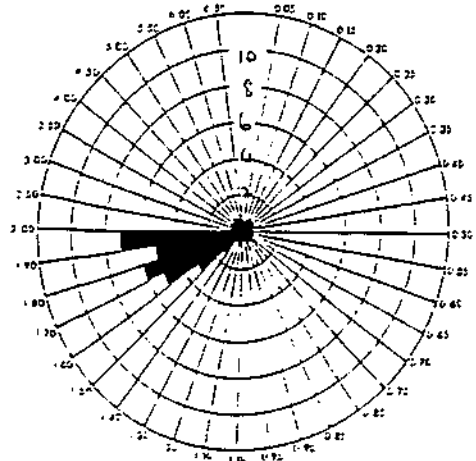


(50) Depth 2500m

Phytoclast Content - Moderate to high
Phytoclast Condition - Some good wisps and stringers. A relatively wide spread of values

Measurements Completed (27):-

1.95, 1.98, 1.73, 1.56,
1.43, 1.98, 1.95, 1.62,
1.62, 1.92, 1.73, 1.73,
1.65, 1.54, 1.95, 1.80,
1.75, 1.67, 1.89, 1.83,
1.77, 1.86, 1.59, 1.95,
1.73, 1.89, 1.62.



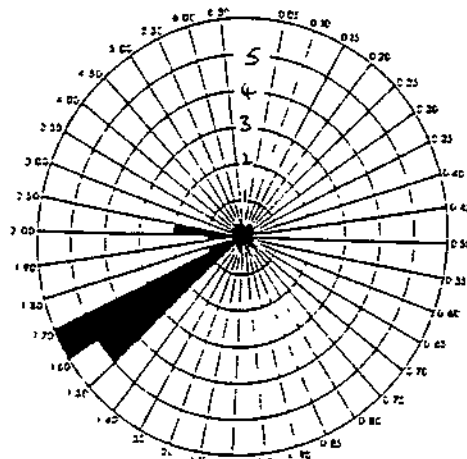


(51) Depth 2548m (SWC)

Phytoclast Content - Moderate
Phytoclast Condition - Some good wisps

Measurements Completed (15):-

1.72, 1.59, 1.69, 1.65,
1.69, 1.59, 1.56, 1.62,
1.69, 1.56, 1.68, 1.52,
2.17, 1.98, 2.07.

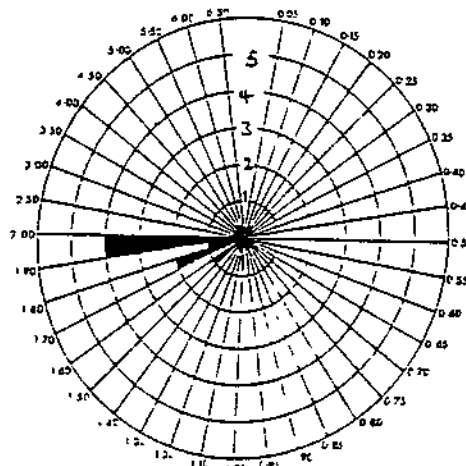


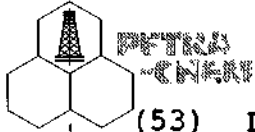
(52) Depth 2599m

Phytoclast Content - Low
Phytoclast Condition - Small, often gnarled particles

Measurements Completed (8):-

1.91, 1.59, 1.75, 1.92,
1.70, 1.91, 1.85, 1.95.





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(53) Depth 2655m (SWC)

Phytoclast Content - Virtually nil
Phytoclast Condition - Nothing measurable

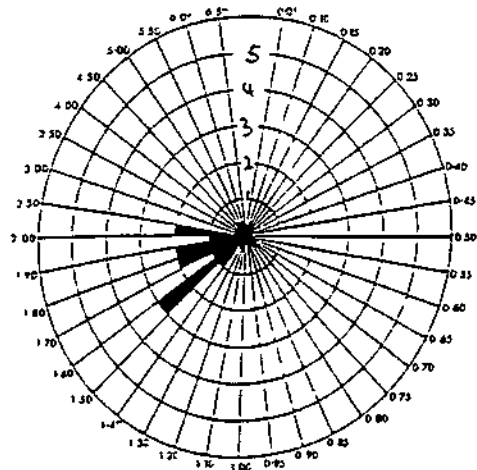
No Determination Possible

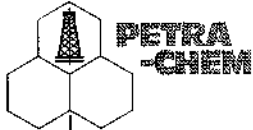
(54) Depth 2700m

Phytoclast Content - Low to moderate
Phytoclast Condition - Some good wisps observed but a fairly wide spread of values

Measurements Completed (12):-

1.80, 1.48, 1.51, 1.80,
1.56, 1.67, 1.73, 1.59,
1.75, 1.95, 2.01, 2.09.



