société nationale
elf aquitaine (production)

U - 613

1W

EP/S/EXP/Lab.Pau n° 90/34RP.GO

Pau, June 1990

WELL 25/3-1
(Norway)

Organic screening analyses
and optical study

EP/S/EXP/Lab.Pau n° 90/34RP.GO

Authors : K. LE TRAN
G. NICOLAS

adresse postale : ☐ tour Elf - Cedex 45 92078 Paris La Défense
☐ Pau - 64018 Pau Cedex
☐ Lacq - bp 22 Lacq 64170 Artix
☐ Boussens - Boussens 31360 Saint Martory

téléphone : - 33 - (1) 47 44 45 46
- 33 - 59 83 40 00
- 33 - 59 92 22 22
- 33 - 61 97 80 00

télex : elfa 615 400 f
petra 560 804 f
petra 560 053 f
snea 530 385 f

Imp. 7332 D SNEA(P) - RGM 953 006 004

TABLES

LIST OF TABLES

TABLE B1

SYNTHETIC CHART OF OPTICAL RESULTS ON MATURATION

DEPTH (m)	VRo (%)	Eq.VRo (%)	T.A.I.
2013			2.5
2282.20			2.5
2324			2.5
2498			2.5
2875			2.5
2900	0.50		
2985		0.60	
3027		0.55/0.60	
3103			2.5
K1(3117.40)	0.55/0.60		$2.5/2.5^{+}$
	3185		
3205	0.65		
3232	0.65/0.70		
3342/45	0.75	0.70	
3430			3
3472.5/75	0.70	0.70/0.75	
3510			3.5^{-}
3550/52.5	0.70	0.90	
3640			3.5^{-}
3680			3.5
3750/52.5	0.75	0.75 or 1.00	
K2 (3873.7)	0.80		3.5
3892.5			4^{-}
3900			4^{-}
3905/07.5	0.90		

LEGENDS OF TABLES AND FIGURES OF ORGANIC INVENTORY ANALYSES : ABBREVIATIONS, UNITS AND CUT OFFS

SAMPLE TYPE :

[ND=unwashed cuttings; DE=cuttings washed on site. The cuttings are washed or washed anew in the laboratory]

[CA=core; CL=sidewall core; TE=outcrop; BO=mud; XX=other or undetermined]

IR : Insoluble residue after HCl attack (% weight of rock)

LECO ANALYSIS

TOC : Total organic carbon (% weight of rock)

IOC : Insoluble organic carbon in chloroform (% weight of rock)

OC : Organic carbon (total or insoluble)

X-RAY DIFF. : ALBite ; ORThoclase ; ANHydrite (or chlorite/kaolinite) ; QuaRtZ ; CALcite ; DOLomite ; SIDerite ; uNDosed (% weight of rock)

ROCK EVAL ANALYSIS

Carried out on : ..... [generally not performed if OC< .3%]

RT : Total rock

RI_RT : Insoluble residue after HCl attack

RE : Rock extracted with chloroform

RI_RE : Rock extracted with chloroform, and after HCl attack

Measured parameters : .... [# : result not given because meaningless; <S : lower than the detection threshold]

Tmax : Temperature of S2 peak (°C) ..... [meaningless if S2 small]

S1 : Free hydrocarbons in the rock (mgHC/g of rock) ..... [meaningless if the analysis is performed on the extracted rock]

S2 : Hydrocarbons yielded by pyrolysis (mgHC/g of rock)

S3 : CO2 yielded by pyrolysis (mg CO2/g of rock)

Calculated parameters :

PI : Production Index= S1/(S1+S2) ..... [# : meaningless if S1 and S2 < .2]

HI : Hydrogen Index = (S2/OC)x100 (mg HC/g OC)

OI : Oxygen Index = (S3/OC)x100 (mg CO2/g OC) .. [to be used with caution for analyses carried out on RT or RE if OC < 2%; IO>170 : mineral contribution to S3 peak]

IATROSCAN ANALYSIS

Fast and non preparative analysis of the chloroformic extract (quantity and composition)

EOM: Extractable organic matter with chloroform (% weight of rock) ..... [<S if lower than .01%]

Normalized composition of the extract (% EOM) : .... [not performed if EOM < .03%]

SAT: Saturated hydrocarbons

ARO: Aromatic hydrocarbons

POL: Polar compounds (Resins+Asphaltenes)

HC: SAT+ARO (mg HC/g of rock)

Q1: Contaminations or cavings, affecting the Rock Eval and TOC analyses ..... [I=high; M=medium; F=low;]

Q2: Contaminations or cavings, affecting the organic extract [N=null or not detected]

TABLE B2 25/3-1

DESCRIPTION OF ANALYSED SAMPLES AND ORGANIC CARBON CONTENT

LAB. REF.	SAMPLE TYPE	DEPTHS Metres		IR %	TOC %	IOC %	LITHOLOGY
B24259	CL	2960.00		65.0	.66		SHALE GREY, CALCAREOUS
B24260	CL	2980.00		77.7	.51		SHALE GREY, CALCAREOUS
B24261	CL	3020.00		92.8	8.64		SHALE DARK GREY, SILTY
B24262	CL	3025.00		92.8	6.85		SHALE DARK GREY, SILTY
B24263	CL	3033.80		93.1	7.92		SHALE DARK GREY, SILTY
B24264	CL	3041.00		92.2	6.86		SHALE DARK GREY, SILTY
B24492	ND	3050.00	3060.00	88.1	7.23		SHALE DARK GREY, SILTY
B24265	CL	3066.80		88.5	8.81		SHALE DARK GREY, SILTY
B24493	ND	3075.00	3080.00	70.8	4.67		SHALE DARK GREY, SILTY, CALCAREOUS
B24266	CL	3087.00		88.2	2.06		SHALE DARK GREY, SILTY
B24494	ND	3090.00	3100.00	61.0	3.32		SHALE DARK GREY, SILTY, CALCAREOUS
B24267	CL	3096.00		94.6	4.76		SHALE DARK GREY, SILTY, SL. MICROMICACEOUS
B24256	CA01	3114.90		93.0	6.93		SHALE DARK GREY, SILTY, MICACEOUS
B24257	CA01	3117.51		99.5	75.23		COAL
B24495	ND	3185.00		97.9	59.99		COAL
B24496	ND	3205.00	3210.00	97.9	63.28		COAL
B24497	ND	3220.01		96.4	41.94		COAL, INTERBEDDED SILTY SHALE AND SANDSTONE
B24498	ND	3232.51		98.4	66.45		COAL
B24499	ND	3240.00		97.9	56.83		COAL
B24500	ND	3242.50		93.9	32.37		COAL, INTERBEDDED SILTY SHALE AND SANDSTONE
B24501	ND	3245.00	3250.00	95.2	27.57		COAL, INTERBEDDED SILTY SHALE AND SANDSTONE
B24502	ND	3277.50	3280.00	84.0	3.89		SHALE DARK GREY, INTERBEDDED SANDSTONE
B24503	ND	3290.00		86.7	12.06		SHALE DARK GREY, INTERBEDDED SANDSTONE
B24504	ND	3297.50	3300.00	83.2	4.51		SHALE DARK GREY, INTERBEDDED SANDSTONE
B24505	ND	3305.00	3310.00	93.0	9.49		SHALE DARK GREY, INTERBEDDED SANDSTONE
B24937	ND	3342.50	3347.50	72.1	2.55		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24938	ND	3375.00	3380.00	84.8	2.35		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24939	ND	3397.50	3400.00	79.9	1.10		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24940	ND	3422.50	3425.00	87.0	1.10		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24941	ND	3447.50	3450.00	81.4	1.55		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24942	ND	3472.50	3475.00	83.7	3.43		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24943	ND	3497.50	3500.00	82.1	3.33		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24944	ND	3522.50	3525.00	78.3	2.41		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24945	ND	3550.00	3552.50	82.2	2.09		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24946	ND	3575.00	3577.50	84.8	1.90		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24947	ND	3600.00	3602.50	84.6	1.47		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24948	ND	3625.00	3627.50	78.3	1.20		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24949	ND	3650.00	3652.50	82.7	1.47		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24950	ND	3675.00	3677.50	82.2	1.16		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24951	ND	3700.00	3702.50	84.7	1.13		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24952	ND	3725.00	3727.50	84.0	1.09		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24953	ND	3750.00	3752.50	83.8	1.31		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24954	ND	3775.00	3777.50	79.5	1.51		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24955	ND	3800.00	3802.50	78.9	1.89		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24956	ND	3825.00	3830.00	76.3	1.52		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24957	ND	3850.00	3852.50	77.8	1.46		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24258	CA02	3873.70		93.1	1.24		SHALE GREY-DARK GREY, SILTY, MICACEOUS
B24958	ND	3882.00	3885.00	88.9	2.63		SHALE GREY-DARK GREY, SILTY, MICACEOUS

TABLE B3 25/3-1

MINERALOGICAL COMPOSITION BY X-RAY DIFFRACTION

LAB. REF.	SAMPLE TYPE	DEPTHS Metres		IR %	TOC %	IOC %	ALB %	ORT %	ANH %	QRZ %	CAL %	DOL %	SID %	ND %
B24259	CL	2960.00		65.0	.66		2	0	2	19	30	0	0	47
B24260	CL	2980.00		77.7	.51		2	0	1	22	19	0	0	56
B24261	CL	3020.00		92.8	8.64		1	0	0	20	0	1	0	78
B24262	CL	3025.00		92.8	6.85		1	0	0	19	0	1	0	79
B24263	CL	3033.80		93.1	7.92		1	0	0	20	0	1	0	78
B24264	CL	3041.00		92.2	6.86		2	0	0	24	0	2	0	72
B24492	ND	3050.00	3060.00	88.1	7.23		2	0	1	22	1	2	0	72
B24265	CL	3066.80		88.5	8.81		1	0	0	23	1	1	1	73
B24493	ND	3075.00	3080.00	70.8	4.67		0	0	0	18	16	2	1	63
B24266	CL	3087.00		88.2	2.06		1	0	0	17	1	2	0	79
B24494	ND	3090.00	3100.00	61.0	3.32		1	0	0	14	30	1	2	52
B24267	CL	3096.00		94.6	4.76		2	0	0	15	0	0	0	83
B24256	CA01	3114.90		93.0	6.93		3	0	0	6	0	1	1	89
B24257	CA01	3117.51		99.5	75.23		0	0	0	1	0	0	0	99
B24495	ND	3185.00		97.9	59.99		0	0	0	11	0	0	0	89
B24496	ND	3205.00	3210.00	97.9	63.28		1	0	0	8	0	0	0	91
B24497	ND	3220.01		96.4	41.94		0	1	0	24	0	0	1	74
B24498	ND	3232.51		98.4	66.45		0	0	0	9	0	0	0	91
B24499	ND	3240.00		97.9	56.83		0	0	0	14	0	0	0	86
B24500	ND	3242.50		93.9	32.37		0	0	1	28	0	1	1	69
B24501	ND	3245.00	3250.00	95.2	27.57		0	0	0	29	0	0	1	70
B24502	ND	3277.50	3280.00	84.0	3.89		1	0	1	25	3	0	4	66
B24503	ND	3290.00		86.7	12.06		1	0	1	24	1	0	3	70
B24504	ND	3297.50	3300.00	83.2	4.51		3	0	1	30	1	1	6	58
B24505	ND	3305.00	3310.00	93.0	9.49		0	0	2	27	0	0	2	69
B24937	ND	3342.50	3347.50	72.1	2.55		2	4	1	59	0	0	1	33
B24938	ND	3375.00	3380.00	84.8	2.35		0	4	0	78	0	0	0	18
B24939	ND	3397.50	3400.00	79.9	1.10		1	0	0	22	14	0	5	58
B24940	ND	3422.50	3425.00	87.0	1.10		2	0	1	26	2	1	2	66
B24941	ND	3447.50	3450.00	81.4	1.55		2	1	1	46	8	1	4	37
B24942	ND	3472.50	3475.00	83.7	3.43		4	0	1	44	3	1	2	45
B24943	ND	3497.50	3500.00	82.1	3.33		3	0	0	28	1	0	8	60
B24944	ND	3522.50	3525.00	78.3	2.41		2	0	1	18	1	5	1	72
B24945	ND	3550.00	3552.50	82.2	2.09		3	0	1	24	6	0	4	62
B24946	ND	3575.00	3577.50	84.8	1.90		3	0	0	29	8	0	6	54
B24947	ND	3600.00	3602.50	84.6	1.47		2	0	0	31	7	0	3	57
B24948	ND	3625.00	3627.50	78.3	1.20		2	0	2	20	0	0	6	70
B24949	ND	3650.00	3652.50	82.7	1.47		1	0	3	24	0	0	5	67
B24950	ND	3675.00	3677.50	82.2	1.16		2	0	0	30	8	1	3	56
B24951	ND	3700.00	3702.50	84.7	1.13		2	0	2	31	5	0	3	57
B24952	ND	3725.00	3727.50	84.0	1.09		4	0	2	36	5	0	3	50
B24953	ND	3750.00	3752.50	83.8	1.31		3	0	2	36	3	0	2	54
B24954	ND	3775.00	3777.50	79.5	1.51		2	0	1	39	5	0	2	51
B24955	ND	3800.00	3802.50	78.9	1.89		1	0	2	29	1	0	2	65
B24956	ND	3825.00	3830.00	76.3	1.52		1	0	2	26	5	0	6	60
B24957	ND	3850.00	3852.50	77.8	1.46		1	0	2	20	6	0	5	66
B24258	CA02	3873.70		93.1	1.24		2	0	2	18	0	0	2	76
B24958	ND	3882.00	3885.00	88.9	2.63		2	0	2	17	6	0	6	67