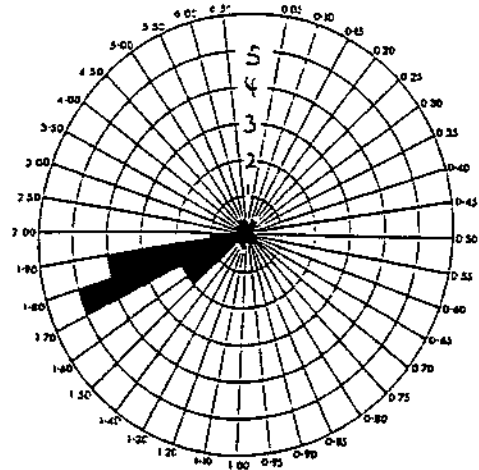


(55) Depth 2750m (SWC)

Phytoclast Content - Low to moderate
Phytoclast Condition - Some good wisps present

Measurements Completed (14):-

1.89, 1.69, 1.73, 1.79,
1.78, 1.88, 1.95, 1.88,
1.66, 1.78, 1.54, 1.70,
1.83, 1.59.



(56) Depth 2800m

Phytoclast Content - Virtually nil
Phytoclast Condition - Nothing measurable

No Determination Possible



(57) Depth 2850m (SWC)

Phytoclast Contents - Virtually nil
Phytoclast Condition - Nothing measurable

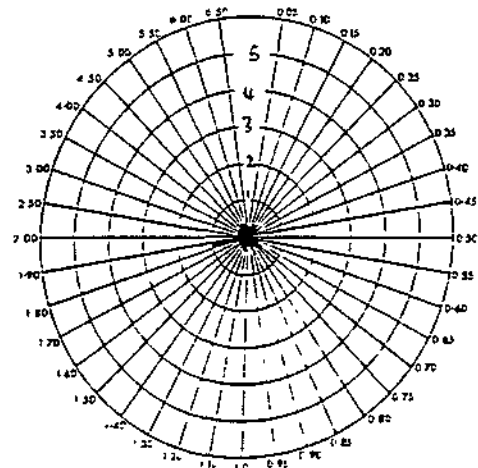
No Determination Possible

(58) Depth 2900m

Phytoclast Content - Extremely low
Phytoclast Condition - Mainly inertinite present. Only one piece of vitrinite seen

Measurements Completed (1):-

1.87



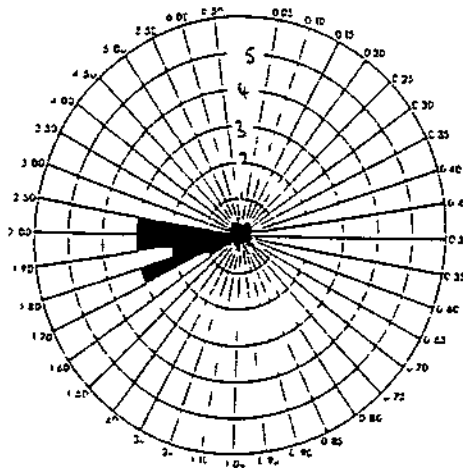


(59) Depth 2953m (SWC)

Phytoclast Content - Low
Phytoclast Condition - Generally small particles

Measurements Completed (12):-

2.07, 1.96, 2.08, 1.88,
1.79, 1.92, 1.88, 1.95,
2.07, 1.77, 1.69, 1.72.



(60) Depth 3000m

Phytoclast Content - Virtually nil
Phytoclast Condition - Nothing measurable

No Determination Possible

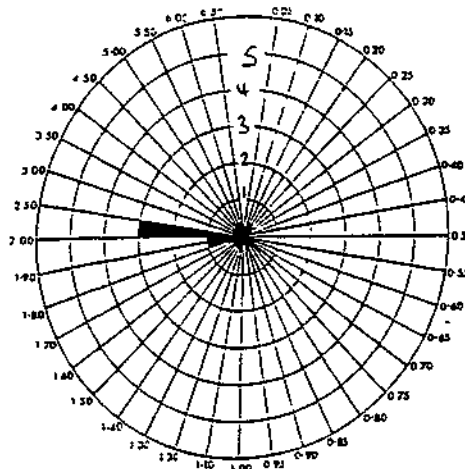


(61) Depth 3051m (SWC)

Phytoclast Content - Low
Phytoclast Condition - Only a very few reasonable particles seen

Measurements Completed (5):-

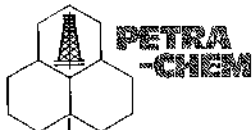
2.13, 2.01, 1.88, 1.92,
2.05.



(62) Depth 3100m

Phytoclast Content - Virtually nil
Phytoclast Condition - Nothing measurable

No Determination Possible

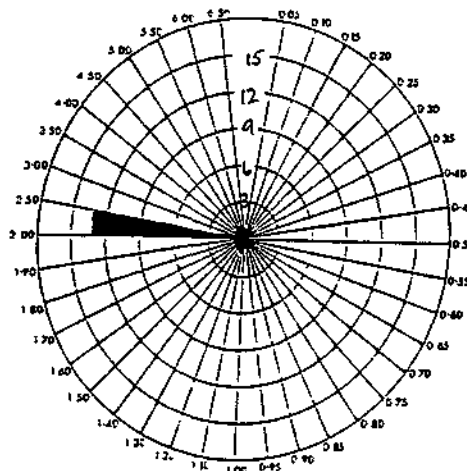


(63) Depth 3202m (SWC)

Phytoclast Content - Low
Phytoclast Condition - Only small particles of vitrinite present

Measurements Completed (13):-

2.07, 2.15, 2.17, 2.05,
2.11, 2.49, 2.22, 2.39,
2.45, 2.03, 2.30, 2.45,
2.14.

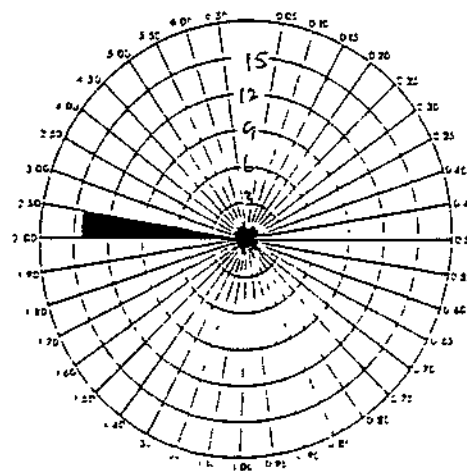


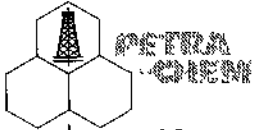
(64) Depth 3256m (SWC)

Phytoclast Content - Low
Phytoclast Condition - Particles generally small

Measurements Completed (14):-

2.03, 2.08, 2.08, 2.06,
2.06, 2.01, 2.03, 2.06,
2.11, 2.11, 2.26, 2.26,
2.36, 2.11.



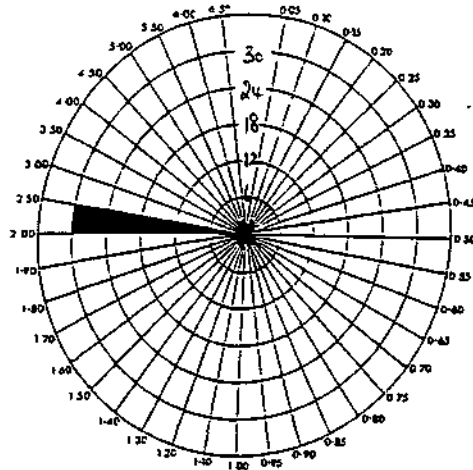


(65) Depth 3301m

Phytoclast Content - Moderate to high
Phytoclast Condition - Respectable wisps present

Measurements Completed (30):-

2.30, 2.15, 2.07, 2.20,
2.17, 2.28, 2.17, 2.05,
2.20, 2.17, 2.28, 2.07,
2.05, 2.11, 2.05, 2.13,
2.20, 2.05, 2.17, 2.28,
2.07, 2.15, 2.17, 2.20,
2.30, 2.20, 2.07, 2.20,
2.30, 2.15.