TABLE B4 25/3-1

RESULTS OF ORGANIC INVENTORY ANALYSIS

SAMPLE TYPE	DEPTHS Metres		ROCK-EVAL Q1	on	Tmax	S1	S2	S3	PI	HI	OI	LECO TOC	IOC	IATROSCAN Q2	EOM	100(EOM/TOC)	SAT	ARO	POL	SAT/ARO	HC
CL	2960.00		N	RI_RT	#	.03	.03	.18	#	4	27	.66		N	.010	1.5					
CL	2980.00		N	RI_RT	#	.01	.02	.17	#	5	33	.51		N	<S						
CL	3020.00		N	RI_RT	433	3.59	37.57	.89	.09	435	10	8.64		N	.900	10.4	32.8	39.5	27.7	.83	6.50
CL	3025.00		N	RI_RT	431	2.99	22.94	.61	.12	335	9	6.85		N	.821	12.0	30.2	45.3	24.5	.67	6.20
CL	3033.80		N	RI_RT	432	3.39	31.55	.74	.10	398	9	7.92		N	.873	11.0	29.7	41.2	29.1	.72	6.19
CL	3041.00		N	RI_RT	432	2.66	27.43	.74	.09	400	11	6.86		N	.572	8.3	27.0	40.8	32.3	.66	3.88
ND	3050.00	3060.00	N	RI_RT	432	1.51	19.40	.75	.07	268	10	7.23		N	.403	5.6	18.1	33.0	49.0	.55	2.06
CL	3066.80		N	RI_RT	432	2.09	24.70	.92	.08	280	10	8.81		N	.525	6.0	23.1	45.8	31.1	.51	3.62
ND	3075.00	3080.00	N	RI_RT	432	.59	8.15	.54	.07	175	12	4.67		N	.176	3.8	16.7	30.0	53.3	.56	.82
CL	3087.00		N	RI_RT	428	.08	1.19	.33	.06	58	16	2.06		N	.093	4.5	12.9	46.1	40.9	.28	.55
ND	3090.00	3100.00	N	RI_RT	433	.85	9.75	.24	.08	293	7	3.32		N	.261	7.8	26.2	37.8	36.0	.69	1.67
CL	3096.00		N	RI_RT	431	1.53	17.17	.38	.08	361	8	4.76		N	.387	8.1	32.3	48.9	18.8	.66	3.14
CA01	3114.90		N	RI_RT	435	1.28	14.26	.45	.08	206	6	6.93		N	.328	4.7	6.6	38.5	54.9	.17	1.48
CA01	3117.51		N	RI_RT	432	35.70	270.48	2.05	.12	360	3	75.23		N	1.410	1.9	7.2	38.8	54.0	.18	6.49
ND	3185.00		N	RI_RT	438	21.90	217.73	1.39	.09	363	2	59.99		N	1.386	2.3	6.2	33.6	60.2	.18	5.51
ND	3205.00	3210.00	N	RI_RT	439	14.44	172.12	1.58	.08	272	2	63.28		N	1.160	1.8	7.9	40.8	51.3	.19	5.65
ND	3220.01		N	RI_RT	439	7.86	82.64	1.26	.09	197	3	41.94		N	.966	2.3	6.9	43.3	49.8	.16	4.85
ND	3232.51		N	RI_RT	443	15.59	169.78	1.75	.08	256	3	66.45		N	1.194	1.8	7.5	42.5	50.1	.18	5.97
ND	3240.00		N	RI_RT	440	10.95	132.82	1.51	.08	234	3	56.83		N	1.082	1.9	6.6	45.3	48.1	.14	5.62
ND	3242.50		N	RI_RT	441	6.14	71.57	.81	.08	221	2	32.37		N	.744	2.3	7.4	40.8	51.8	.18	3.58
ND	3245.00	3250.00	N	RI_RT	440	5.43	61.28	.75	.08	222	3	27.57		N	.586	2.1	7.6	39.8	52.7	.19	2.77
ND	3277.50	3280.00	N	RI_RT	435	.65	7.67	.32	.08	197	8	3.89		N	.207	5.3	21.6	40.7	37.8	.53	1.29
ND	3290.00		N	RI_RT	438	1.81	25.42	1.14	.07	211	9	12.06		N	.518	4.3	9.0	40.0	51.0	.22	2.54
ND	3297.50	3300.00	N	RI_RT	436	.72	8.58	.37	.08	190	8	4.51		N	.249	5.5	16.3	38.9	44.8	.42	1.38
ND	3305.00	3310.00	N	RI_RT	440	1.41	18.86	.95	.07	199	10	9.49		N	.376	4.0	12.1	39.9	47.9	.30	1.96
ND	3342.50	3347.50	N	RI_RT	432	.40	5.01	.29	.07	197	11	2.55		N	.132	5.2	20.7	33.3	46.0	.62	.71
ND	3375.00	3380.00	N	RI_RT	430	.36	4.71	.26	.07	201	11	2.35		N	.133	5.7	19.7	34.5	45.8	.57	.72
ND	3397.50	3400.00	N	RI_RT	432	.11	1.58	.18	.07	143	16	1.10		N	.065	5.9	19.8	31.3	48.9	.63	.33
ND	3422.50	3425.00	N	RI_RT	432	.14	1.74	.16	.07	157	14	1.10		N	.060	5.5	18.1	30.3	51.6	.60	.29
ND	3447.50	3450.00	N	RI_RT	435	.24	2.60	.28	.08	168	18	1.55		N	.095	6.1	25.2	32.7	42.2	.77	.55
ND	3472.50	3475.00	N	RI_RT	436	1.62	8.71	.43	.16	254	12	3.43		N	.448	13.1	30.9	40.7	28.5	.76	3.20
ND	3497.50	3500.00	N	RI_RT	437	.41	4.82	.33	.08	145	10	3.33		N	.137	4.1	22.5	32.9	44.6	.68	.76
ND	3522.50	3525.00	N	RI_RT	435	.38	3.94	.36	.09	163	15	2.41		N	.136	5.6	21.2	35.7	43.2	.59	.77
ND	3550.00	3552.50	N	RI_RT	431	.32	2.83	.40	.10	135	19	2.09		N	.135	6.5	22.5	32.7	44.7	.69	.75
ND	3575.00	3577.50	N	RI_RT	433	.19	1.71	.53	.10	90	28	1.90		N	.102	5.4	23.4	34.4	42.2	.68	.59
ND	3600.00	3602.50	N	RI_RT	438	.15	1.26	.58	.11	86	40	1.47		N	.083	5.7	23.8	35.8	40.3	.66	.50
ND	3625.00	3627.50	N	RI_RT	435	.21	1.35	.45	.14	112	38	1.20		N	.089	7.4	31.4	33.9	34.7	.92	.58
ND	3650.00	3652.50	N	RI_RT	432	.32	2.73	.45	.11	185	31	1.47		N	.117	7.9	28.9	33.9	37.2	.85	.73
ND	3675.00	3677.50	N	RI_RT	438	.17	1.30	.50	.12	112	43	1.16		N	.083	7.1	26.0	34.8	39.3	.75	.50
ND	3700.00	3702.50	N	RI_RT	440	.18	.88	.45	.17	78	40	1.13		N	.086	7.6	28.8	36.0	35.3	.80	.56
ND	3725.00	3727.50	N	RI_RT	436	.13	1.03	.38	.11	94	35	1.09		N	.070	6.4	25.4	31.6	43.0	.80	.40
ND	3750.00	3752.50	N	RI_RT	432	.18	1.59	.44	.10	121	33	1.31		N	.085	6.5	24.6	34.2	41.2	.72	.50
ND	3775.00	3777.50	N	RI_RT	437	.19	1.35	.46	.12	89	31	1.51		N	.089	5.9	30.0	34.6	35.4	.87	.58
ND	3800.00	3802.50	N	RI_RT	433	.24	2.68	.44	.08	142	23	1.89		N	.106	5.6	29.8	32.5	37.7	.91	.66
ND	3825.00	3830.00	N	RI_RT	432	.18	1.48	.47	.11	97	31	1.52		N	.090	5.9	28.3	34.3	37.4	.82	.57
ND	3850.00	3852.50	N	RI_RT	431	.24	1.78	.26	.12	122	18	1.46		N	.086	5.9	29.9	30.3	39.8	.99	.52
CA02	3873.70		N	RI_RT	#	.08	.40	.04	.17	32	3	1.24		N	.028	2.3					
ND	3882.00	3885.00	N	RI_RT	438	.37	3.58	.23	.09	136	9	2.63		N	.107	4.1	27.9	33.8	38.3	.83	.66

ANNEXES

WELL :	Depth : 2900.00 M
25/3-1	: 2905.00 M
	Sample type : DE
	Preparation type : MO
	Specification :

Measurements:

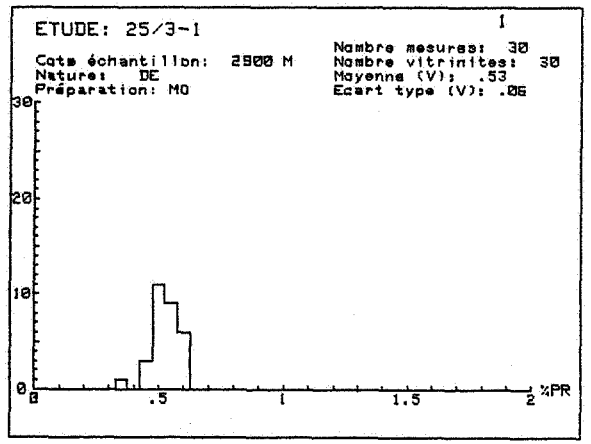
.34 V	.51 V	.56 V
.46 V	.51 V	.56 V
.46 V	.52 V	.57 V
.46 V	.52 V	.57 V
.48 V	.52 V	.59 V
.49 V	.53 V	.59 V
.49 V	.53 V	.60 V
.49 V	.54 V	.60 V
.49 V	.54 V	.62 V
.51 V	.55 V	.62 V

Selected measurements	Nb. readings	Mean	Std. dev.
VITRINITE de .4 à .65 %	29	.53	.05

Comments:

FLUO: A.green to brown liptodetrinites - F.brown sporinites
S.cutinites - S.alginites

LR: Numerous small fragmentsof inertinites , very rare vitrinites



WELL :	Depth : 2985.00 M
25/3-1	: 2985.00 M
	Sample type : CL
	Preparation type : MO
	Specification :

Measurements:

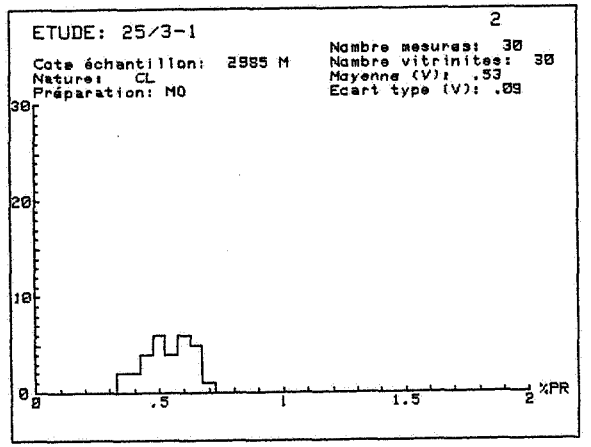
.35 V	.50 V	.61 V
.37 V	.51 V	.61 V
.39 V	.51 V	.62 V
.41 V	.51 V	.62 V
.44 V	.53 V	.63 V
.44 V	.53 V	.63 V
.46 V	.55 V	.64 V
.47 V	.57 V	.64 V
.48 V	.58 V	.66 V
.49 V	.59 V	.68 V

Selected measurements	Nb. readings	Mean	Std. dev.
Whole VITRINITE	30	.53	.09

Comments:

FLUO: S.yellow to brown liptodetrinites
Very rare Tasmanaceae and Botryococcus (eqVRo=0.60%)

LR: Numerous small fragments of inertinites and very rare vitrinites.



WELL :	Depth :	3027.00 M
25/3-1	:	3027.00 M
	Sample type :	CL
	Preparation type :	MO
	Specification :	

Measurements:

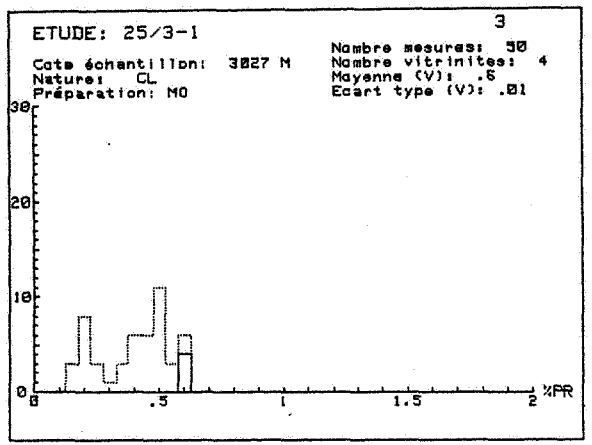
.14 B	.37 B	.49 B
.17 B	.38 B	.49 B
.17 B	.38 B	.50 B
.18 B	.38 B	.50 B
.18 B	.39 B	.51 B
.18 B	.40 B	.51 B
.19 B	.41 B	.52 B
.19 B	.44 B	.54 B
.20 B	.44 B	.56 B
.20 B	.45 B	.57 B
.21 B	.45 B	.58 B
.23 B	.46 B	.59 V
.24 B	.46 B	.59 V
.26 B	.48 B	.60 B
.29 B	.48 B	.61 V
.34 B	.48 B	.62 V
.37 B	.49 B	

Selected measurements	Nb. readings	Mean	Std. dev.
BITUMEN de .1 à .3 %	15	.20	.04
BITUMEN de .3 à .6 %	32	.46	.07
Whole VITRINITE	4	.60	.01

Comments:

FLUO: Brown sapropelic groundmass rich in yellow to brown exinites
F.sporinites, F.Tasmanaceae and R.Botryococcus (eqVRo=0.55-0.60%)

LR: Numerous bituminites, Frequent bitumens (two populations), frequent small fragments of inertinites. Very rare vitrinites.