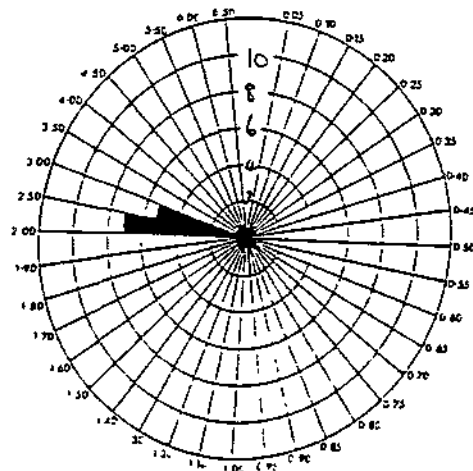


(66) Depth 3385m (SWC)

Phytoclast Content - Low
Phytoclast Condition - Generally small particles

Measurements Completed (12):-

2.41, 2.50, 2.33, 2.70,
2.37, 2.54, 2.09, 2.13,
2.66, 2.25, 2.58, 2.17.



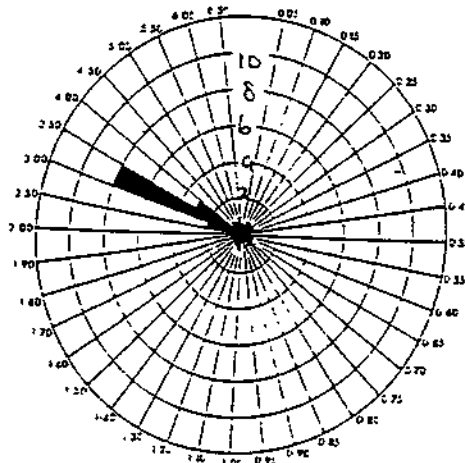


(67) Depth 3416m

Phytoclast Content - Low
Phytoclast Condition - Small particles of high rank

Measurements Completed (13):-

2.98, 2.90, 3.09, 3.49,
3.21, 3.54, 3.32, 3.56,
3.30, 3.54, 3.19, 3.34,
3.15.



(68) Depth 3444m (SWC)

Phytoclast Content - Extremely low
Phytoclast Condition - Particles too small to measure
reliably

No Determination Possible



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-CHEM

(69) Depth 3500m (SWC)

Phytoclast Content - Virtually nil
Phytoclast Condition - Too small to measure reliably

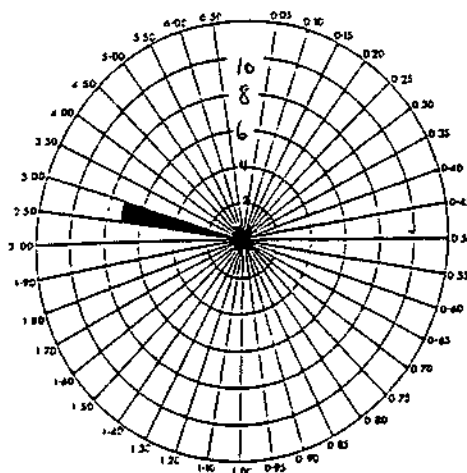
No Determination Possible.