WELL :	Depth :	3055.00 M
25/3-1	:	3055.00 M
	Sample type :	CL
	Preparation type :	MO
	Specification :	

Measurements:

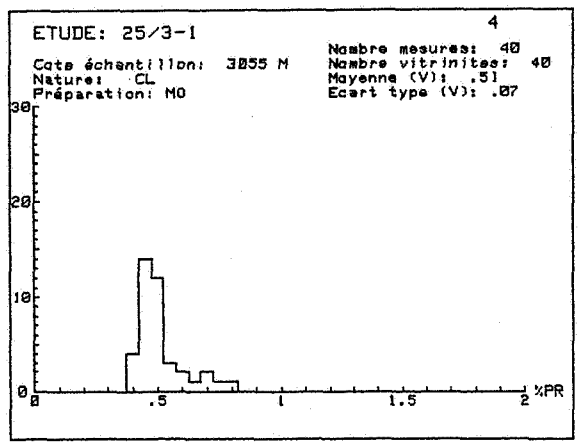
.41 VF	.46 VF	.51 VF
.41 VF	.46 VF	.52 VF
.42 VF	.47 VF	.52 VF
.42 VF	.47 VF	.53 VF
.43 VF	.48 VF	.56 VF
.43 VF	.48 VF	.56 VF
.44 VF	.49 VF	.60 VF
.45 VF	.50 VF	.60 VF
.45 VF	.50 VF	.63 V
.45 VF	.50 VF	.69 V
.45 VF	.50 VF	.69 V
.45 VF	.51 VF	.76 V
.46 VF	.51 VF	.78 V
.46 VF		

Selected measurements	Nb. readings	Mean	Std. dev.
VITRINITE de .65 à .85 %	5	.71	.05
FLUORESCENT VITRINITE	35	.48	.05

Comments:

FLUO: Beige humic groundmass rich in sporinites - low fluo vitrinites
S.orange Botryococcus (eqVRo=0.70%)

RL: Numerous smalll coaly particles rich in inertinites and vitrinites



WELL :	Depth : 3079.00 M
25/3-1	: 3079.00 M
	Sample type : CL
	Preparation type : MO
	Specification :

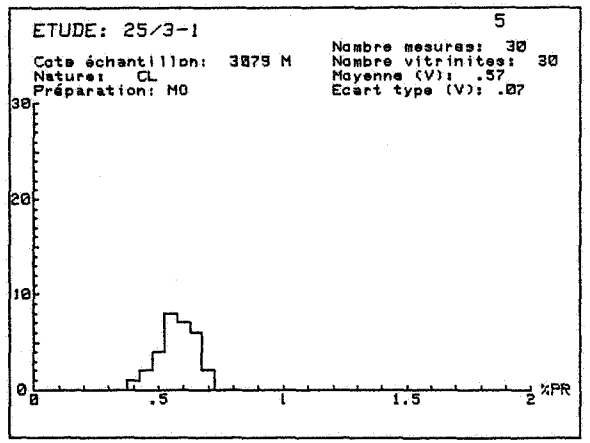
Measurements:

.42 V	.53 V	.61 V
.44 V	.55 V	.61 V
.47 V	.56 V	.63 V
.49 V	.56 V	.64 V
.50 V	.56 V	.64 V
.51 V	.58 V	.65 V
.51 V	.58 V	.66 V
.53 V	.59 V	.67 V
.53 V	.59 V	.70 V
.53 V	.59 V	.72 V

Selected measurements	Nb. readings	Mean	Std. dev.
Whole VITRINITE	30	.57	.07

Comments:

FLUO: Very abundant brown sporinites
RL: Numerous small fragments of coal. Numerous inertinites (fusinites- macrinites and inertodetrinites). Frequent vitrinites (25%).



WELL :	Depth : 3117.50 M
25/3-1	: 3117.50 M
	Sample type : CA
	Preparation type : MO
	Specification : *1

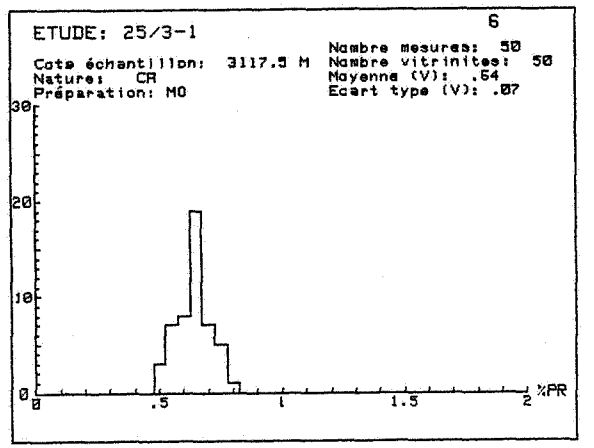
Measurements:

.49 V	.62 V	.67 V
.50 V	.63 V	.67 V
.51 V	.63 V	.67 V
.53 V	.63 V	.68 V
.55 V	.63 V	.68 V
.56 V	.63 V	.69 V
.56 V	.63 V	.69 V
.57 V	.64 V	.70 V
.57 V	.64 V	.71 V
.57 V	.64 V	.72 V
.58 V	.64 V	.73 V
.59 V	.65 V	.74 V
.59 V	.65 V	.75 V
.59 V	.65 V	.76 V
.60 V	.65 V	.77 V
.60 V	.65 V	.78 V
.62 V	.66 V	

Selected measurements	Nb. readings	Mean	Std. dev.
Whole VITRINITE	50	.64	.07

Comments:

FLUO: R.orange sporinites - R.yellow cutinites
S.orange liptodetrinites
RL: Composite coal. Abundant inertinites (50%) (semifusinites - inertodetrinites) Abundant homogeneous vitrinites (50%).



WELL :	Depth :	3205.00 M
25/3-1	:	3205.00 M
	Sample type :	DE
	Preparation type :	MO
	Specification :	

Measurements:

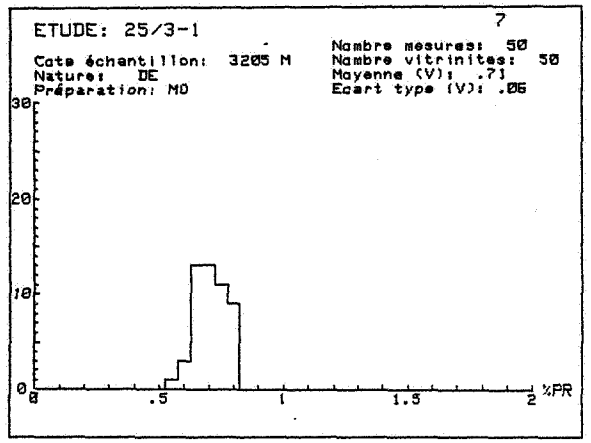
.55 V	.68 V	.74 V
.58 V	.68 V	.74 V
.60 V	.69 V	.76 V
.60 V	.69 V	.76 V
.63 V	.69 V	.76 V
.64 V	.69 V	.77 V
.64 V	.70 V	.77 V
.64 V	.70 V	.78 V
.65 V	.71 V	.78 V
.65 V	.71 V	.79 V
.65 V	.72 V	.79 V
.65 V	.72 V	.79 V
.66 V	.72 V	.80 V
.66 V	.73 V	.80 V
.67 V	.73 V	.81 V
.67 V	.73 V	.81 V
.67 V	.74 V	

Selected measurements	Nb. readings	Mean	Std. dev.
Whole VITRINITE	50	.71	.06

Comments:

FLUO: R.pale groundmass - A.orange sporinites
R.cutinites - S.resinites

RL : Typical coal. Trimaceral coal rich in inertinites (55%) (semifusinites - macrinites inertodetrinites) Frequent homogeneous vitrinites (45%).



WELL :	Depth :	3232.50 M
25/3-1	:	3232.50 M
	Sample type :	DE
	Preparation type :	MO
	Specification :	

Measurements:

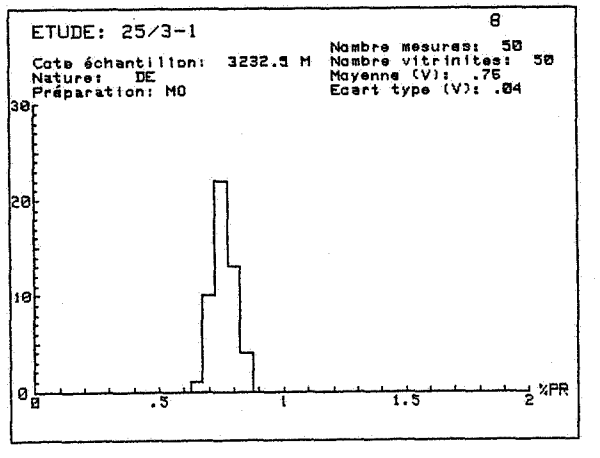
.64 V	.74 V	.78 V
.69 V	.75 V	.78 V
.70 V	.75 V	.78 V
.71 V	.75 V	.78 V
.71 V	.75 V	.79 V
.71 V	.76 V	.80 V
.71 V	.76 V	.80 V
.72 V	.76 V	.80 V
.72 V	.76 V	.81 V
.72 V	.76 V	.81 V
.72 V	.77 V	.82 V
.73 V	.77 V	.82 V
.73 V	.77 V	.84 V
.73 V	.77 V	.84 V
.74 V	.77 V	.86 V
.74 V	.77 V	.86 V
.74 V	.78 V	

Selected measurements	Nb. readings	Mean	Std. dev.
Whole VITRINITE	50	.76	.04

Comments:

FLUO: F.orange sporinites - S.yellow cutinites
R.resinites

RL: Typical coal (Dito sample 3205m).



WELL :	Depth :	3342.50 M
25/3-1	:	3345.00 M
	Sample type :	DE
	Preparation type :	MO
	Specification :	

Measurements:

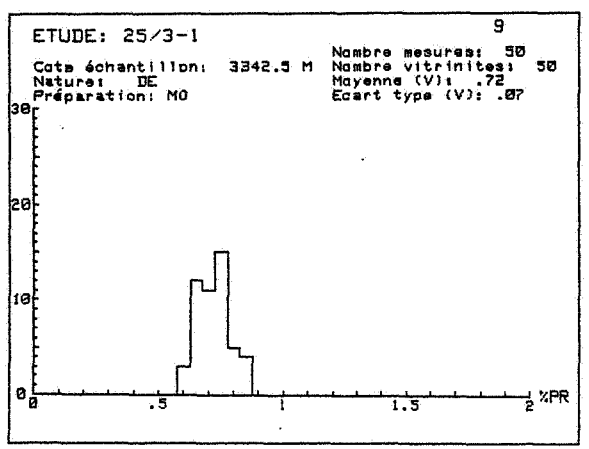
.59 V	.69 V	.75 V
.61 V	.69 V	.75 V
.61 V	.69 V	.75 V
.63 V	.69 V	.76 V
.64 V	.71 V	.77 V
.64 V	.71 V	.77 V
.65 V	.71 V	.77 V
.65 V	.72 V	.78 V
.65 V	.72 V	.79 V
.65 V	.73 V	.80 V
.66 V	.73 V	.80 V
.66 V	.73 V	.81 V
.66 V	.73 V	.83 V
.67 V	.73 V	.85 V
.67 V	.73 V	.85 V
.68 V	.74 V	.86 V
.69 V	.75 V	

Selected measurements	Nb. readings	Mean	Std. dev.
Whole VITRINITE	50	.72	.07

Comments:

FLUO: F.brown humic groundmass - A.yellow cutinites - F.orange sporinites
R.brown resinites - Very rare yellow Botryococcus (eqVRo=0.70%)

RL: Abundant typical trimaceral coals. Abundant vitrinites (75%), frequent inertinites (20%) and some exinites (5%)(sporinites).



WELL :	Depth :	3472.50 M
25/3-1	:	3475.00 M
	Sample type :	DE
	Preparation type :	MO
	Specification :	

Measurements:

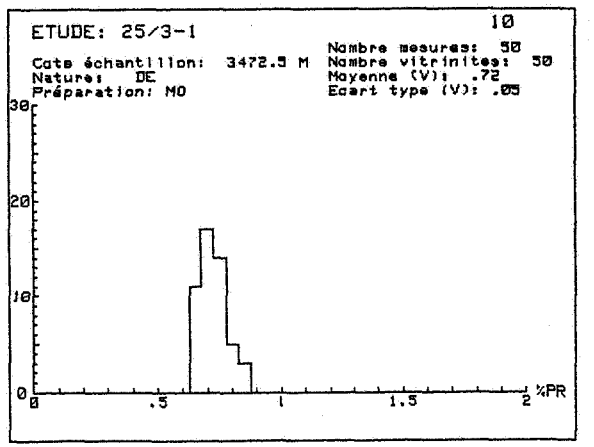
.63 V	.69 V	.73 V
.64 V	.69 V	.73 V
.64 V	.69 V	.73 V
.65 V	.69 V	.74 V
.65 V	.69 V	.75 V
.66 V	.69 V	.75 V
.66 V	.70 V	.75 V
.67 V	.70 V	.77 V
.67 V	.70 V	.78 V
.67 V	.71 V	.78 V
.67 V	.71 V	.79 V
.68 V	.73 V	.80 V
.68 V	.73 V	.80 V
.68 V	.73 V	.83 V
.68 V	.73 V	.84 V
.68 V	.73 V	.85 V
.69 V	.73 V	

Selected measurements	Nb. readings	Mean	Std. dev.
Whole VITRINITE	50	.72	.05

Comments:

FLUO: F.brown groundmass - R.sporinites and cutinites
S.fluo vitrinites - R.Botryococcus (eqVRo=0.70-0.75%)

RL: Typical trimaceral coals. Abundant vitrinites (80%); frequent inertinites(15-20%) (semifusinites and inertodetrinites) and rare exinites.



WELL :	Depth : 3550.00 M
25/3-1	: 3552.50 M
	Sample type : DE
	Preparation type : MO
	Specification :

Measurements:

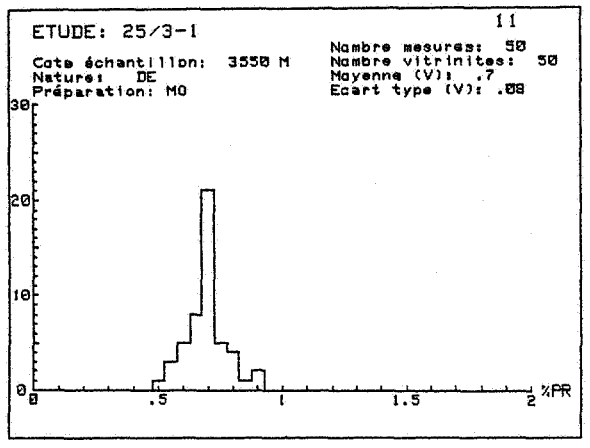
.50 V	.68 V	.72 V
.55 V	.68 V	.72 V
.56 V	.68 V	.72 V
.57 V	.69 V	.72 V
.58 V	.69 V	.74 V
.58 V	.69 V	.74 V
.60 V	.69 V	.74 V
.61 V	.69 V	.75 V
.62 V	.69 V	.77 V
.63 V	.70 V	.79 V
.65 V	.71 V	.79 V
.65 V	.71 V	.80 V
.65 V	.71 V	.81 V
.65 V	.71 V	.86 V
.66 V	.72 V	.90 V
.67 V	.72 V	.91 V
.67 V	.72 V	

Selected measurements	Nb. readings	Mean	Std. dev.
Whole VITRINITE	50	.70	.08

Comments:

FLUO: F.brown humic groundmass - F.orange sporinites - S.cutinites
R.dark Botryococcus (eqVRo=0.90%)

RL: Typical coals (Dito sample 3472.5/3475m).