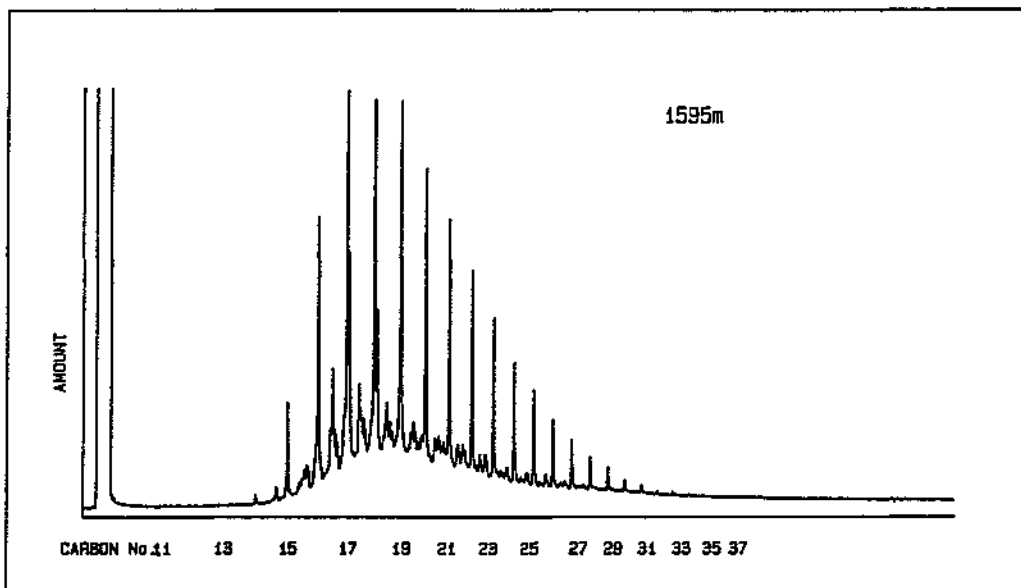
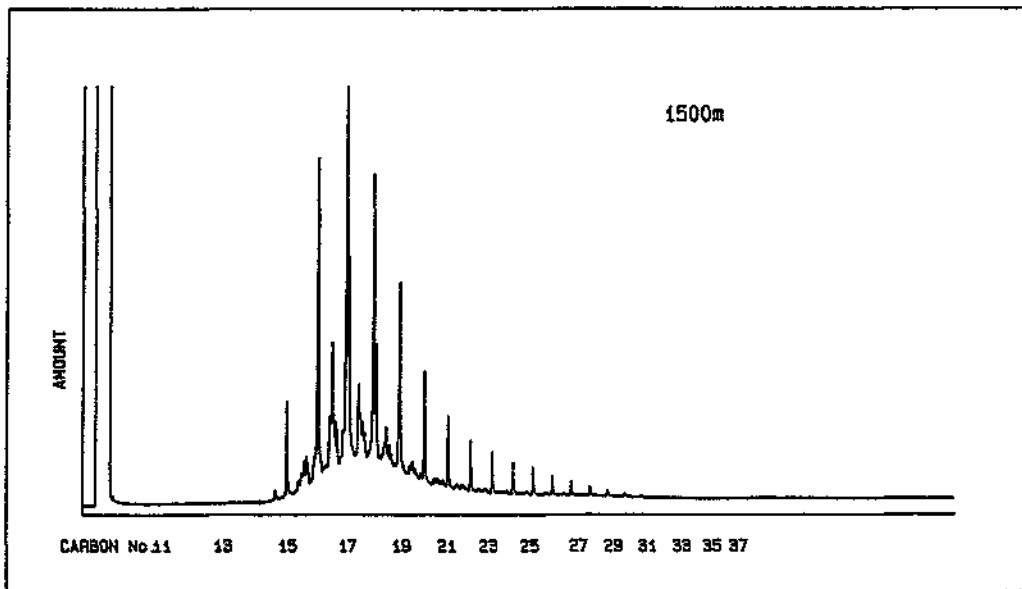
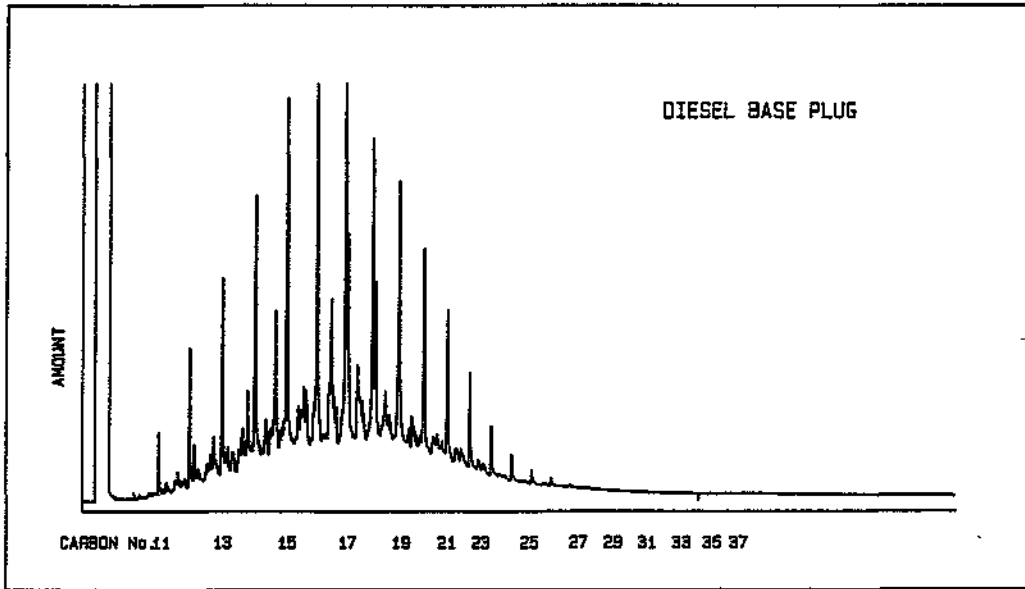
(70) Depth 3550m