WELL :	Depth : 3650.00 M
25/3-1	: 3652.50 M
	Sample type : DE
	Preparation type : MO
	Specification :

Measurements:

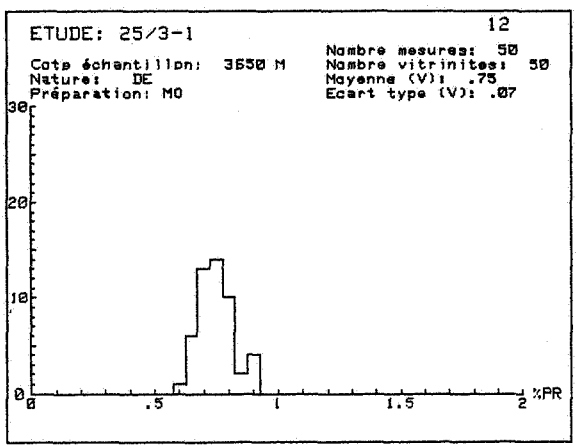
.61 V	.70 V	.78 V
.63 V	.72 V	.78 V
.64 V	.72 V	.79 V
.64 V	.73 V	.81 V
.66 V	.73 V	.81 V
.67 V	.73 V	.81 V
.67 V	.73 V	.82 V
.68 V	.74 V	.82 V
.68 V	.74 V	.82 V
.69 V	.74 V	.82 V
.69 V	.74 V	.85 V
.69 V	.75 V	.87 V
.70 V	.75 V	.88 V
.70 V	.75 V	.88 V
.70 V	.76 V	.88 V
.70 V	.76 V	.90 V
.70 V	.77 V	

Selected measurements	Nb. readings	Mean	Std. dev.
Whole VITRINITE	50	.75	.07

Comments:

FLUO: Brownish humic groundmass - F.orange sporinites - S.cutinites
R.Tasmanaceae and Botryococcus (various colours)

RL: Typical coals. Abundant vitrinites (60%) and frequent inertinites (40%)
(semifusinites - macrinite - inertodetrinites).



WELL :	Depth : 3750.00 M
25/3-1	: 3752.50 M
	Sample type : DE
	Preparation type : MO
	Specification :

Measurements:

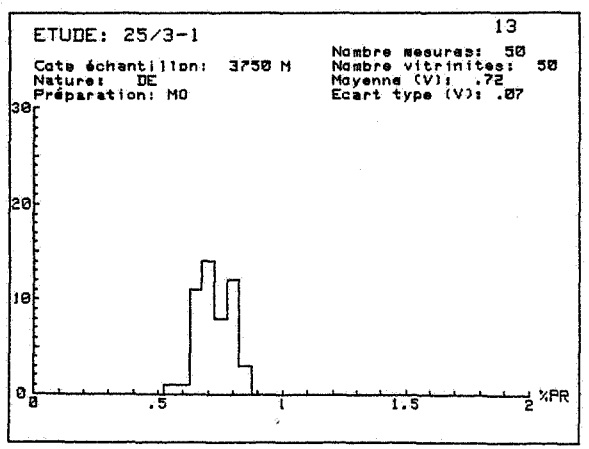
.55 V	.70 V	.76 V
.61 V	.70 V	.78 V
.63 V	.70 V	.78 V
.64 V	.70 V	.78 V
.64 V	.71 V	.79 V
.65 V	.71 V	.79 V
.66 V	.71 V	.80 V
.66 V	.71 V	.80 V
.66 V	.72 V	.81 V
.66 V	.72 V	.81 V
.66 V	.73 V	.81 V
.67 V	.74 V	.81 V
.67 V	.74 V	.82 V
.68 V	.74 V	.83 V
.68 V	.75 V	.85 V
.69 V	.75 V	.85 V
.69 V	.75 V	

Selected measurements	Nb. readings	Mean	Std. dev.
Whole VITRINITE	50	.72	.07

Comments:

FLUO: A.brown humic groundmass rich in orange sporinites - R.cutinites
R.Tasmanaceae (eqVRo=0.70-0.75%) - R.dark Botryococcus (eqVRo=1%)

RL: Typical coal rich in mineral matrix. Abundant vitrinites (50%) and inertinites (50%) (semifusinites - homogeneous inertinites - inertodetrinites).



WELL :	Depth : 3873.70 M
25/3-1	: 3873.70 M
	Sample type : CA
	Preparation type : MO
	Specification : *Z

Measurements:

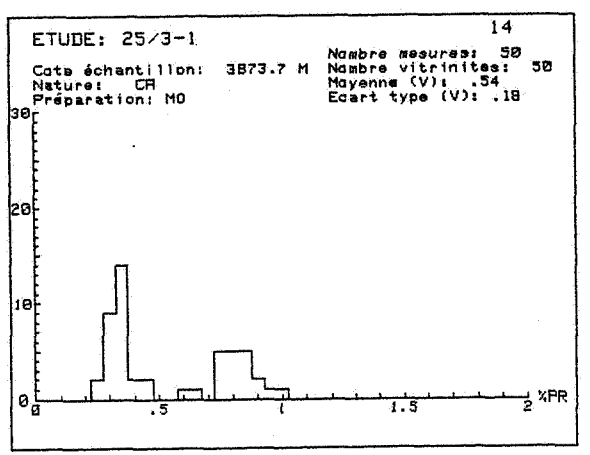
.25 VF	.35 VF	.77 V
.26 VF	.35 VF	.77 V
.29 VF	.35 VF	.78 V
.29 VF	.35 VF	.79 V
.30 VF	.35 VF	.80 V
.30 VF	.36 VF	.81 V
.31 VF	.36 VF	.82 V
.31 VF	.37 VF	.84 V
.31 VF	.38 VF	.85 V
.31 VF	.42 VF	.86 V
.32 VF	.47 V	.86 V
.33 VF	.47 VF	.86 V
.33 VF	.62 VF	.91 V
.33 VF	.64 V	.92 V
.34 VF	.74 V	.93 V
.34 VF	.75 V	.98 V
.34 VF	.75 V	

Selected measurements	Nb. readings	Mean	Std. dev.
FLUORESCENT VITRINITE	29	.34	.07
VITRINITE de .7 à 1.05 %	19	.83	.07

Comments:

FLUO: F.Dark fluorescent vitrinites
Very rare dark exinites

RL: Small fragments of coal rich in inertinites (homogeneous inertinites)
Frequent structured vitrinites (fluorescent).



WELL :	Depth : 3905.00 M
25/3-1	: 3907.50 M
	Sample type : DE
	Preparation type : MO
	Specification :

Measurements:

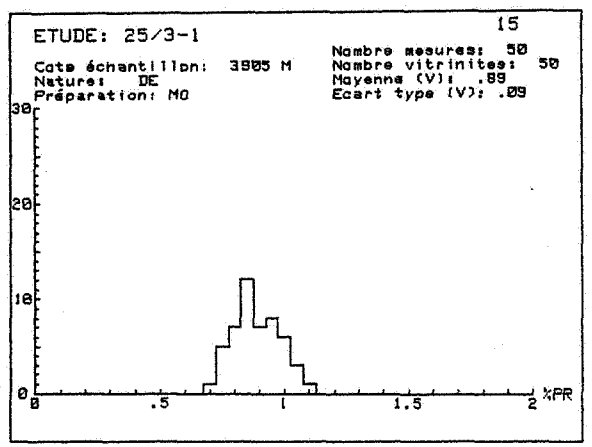
.69 V	.85 V	.95 V
.74 V	.85 V	.95 V
.75 V	.86 V	.96 V
.76 V	.86 V	.97 V
.77 V	.86 V	.97 V
.77 V	.87 V	.97 V
.79 V	.87 V	.98 V
.79 V	.87 V	.99 V
.80 V	.88 V	1.00 V
.81 V	.89 V	1.00 V
.81 V	.89 V	1.01 V
.81 V	.89 V	1.02 V
.82 V	.90 V	1.04 V
.83 V	.91 V	1.05 V
.83 V	.92 V	1.05 V
.83 V	.93 V	1.08 V
.84 V	.94 V	

Selected measurements	*Nb. readings*	*Mean*	*Std. dev.*
Whole VITRINITE	50	.89	.09

Comments:

fluo: R.orange groundmass

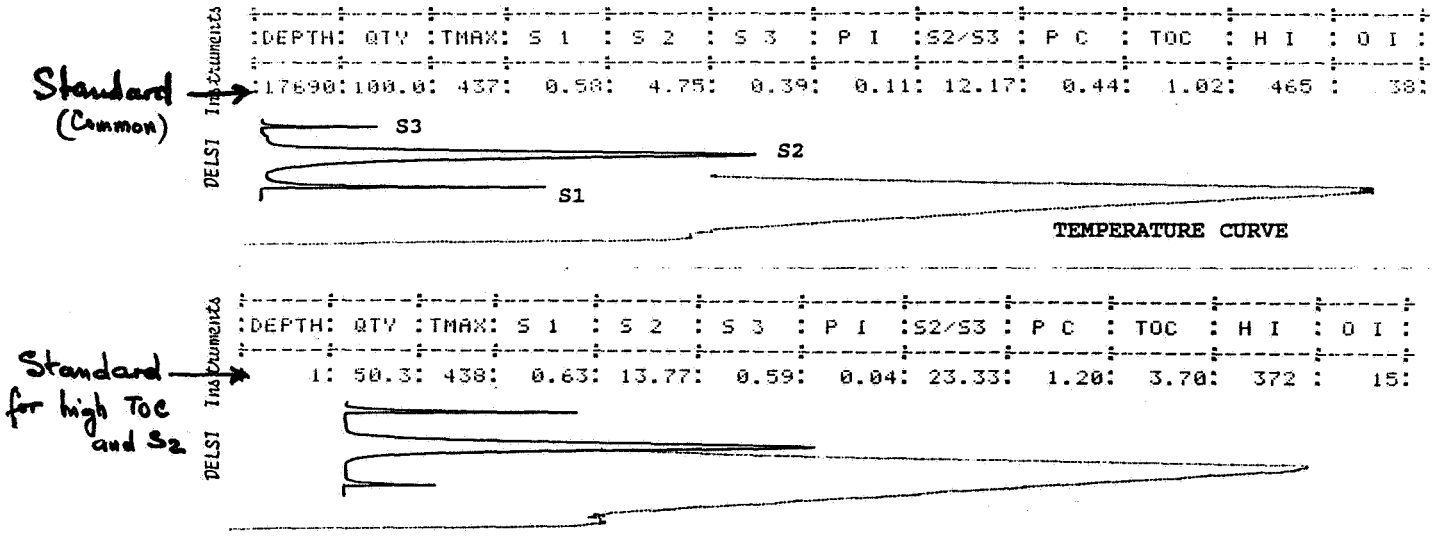
RL: Typical coals rich in vitrinites (30%) and inertinites (70%) (semifusinites - macrinites - inertodetrinites).



LEGEND OF PYROGRAMS

ROCK-EVAL II DELSI INSTRUMENTS

Cycle I 3 min at 300 °C then 25 °C /min to 550 °C



DEPTH : Replaced by the lab reference of the sample.
In order to check the reproducibility of the measurements a standard (usually ref 17690) is analyzed at intervals of some 10 samples.In case of samples with high organic carbon content we use another richer standard (ref 1).

QTY : Sample weight in milligrams: On whole rock (RT) or insoluble residue (RI_RT) or extracted whole rock (RE) or insoluble residue of extracted rock (RI_RE).

TMAX : Temperature at the maximum of the S2 peak (°C).

S1 : Hydrocarbons volatilized at 300 °C during 3min (mg HC/g rock).

S2 : Hydrocarbon-like products resulting from the cracking of heavy extractable compounds and kerogen between 300 and 550 °C (mg HC/g rock).

S3 : CO2 trapped during the cracking of kerogen between 300 and 390 °C (mg CO2/g rock).

PI : Production Index S1/(S1+S2).

S2/S3 : Parameter related to the Hydrogen / Oxygen ratio of organic matter.

PC : Pyrolysable Carbon = (S1+S2)*0.083. Part of organic carbon involved in the HC production through volatilization and cracking phases (% weight of rock).

TOC : Total Organic Carbon in % weight of the sample used for the analysis (RT or RI_RT).

or

IOC : Insoluble Organic Carbon in % weight of sample used for the analysis (RE or RI_RE).

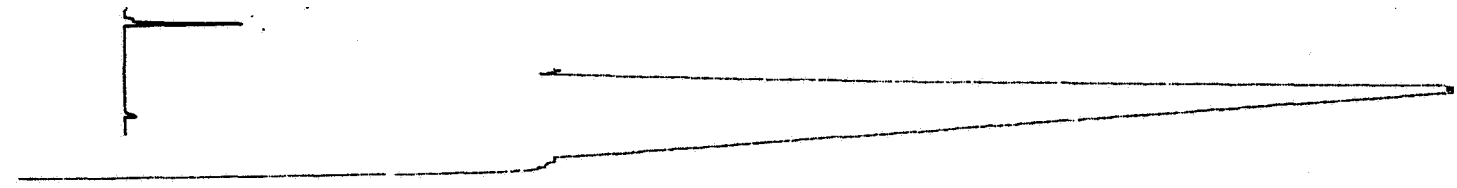
HI : Hydrogen Index (S2/OC)*100 (mg HC/g OC).
with OC = TOC or IOC

OI : Oxygen Index (S3/OC)*100 (mg CO2/g OC).