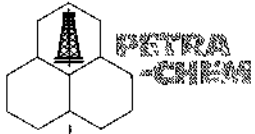
Phytoclast Content - Very low
Phytoclast Condition - Very small particles

Measurements Completed (7):-

2.78, 2.66, 2.70, 2.82,
2.90, 2.66, 2.58







APPENDIX B

TECHNIQUES



APPENDIX OF TECHNIQUES

1. Headspace Gas Analysis

Before the canned cuttings samples were opened for washing, they were pierced with a gas syringe and a sample of the headspace gas removed. The headspace gases were examined using capillary GC to separate them out on the basis of boiling point and obtain a quantitative assessment of the amount of each individual gas present. The results are tabulated in Table 1A. After headspace gas analysis, each of the canned cuttings samples were washed and air dried at 40°C, before being weighed. The weights of the material present in each can are recorded in Table 1B.

2. Total Organic Carbon Measurements

A sample of the washed and dried material was ground to a fine powder. After drying, the fine powder was sieved through a 150 micron sieve to homogenise the sample, before weighing into a crucible and treatment with concentrated hydrochloric acid. The decarbonated sample was then combusted in a stream of oxygen in a Carlo Erba Elemental Analyser. The evolved carbon dioxide was measured, compared with the amount evolved by reference standards and converted to a weight percent Total Organic Carbon (TOC) content value. The organic carbon values obtained from sediments examined from this study are listed in Table 2.

Total Organic Carbon Measurements provide a direct measure of the total amount of organic carbon present in rock sample. Shales with an organic content value below 0.50%wt. are not generally considered prospective sources for the generation of commercial quantities of oil and/or gas. Bearing this in mind, the definition of cut-off values used by Petra-Chem Ltd are as listed overleaf:-



Poor = < 0.50%wt

Moderate = 0.50 - 1.50%wt

Good = > 1.50%wt

3. Hydrocarbon Potential by Pyrolysis.

A further sample of washed, dried, and finely ground material was weighed into a pyrolysis boat before being heated to 80°C and held isothermally. The temperature was then ramped to 325°C and again held isothermally, before final ramping to 550°C. The products from pyrolysis were swept in a carrier gas stream to a detector for measurement. The amounts evolved were compared with those evolved from calibrated standards. Pyrolysis yields obtained from the sediments examined in this study are listed in Table 3A.

Pyrolysis is the process whereby a sample of rock is heated under controlled conditions for a certain time interval. Organic compounds are traditionally believed to be released in three stages: (a) at low temperatures (80°C), which are equivalent to the gaseous hydrocarbons present in the sediment up to a carbon number of about C₈, (b) at moderate temperatures (325°C), which are equivalent to volatile, indigenous and/or migrated hydrocarbons and are expressed as S₁ (ppm) and (c) those released at high temperatures (550°C), which are equivalent to the volatile hydrocarbons produced from thermal cracking of the kerogen and are expressed as S₂ (ppm). The cut-off values used by Petra-Chem are as follows:-



Poor = <2000ppm (2.0mg./g or kg./tonne)

Moderate = > 2000ppm and < 5000ppm

Good = > 5000ppm (5.0mg./g or kg./tonne)

Furthermore, the amount of carbon dioxide released from kerogen during pyrolysis was measured providing the S3 yield shown in Table 3A.