N.B.: When the analysis is carried out on insoluble residue the S1,S2,S3 values are recomputed relative to whole rock weight shown in the organic inventory analysis table.

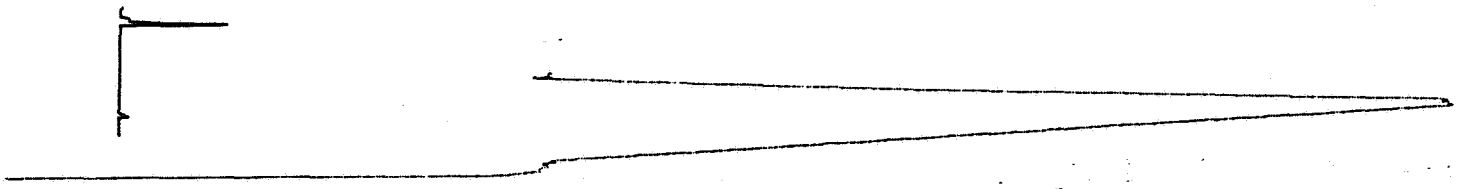
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH:	QTY :	TMAX:	S 1 :	S 2 :	S 3 :	P I :	S2/S3 :	P C :	TOC :	H I :	O I
24259:	99.8:	:	0.04:	0.04:	0.28:	0.50:	0.14:	0.00:	1.02:	3 :	27



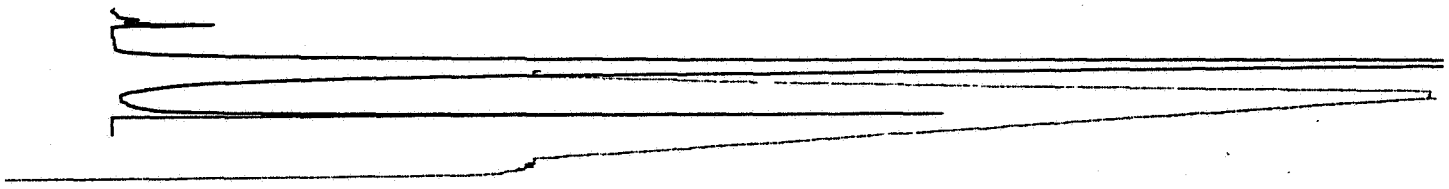
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH:	QTY :	TMAX:	S 1 :	S 2 :	S 3 :	P I :	S2/S3 :	P C :	TOC :	H I :	O I
24260:	100.4:	:	0.01:	0.03:	0.22:	0.25:	0.13:	0.00:	0.66:	4 :	33



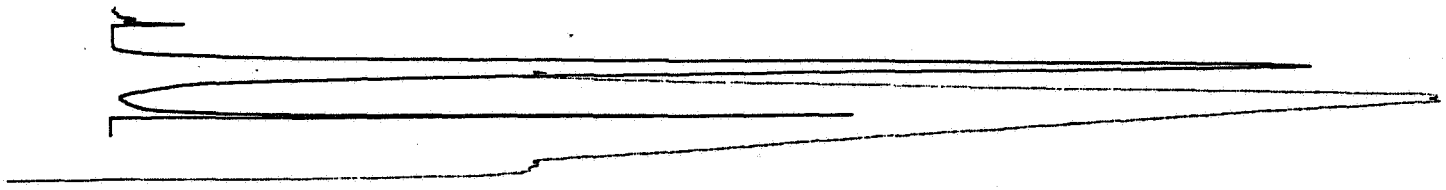
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH:	QTY :	TMAX:	S 1 :	S 2 :	S 3 :	P I :	S2/S3 :	P C :	TOC :	H I :	O I
24261:	43.4:	433:	3.87:	40.50:	0.96:	0.09:	42.18:	3.69:	9.31:	435 :	10



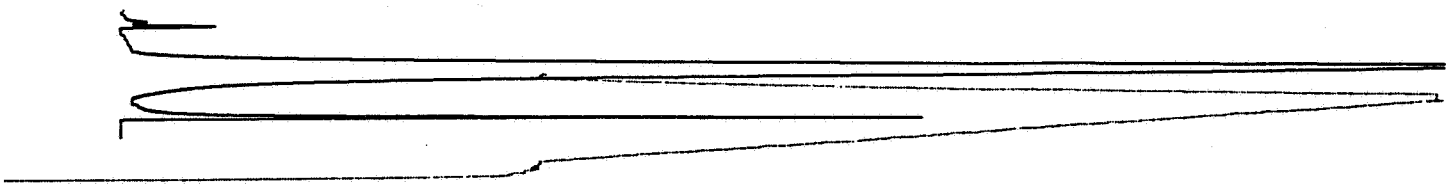
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH:	QTY :	TMAX:	S 1 :	S 2 :	S 3 :	P I :	S2/S3 :	P C :	TOC :	H I :	O I
24262:	55.5:	431:	3.22:	24.72:	0.66:	0.12:	37.45:	2.32:	7.38:	334 :	8



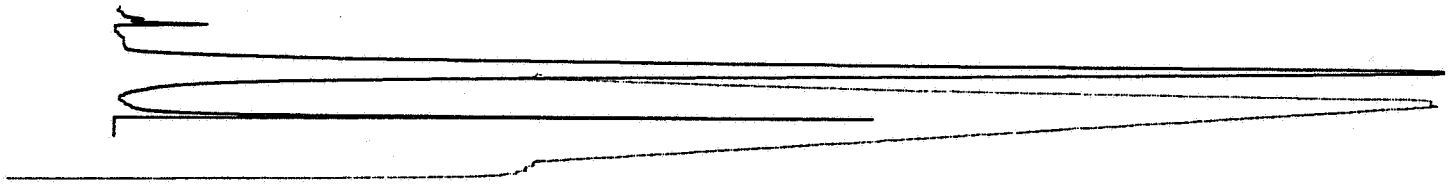
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH:	QTY :	TMAX:	S 1 :	S 2 :	S 3 :	P I :	S2/S3 :	P C :	TOC :	H I :	O I
24263:	47.4:	432:	3.64:	33.90:	0.80:	0.10:	42.37:	3.12:	8.51:	398 :	9



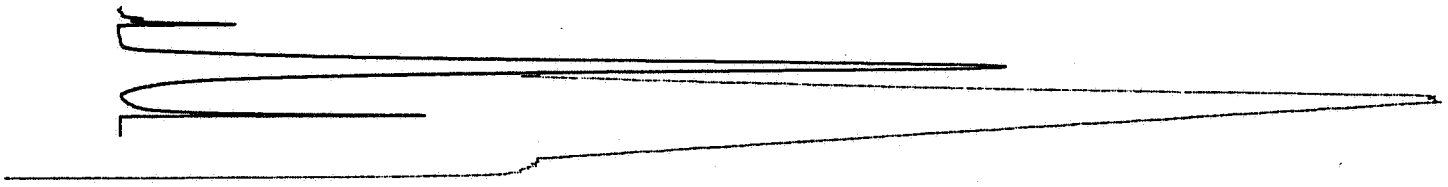
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH:	QTY :	TMAX:	S 1 :	S 2 :	S 3 :	P I :	S2/S3 :	P C :	TOC :	H I :	O I
24264:	52.0:	432:	2.88:	29.75:	0.80:	0.09:	37.18:	2.71:	7.44:	399 :	10



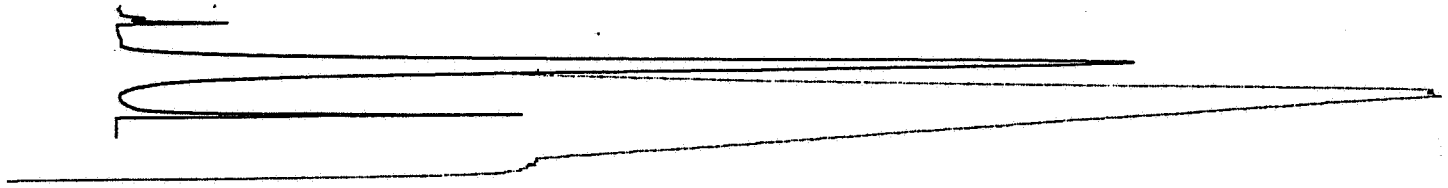
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH:	QTY :	TMAX:	S 1 :	S 2 :	S 3 :	P I :	S2/S3 :	P C :	TOC :	H I :	O I
24492:	49.0:	432:	1.71:	22.02:	0.85:	0.07:	25.90:	1.97:	8.21:	268 :	10



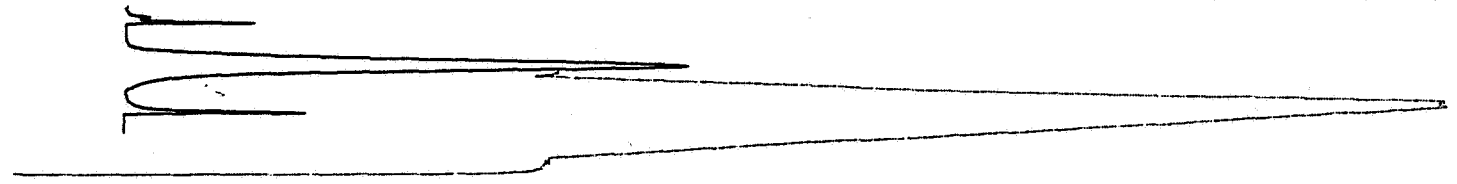
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH:	QTY :	TMAX:	S 1 :	S 2 :	S 3 :	P I :	S2/S3 :	P C :	TOC :	H I :	O I
24265:	41.1:	432:	2.36:	27.90:	1.04:	0.08:	26.82:	2.52:	9.95:	280 :	10



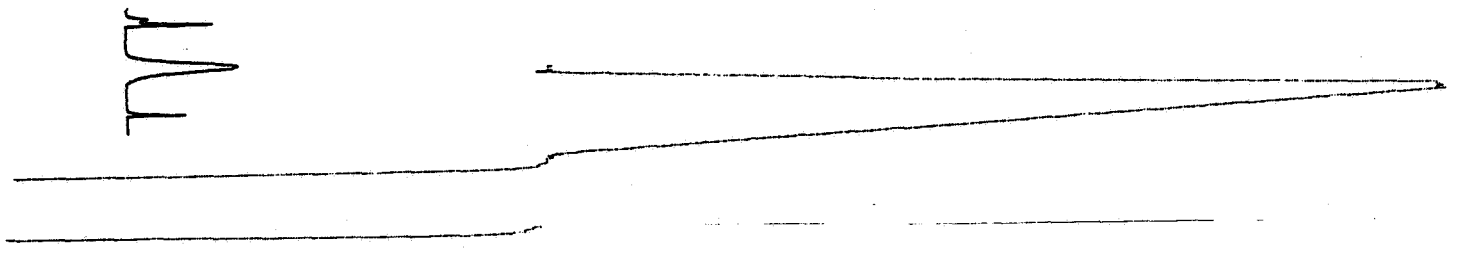
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24493	59.0	432	0.84	11.52	0.77	0.07	14.96	1.03	6.60	174	11



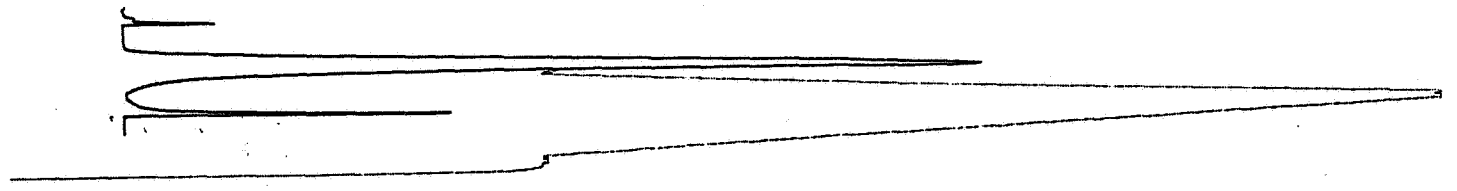
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24266	91.7	428	0.09	1.35	0.37	0.06	3.64	0.12	2.34	57	15



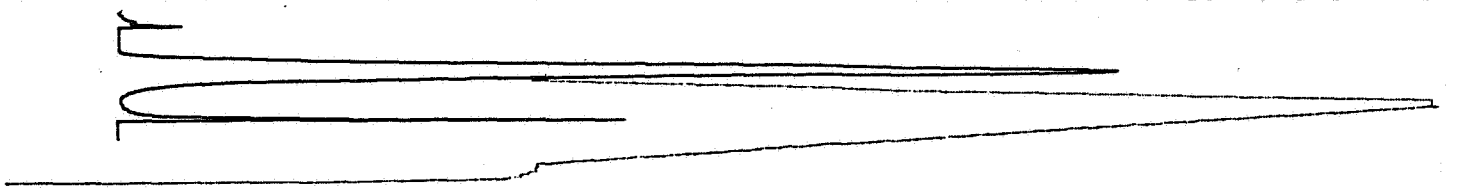
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24494	61.2	433	1.40	15.99	0.40	0.08	39.97	1.44	5.45	293	7



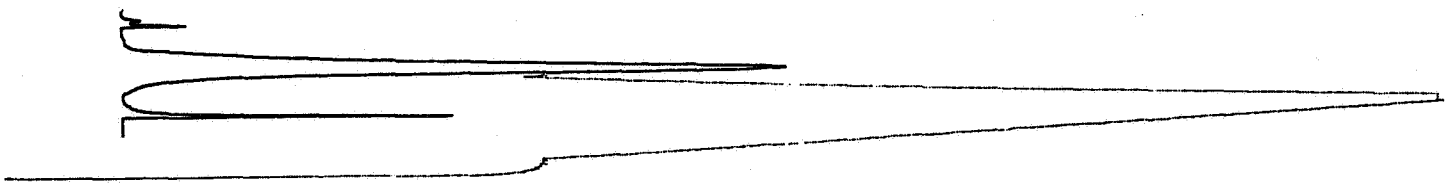
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24267	61.1	431	1.62	18.15	0.40	0.08	45.37	1.64	5.03	360	7