The Hydrogen Index values shown in Table 3B show the relationship between the S2 yield and the TOC content of a sediment. Where the hydrogen index is high (>300) the sediment is likely to be oil prone and where it is low (<150) it is likely to be gas prone or a non-source. The Production Index, also shown on Table 3B has been defined as a measure of the proportion of the total amounts of hydrocarbons, which are available for accumulation. It is equivalent to the proportion of free hydrocarbons (S1) with respect to the total amount of hydrocarbons produced by the sediment (S1 + S2). The Oxygen Index shown in Table 3B relates to the amount of carbon dioxide released from kerogen during pyrolysis, but has been shown from the literature to be unreliable.

In many instances, a certain proportion of the S1 hydrocarbons are not released at the moderate temperature of 325°C, since they comprise long chain molecules such as asphaltenes. Thus if the area % of the S1 hydrocarbons exceeds 10% of the area % of the S2 hydrocarbons, then the sample may be solvent extracted and re-evaluated for its true S2 yield. The results of this evaluation are depicted in the "Extracted S2 Yield" column of Table 3A. This action was particularly necessary in the section between 1700m to 1900m, where diesel fuel had been added to the drilling fluid.



4. Vitrinite Reflectance Measurements (Whole Rock and Kerogen Isolate Technique).

Vitrinite Reflectance is a reliable technique for defining the thermal maturity of sedimentary rocks. Vitrinite is the coal maceral most often used for thermal maturity measurements, because its optical properties alter more uniformly during catagenesis than do the other maturation indices. These measurements can be used to derive zones of petroleum generation and destruction. Two methods of sample preparation have been used in this study, the isolation method being used especially in the intervals where relatively little black wood was evident from visual analysis.

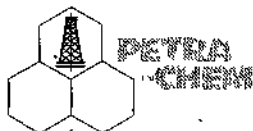
(a) Whole Rock

A sample of washed and dried material was crushed to a coarse rock flour in a pestle and mortar and mounted in epoxy resin. The surface of the hardened epoxy resin block was highly polished using carborundum paper and aluminium oxide powder, before being examined by reflected light microscopy using an oil immersion objective. Up to twenty selected vitrinite particles were measured and the value of each individual measurement was recorded.

(b) Isolated Kerogen

A sample of washed and dried material was digested in both hydrochloric and hydrofluoric acids to dissolve away mineral matter. The resultant material was then mounted in epoxy resin as described above and the epoxy resin block was highly polished. Up to fifty selected vitrinite particles were then measured and recorded (Table 4). Vitrinite reflectance measurements can be used to derive zones of petroleum generation and destruction.

The various values produced are recorded in Table 4 as



averaged values, with the figures in parentheses representing the number of measurements averaged together. The emboldened figures shown in this table are those thought representative of the true maturity level of the sediments at their respective present day depths. The threshold values for the zones of hydrocarbon generation used by Petra-Chem Limited are listed below:-

Liquid Hydrocarbon Threshold	Ro = 0.55%
Gaseous Hydrocarbon Threshold	Ro = 0.70%
Maximum Oil Production	Ro = 0.80%
Liquid Hydrocarbon Destruction	Ro = 1.30%

Where greater than ten autochthonous reflectance values are available over a minimum of a 2500ft. depth range, a least squares fit correlation of vitrinite reflectance values versus depth is completed from which the relative position of the "oil window" is predicted. The linear regression/least squares fit correlation is completed using a computer program to examine the relationship.

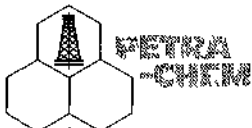
$$y = m \log x + c$$

The degree of fit between the values y and $\log x$ is expressed by the equation:

$$r^2 = \frac{(\sum x y)^2}{\sum x^2 \cdot \sum y^2}$$

Where r^2 = least squares fit, or estimation of variance and the degree of correlation between the data points is expressed by the equation:

$$r = \frac{1}{N} \left\langle \left(\frac{x - \bar{x}}{x} \right) \left(\frac{y - \bar{y}}{y} \right) \right\rangle$$



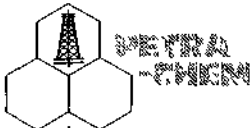
Where \bar{x} and \bar{y} are respectively the mean of all the x values and mean of all the y values and s_x and s_y are respectively the standard deviation of all the x values and all the y values. When $r = 1$, there is a perfect functional relationship between x and y and when $r = 0$, there is no relationship between x and y and there is no correlation.