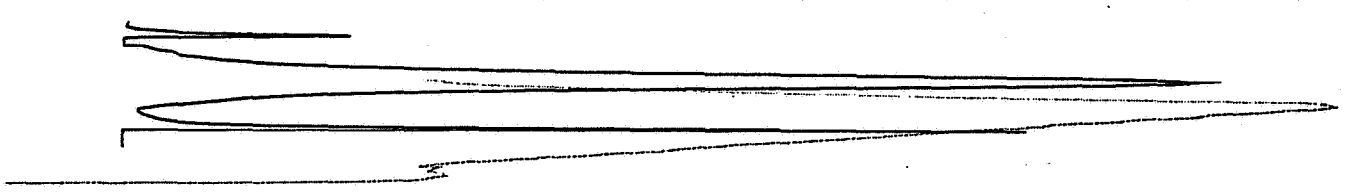
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24256	51.8	435	1.38	15.34	0.48	0.08	31.95	1.39	7.45	205	6



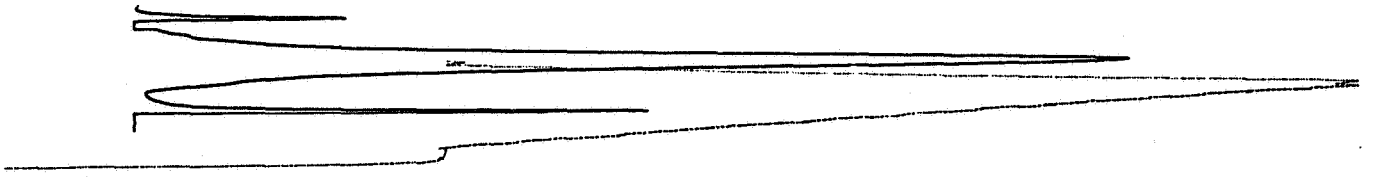
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24257	9.2	432	35.86	271.73	2.06	0.12	131.90	25.63	75.58	359	2



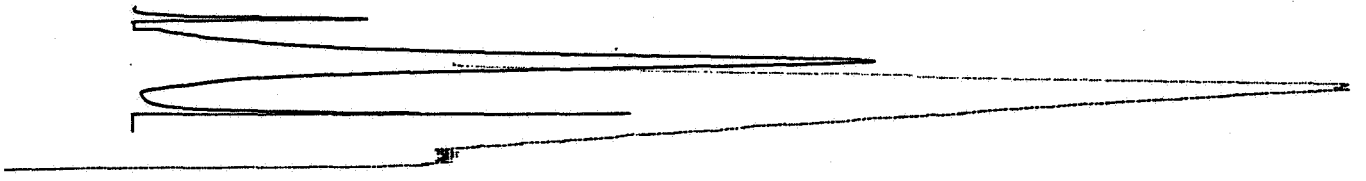
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24495	10.5	438	22.38	222.47	1.42	0.09	156.66	20.40	61.30	362	2



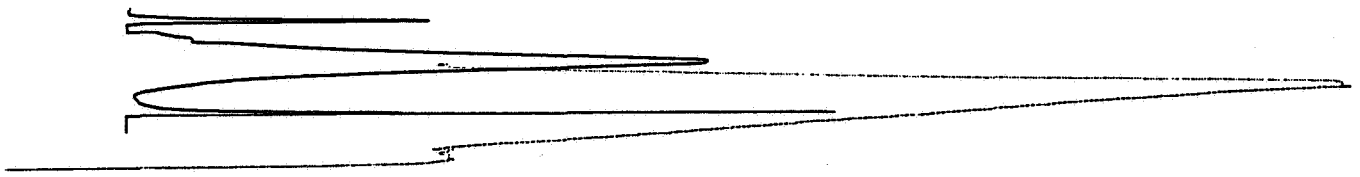
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24496	10.5	439	14.76	175.90	1.61	0.08	109.25	15.88	64.67	271	.2



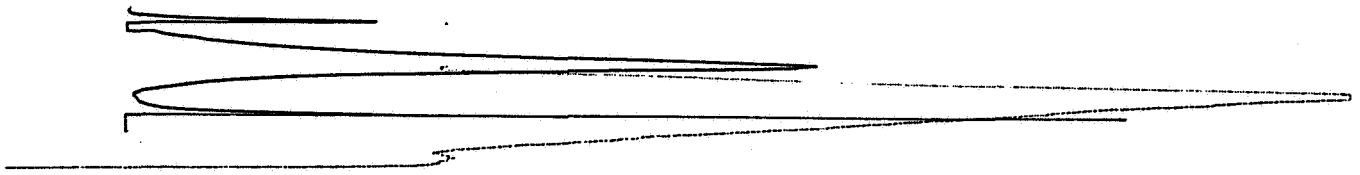
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH:	QTY :	TMAX:	S 1 :	S 2 :	S 3 :	P I :	S2/S3 :	P C :	TOC :	H I :	O I
24497:	19.0:	439:	8.15:	85.73:	1.31:	0.09:	65.44:	7.82:	43.51:	197 :	3



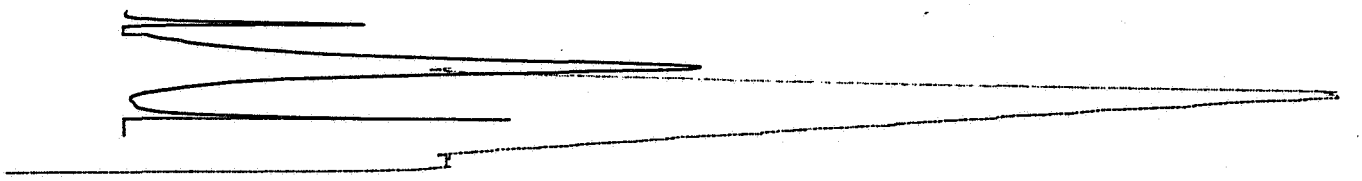
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH:	QTY :	TMAX:	S 1 :	S 2 :	S 3 :	P I :	S2/S3 :	P C :	TOC :	H I :	O I
24498:	10.1:	443:	15.84:	172.47:	1.78:	0.08:	96.89:	15.69:	67.50:	255 :	2



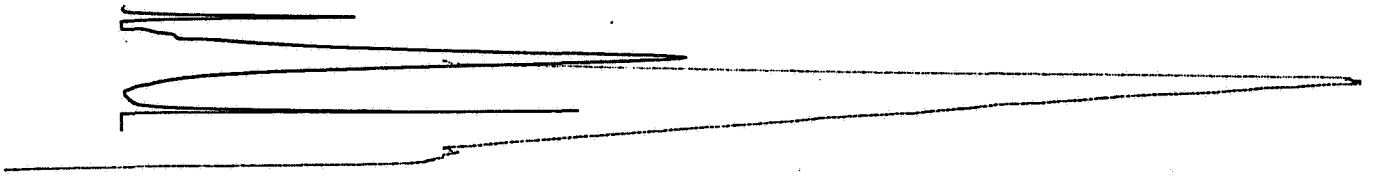
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH:	QTY :	TMAX:	S 1 :	S 2 :	S 3 :	P I :	S2/S3 :	P C :	TOC :	H I :	O I
24499:	11.0:	440:	11.18:	135.63:	1.54:	0.08:	88.07:	12.23:	58.03:	233 :	2



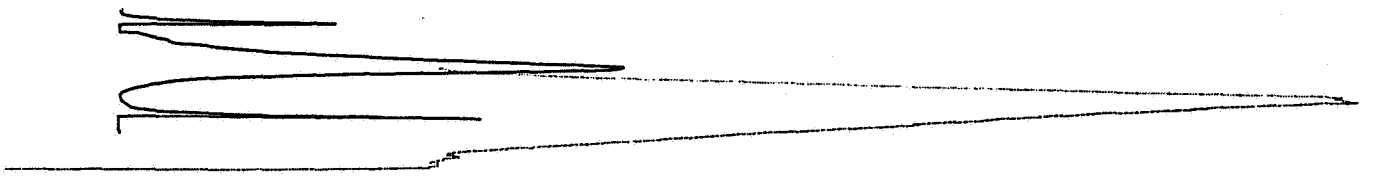
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH:	QTY :	TMAX:	S 1 :	S 2 :	S 3 :	P I :	S2/S3 :	P C :	TOC :	H I :	O I
24500:	18.5:	441:	6.54:	76.21:	0.86:	0.08:	88.61:	6.89:	34.47:	221 :	2



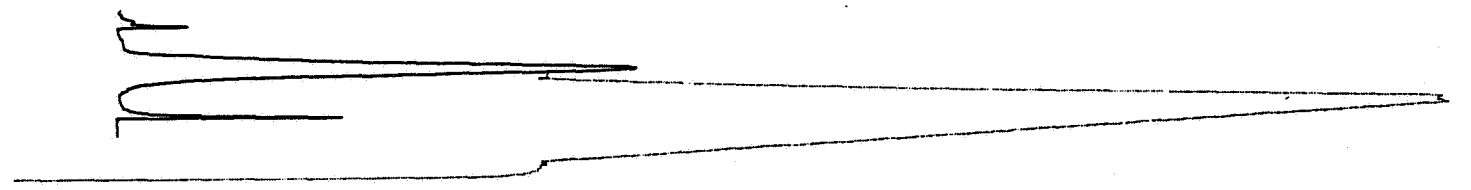
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24501	18.9	440	5.71	64.39	0.79	0.08	81.50	5.84	28.97	222	2



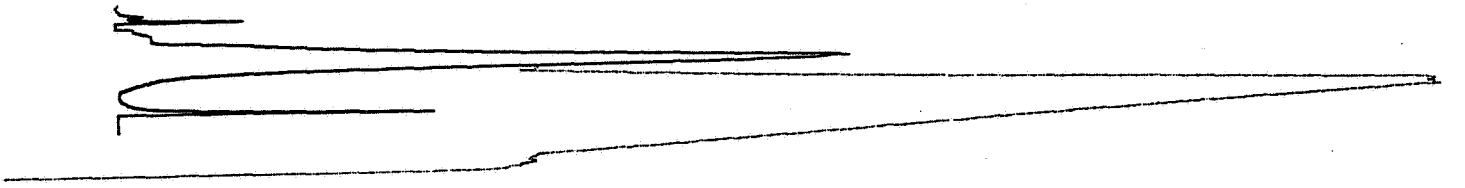
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24502	70.8	435	0.77	9.13	0.38	0.08	24.02	0.82	4.63	197	8



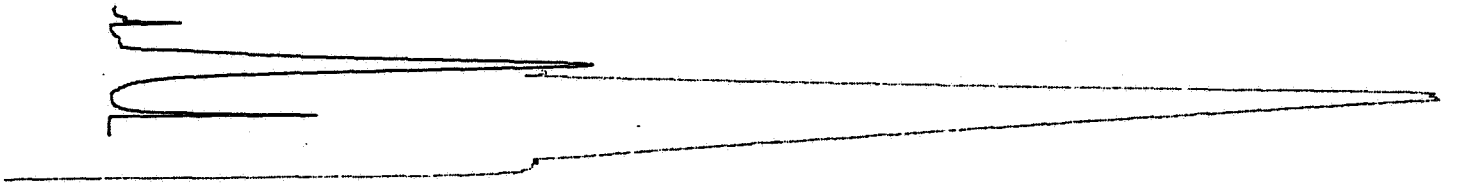
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24503	34.8	438	2.09	29.31	1.32	0.07	22.20	2.61	13.90	210	9



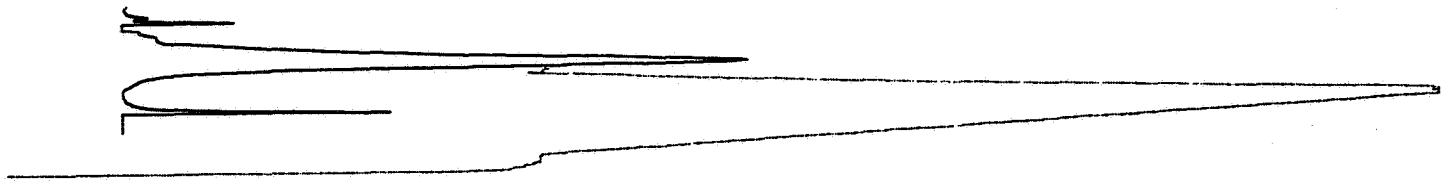
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24504	60.8	436	0.87	10.32	0.44	0.08	23.45	0.93	5.42	190	8



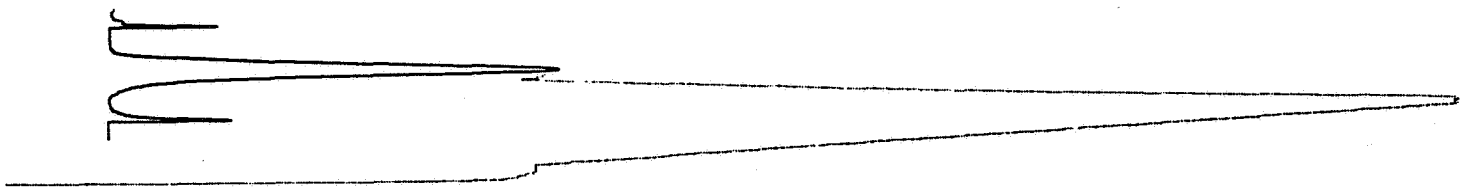
DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24505	42.0	440	1.52	20.28	1.02	0.07	19.88	1.81	10.21	198	9



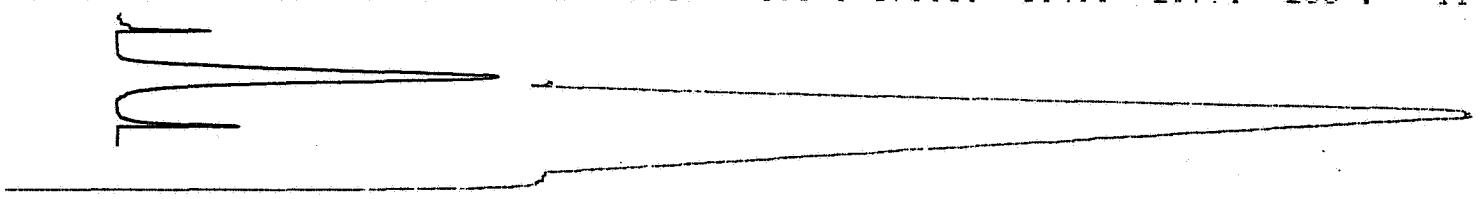
DATE: 12-01-90 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24937	84.0	432	0.55	6.96	0.40	0.07	17.40	0.62	3.54	196	11