5. Visual Kerogen Description/Spore Colourations

A sample of washed and dried material was digested in both hydrochloric and hydrofluoric acids to dissolve away mineral matter. The remaining debris was mounted on a glass slide, with cover slip and then examined in transmitted light. A description of the plant material present was completed in white light, including an assessment of the colour of any spores present. These spores were then examined in UV light, when another assessment of their colour was made.

Visual Kerogen Description provides diagnostic information about the type of organic matter present in sediments. By definition, kerogen is the insoluble organic matter found in sedimentary rocks. When this insoluble organic matter is examined under a high-magnification microscope, after the mineral content of the rock has been removed using acids, recognisable relics of fossil leaves, stems, woody tissues, spores, pollen and amorphous material etc. can be observed. This assortment of plant debris is categorised into two principle groups: Structured Kerogen and Amorphous Kerogen. The descriptions of the various kerogens studied for this project are listed in Table 5.

Divisions within the Structured Kerogen group include cuticle, brown and black wood. The various plant types described above all change colour at different rates with increase in maturity. For this reason, Petra-Chem adopts



the principle of observing colour changes from spores only and ideally, from spores of similar taxa throughout the stratigraphic interval being examined. The colour scale used in Petra-Chem is that devised by Dr. D.J. Batten of Aberdeen University and formerly of BP, Sunbury Research Centre. It is a scale ranging from 1 to 7, with the following colours corresponding to the various points on the scale:

1. Colourless, Pale Yellow, Yellowish Green (Unaltered)
2. Yellow
3. Light Brownish Yellow, Yellowish Orange
4. Light - Medium Brown
5. Dark Brown
6. Brown - Black
7. Black

The colour rating taken to depict the onset of liquid hydrocarbon generation is 3/4 (ref. Batten, D.J., 5th Palynology Conference, Cambridge, 1980). The colour ratings for the kerogens described in this study are listed in Table 5.

The visual examination of kerogens is subjective rather than quantitative, but it is helpful in some instances to apply numerical ranges for the terms quoted in Table 5. These ranges must only be regarded as a guide to richness and for this reason, we consistently refer to terms rather than values in the body of the report.



The approximate ranges that can be applied are:-

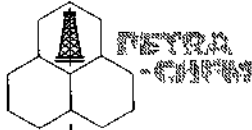
Traces	0-5%
Lean	5-20%
Common	20-60%
Abundant	60-100%

6. Solvent Extract Examination

A Sample of washed, dried, finely ground and weighed material was extracted using dichloromethane. The extract was then separated on activated silica to provide a saturate alkane fraction for examination by high resolution capillary gas chromatography. The results of solvent extract examinations are listed in Table 6.

The total soluble extract (TSE) %wt. provides a means of assessing the presence of reservoired, or migrated hydrocarbons. Where the TSE %wt. is high relative to the organic carbon content of the sediment extracted, this suggests the presence of migrated hydrocarbons. The saturate alkane content (SAC) % TSE is a measure of the amount of fully saturated hydrocarbons present in the TSE and includes straight chain n-alkanes, branched alkanes (isoprenoids) and naphthenic compounds. In circumstances where oil shows are present, asphaltenes will be removed prior to SAC assessment using Standard IP method No.143/84. A high asphaltene content may suggest the oil has been subjected to biodegradation or reservoir transformation processes.

The distribution of n-alkanes assessed by high resolution capillary gas chromatography can provide a clue to the plant material from which the extract was derived. A high pristane to phytane ratio usually denotes the presence of land plant derived extract, whereas a pristane/phytane



ratio of close to unity may suggest a marine source. The relative abundance of the odd numbered alkanes relative to the even numbered alkanes, expressed as a Carbon Preference Index (CPI) provides an estimate of the sediment maturity. Theoretically, the CPI value approaches unity, as the sediment reaches the top of the oil window.

7. Lithological Descriptions

A detailed description of each sample is given in Table 7 depicting the various lithologies present. A visual estimation of the proportion of cavings present is also provided.