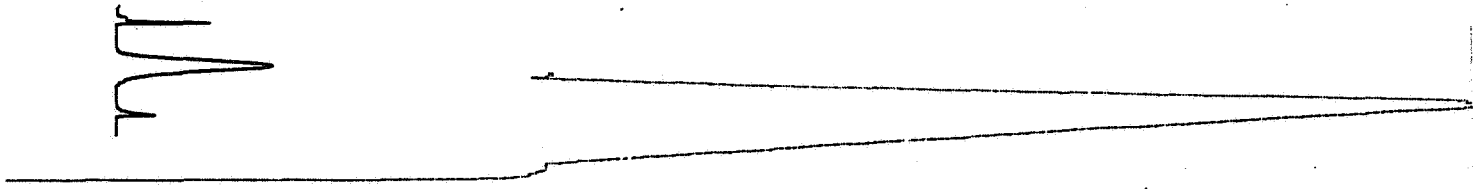
DATE: 12-01-90 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24938	85.6	430	0.43	5.56	0.31	0.07	17.93	0.49	2.77	200	11



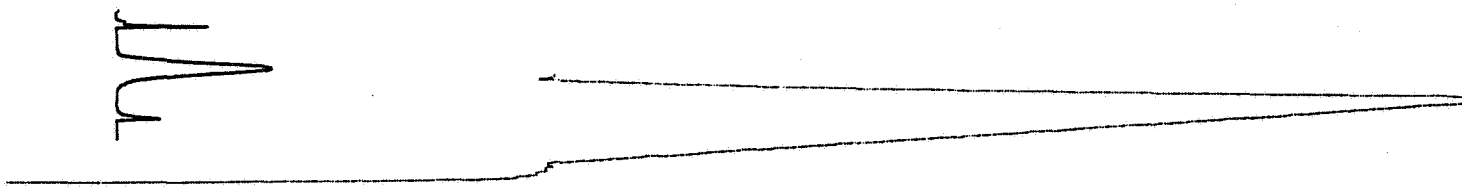
DATE: 12-01-90 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24939	100.2	432	0.14	1.98	0.22	0.07	9.00	0.17	1.38	143	15



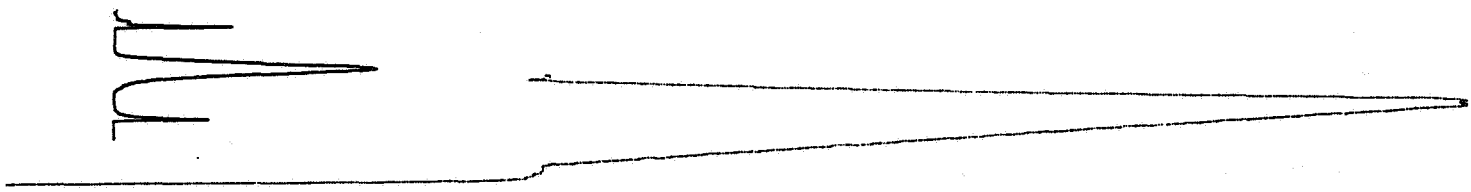
DATE: 12-01-90 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24940	100.0	432	0.16	2.00	0.18	0.07	11.11	0.18	1.27	157	14



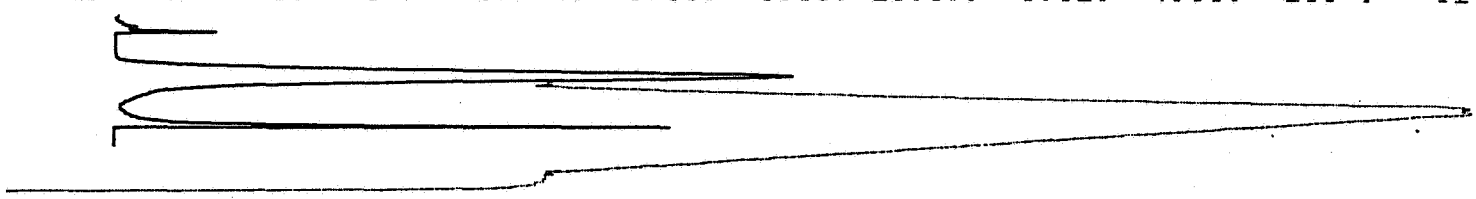
DATE: 12-01-90 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24941	98.5	435	0.29	3.20	0.35	0.08	9.14	0.29	1.90	168	18



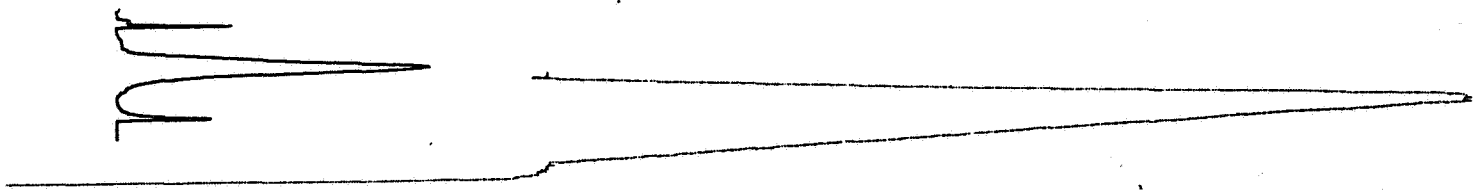
DATE: 12-01-90 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24942	72.2	436	1.93	10.40	0.51	0.16	20.39	1.02	4.10	253	12



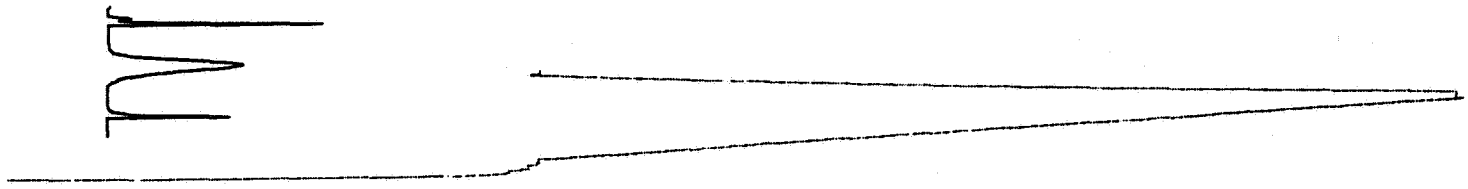
DATE: 12-01-90 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24943	73.9	437	0.50	5.87	0.40	0.08	14.67	0.53	4.05	144	9



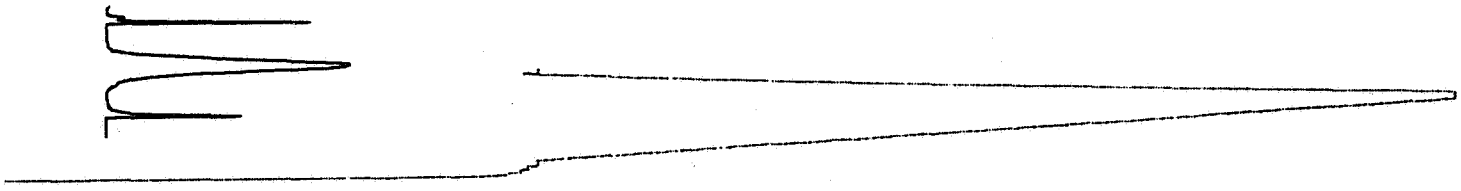
DATE: 12-01-90 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24948	100.0	435	0.27	1.72	0.58	0.14	2.96	0.16	1.53	112	37



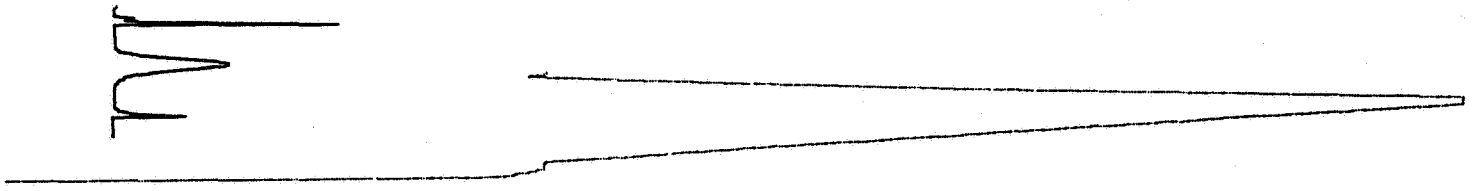
DATE: 12-01-90 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24949	95.9	432	0.39	3.30	0.55	0.11	6.00	0.30	1.78	185	30



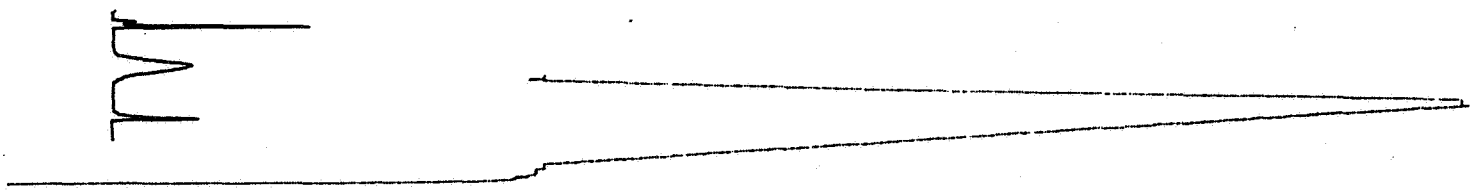
DATE: 12-01-90 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24950	98.4	438	0.21	1.58	0.61	0.12	2.59	0.14	1.41	112	43



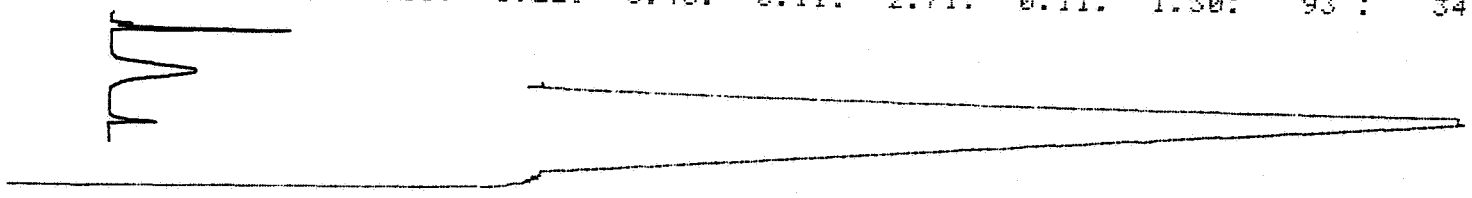
DATE: 12-01-90 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24951	100.0	440	0.21	1.04	0.53	0.17	1.96	0.10	1.34	77	39



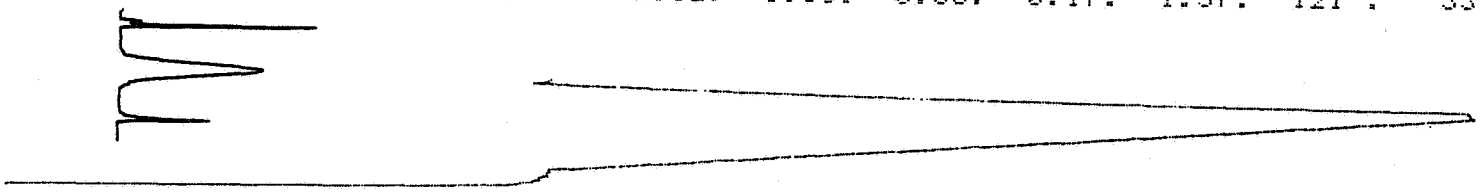
DATE: 12-01-90 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24952	99.5	436	0.15	1.22	0.45	0.11	2.71	0.11	1.30	93	34



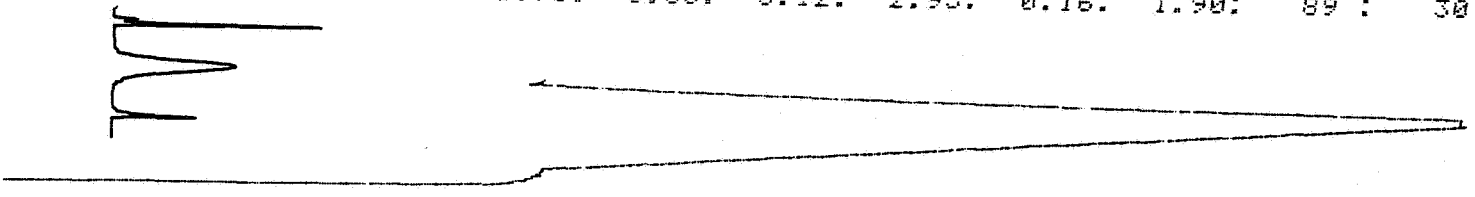
DATE: 12-01-90 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24953	99.1	432	0.22	1.90	0.52	0.10	3.65	0.17	1.57	121	33



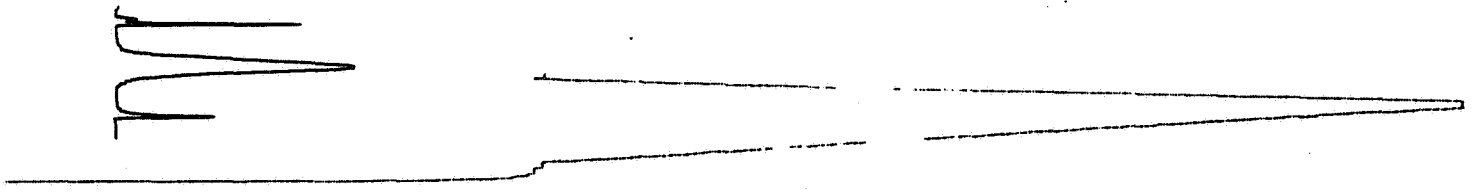
DATE: 12-01-90 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24954	96.9	437	0.24	1.70	0.58	0.12	2.93	0.16	1.90	89	30



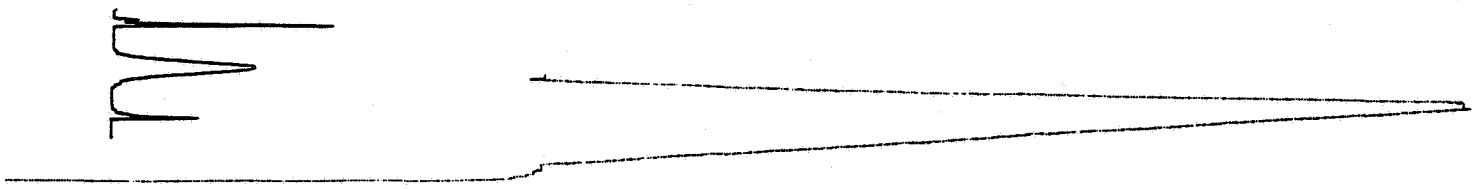
DATE: 12-01-90 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24955	92.3	433	0.30	3.40	0.56	0.08	6.07	0.30	2.40	141	23



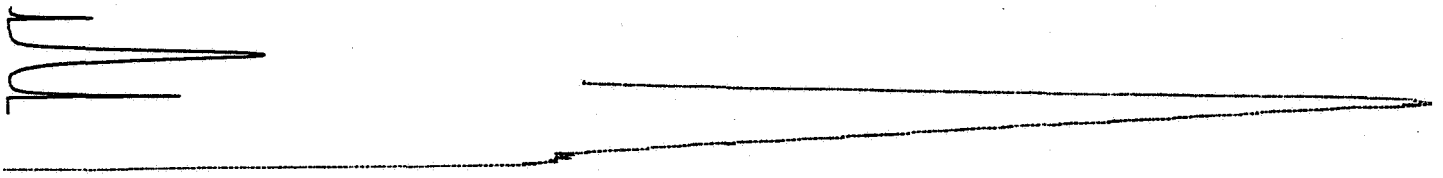
DATE: 12-01-90 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24956	99.0	432	0.24	1.94	0.62	0.11	3.12	0.18	1.99	97	31



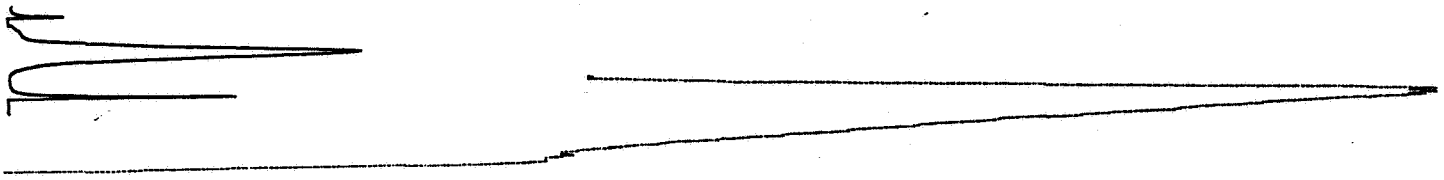
DATE: 12-01-90 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24957	100.0	431	0.31	2.29	0.33	0.12	6.93	0.21	1.88	121	17



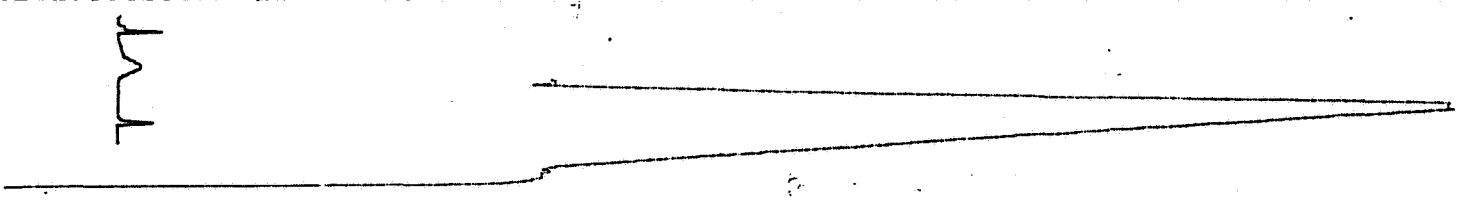
DATE: 12-01-90 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24958	82.2	438	0.42	4.03	0.26	0.09	15.50	0.37	2.96	136	8



DATE: 08-12-89 ANALYSIS CYCLE : 1 SCALE = 1/32

DEPTH	QTY	TMAX	S 1	S 2	S 3	P I	S2/S3	P C	TOC	H I	O I
24258	100.1	456	0.09	0.43	0.04	0.17	10.75	0.04	1.33	32	3



société nationale
elf aquitaine (production)

EP/S/EXP/Lab.n° 91/120RP

Pau, May 1991

WELL 25/3-1
(NORWAY)

Follow-up organic geochemical study of the Jurassic

Author : K. LE TRAN

adresse postale : ☐ tour Elf - Cedex 45 92078 Paris La Défense
☐ Pau - 64018 Pau Cedex
☐ Lacq - bp 22 64170 Lacq
☐ Boussens - 31360 Boussens

téléphone : - 33 - (1) 47 44 45 46
- 33 - 59 83 40 00
- 33 - 59 92 22 22
- 33 - 61 97 80 00

télex : elfa 615 400 f
petra 560 804 f
petra 560 053 f
snea 530 385 f

Imp. 8312 SNEA(P) - RGM 953 006 006

TABLES

LEGENDS OF TABLES AND FIGURES OF ORGANIC INVENTORY ANALYSES : ABBREVIATIONS, UNITS AND CUT OFFS

SAMPLE TYPE : ND=unwashed cuttings; DE=cuttings washed on site..... [the ND are washed and the DE are washed anew in the laboratory]
CA=core; CL=sidewall core; TE=outcrop; BO=mud; XX=other or undetermined
IR : Insoluble residue after HCl attack (% weight of rock)

TOC : Total organic carbon (% weight of rock) ..... [measured with Rock Eval+TOC analyser or LECO]
IOC : Insoluble organic carbon in chloroform (% weight of rock) Id.
OC : Organic carbon (total or insoluble)

X-RAY DIFF. : ALBite ; ORThoclase ; ANHydrite (or chlorite/kaolinite) ; QuaRtZ ; CALcite ; DOLomite ; SIDerite ; uNDosed (% weight of rock)

ROCK EVAL ANALYSIS

Carried out on : ..... [generally not performed if OC< .3%]
RT : Total rock
RI_RT : Insoluble residue after HCl attack
RE : Rock extracted with chloroform
RI_RE : Rock extracted with chloroform, and after HCl attack

Measured parameters : .... [# : result not given because meaningless; <S : lower than the detection threshold]
Tmax : Temperature of S2 peak (°C) ..... [meaningless if S2 small]
S1 : Free hydrocarbons in the rock (mgHC/g of rock) ..... [meaningless if the analysis is performed on the extracted rock]
S2 : Hydrocarbons yielded by pyrolysis (mgHC/g of rock)
S3 : CO2 yielded by pyrolysis (mg CO2/g of rock)

Calculated parameters :
PI : Production Index= S1/(S1+S2) ..... [# : meaningless if S1 and S2 < .2]
HI : Hydrogen Index = (S2/OC)x100 (mg HC/g OC)
OI : Oxygen Index = (S3/OC)x100 (mg CO2/g OC) .. [to be used with caution for analyses carried out on RT or RE if OC < 2%;
IO>170 : mineral contribution to S3 peak]

EXTRACT ANALYSIS

EOM: extractable organic matter with chloroform (% per weight of rock) ..... [<S if lower than .01 %]
Normalized composition of the extract (% EOM) .....[generally not performed if EOM < .03 %]
SAT: Saturated hydrocarbons
ARO: Aromatic hydrocarbons
POL: Polar compounds (Resins+Asphaltenes)
HC: SAT+ARO (mg HC/g of rock)

Q1: Contaminations or cavings, affecting the Rock Eval and TOC analyses | I=high; M=medium; F=low;
Q2: Contaminations or cavings, affecting the organic extract | N=null or not detected; U=unknown

TABLE: 1 25/3-1

Follow-up

DESCRIPTION OF ANALYSED SAMPLES AND ORGANIC CARBON CONTENT

LAB. REF.	SAMPLE TYPE	DEPTHS Metres		IR %	TOC %	IOC %	LITHOLOGY
B24259	CL	2960.00		65.0	.66		SHALE GREY, CALCAREOUS
B24260	CL	2980.00		77.7	.51		SHALE GREY, CALCAREOUS
B24261	CL	3020.00		92.8	8.64		SHALE DARK GREY, SILTY
B24262	CL	3025.00		92.8	6.85		SHALE DARK GREY, SILTY
B24263	CL	3033.80		93.1	7.92		SHALE DARK GREY, SILTY
B24264	CL	3041.00		92.2	6.86		SHALE DARK GREY, SILTY
B24492	ND	3050.00	3060.00	88.1	7.23		SHALE DARK GREY, SILTY
B24265	CL	3066.80		88.5	8.81		SHALE DARK GREY, SILTY
B24493	ND	3075.00	3080.00	70.8	4.67		SHALE DARK GREY, SILTY, CALCAREOUS
B24266	CL	3087.00		88.2	2.06		SHALE DARK GREY, SILTY
B24494	ND	3090.00	3100.00	61.0	3.32		SHALE DARK GREY, SILTY, CALCAREOUS
B24267	CL	3096.00		94.6	4.76		SHALE DARK GREY, SILTY, SL. MICROMICACEOUS
B24256	CA01	3114.90		93.0	6.93		SHALE DARK GREY, SILTY, MICACEOUS
B24257	CA01	3117.51		99.5	75.23		COAL
B24495	ND	3185.00		97.9	59.99		COAL
B24496	ND	3205.00	3210.00	97.9	63.28		COAL
B24497	ND	3220.01		96.4	41.94		COAL, INTERBEDDED SILTY SHALE AND SANDSTONE
B24498	ND	3232.51		98.4	66.45		COAL
B24499	ND	3240.00		97.9	56.83		COAL
B24500	ND	3242.50		93.9	32.37		COAL, INTERBEDDED SILTY SHALE AND SANDSTONE
B24501	ND	3245.00	3250.00	95.2	27.57		COAL, INTERBEDDED SILTY SHALE AND SANDSTONE
B24502	ND	3277.50	3280.00	84.0	3.89		SHALE DARK GREY, INTERBEDDED SANDSTONE
B24503	ND	3290.00		86.7	12.06		SHALE DARK GREY, INTERBEDDED SANDSTONE
B24504	ND	3297.50	3300.00	83.2	4.51		SHALE DARK GREY, INTERBEDDED SANDSTONE
B24505	ND	3305.00	3310.00	93.0	9.49		SHALE DARK GREY, INTERBEDDED SANDSTONE
B24937	ND	3342.50	3347.50	72.1	2.55		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24938	ND	3375.00	3380.00	84.8	2.35		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24939	ND	3397.50	3400.00	79.9	1.10		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24940	ND	3422.50	3425.00	87.0	1.10		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24941	ND	3447.50	3450.00	81.4	1.55		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24942	ND	3472.50	3475.00	83.7	3.43		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24943	ND	3497.50	3500.00	82.1	3.33		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24944	ND	3522.50	3525.00	78.3	2.41		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24945	ND	3550.00	3552.50	82.2	2.09		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24946	ND	3575.00	3577.50	84.8	1.90		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24947	ND	3600.00	3602.50	84.6	1.47		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24948	ND	3625.00	3627.50	78.3	1.20		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24949	ND	3650.00	3652.50	82.7	1.47		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24950	ND	3675.00	3677.50	82.2	1.16		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24951	ND	3700.00	3702.50	84.7	1.13		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24952	ND	3725.00	3727.50	84.0	1.09		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24953	ND	3750.00	3752.50	83.8	1.31		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24954	ND	3775.00	3777.50	79.5	1.51		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24955	ND	3800.00	3802.50	78.9	1.89		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24956	ND	3825.00	3830.00	76.3	1.52		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24957	ND	3850.00	3852.50	77.8	1.46		SHALE GREY-DARK GREY, SILTY, MICROMICACEOUS
B24258	CA02	3873.70		93.1	1.24		SHALE GREY-DARK GREY, SILTY, MICACEOUS
B24958	ND	3882.00	3885.00	88.9	2.63		SHALE GREY-DARK GREY, SILTY, MICACEOUS

TABLE: 2 25/3-1

RESULTS OF ORGANIC INVENTORY ANALYSIS

SAMPLE TYPE	DEPTHS Metres		ROCK-EVAL Q1	on	Tmax	S1	S2	S3	PI	HI	OI	TOC	Follow up	IATROSCAN Q2	EOM	100(EOM/TOC)	SAT	ARO	POL	SAT/ARO	HC
CL	2960.00		N	RI_RT	#	.03	.03	.18	#	4	27	.66		N	.010	1.5					
CL	2980.00		N	RI_RT	#	.01	.02	.17	#	5	33	.51		N	<S						
CL	3020.00		N	RI_RT	433	3.59	37.57	.89	.09	435	10	8.64	*	N	.900	10.4	32.8	39.5	27.7	.83	6.50
CL	3025.00		N	RI_RT	431	2.99	22.94	.61	.12	335	9	6.85		N	.821	12.0	30.2	45.3	24.5	.67	6.20
CL	3033.80		N	RI_RT	432	3.39	31.55	.74	.10	398	9	7.92		N	.873	11.0	29.7	41.2	29.1	.72	6.19
CL	3041.00		N	RI_RT	432	2.66	27.43	.74	.09	400	11	6.86	*	N	.572	8.3	27.0	40.8	32.3	.66	3.88
ND	3050.00	3060.00	N	RI_RT	432	1.51	19.40	.75	.07	268	10	7.23		N	.403	5.6	18.1	33.0	49.0	.55	2.06
CL	3066.80		N	RI_RT	432	2.09	24.70	.92	.08	280	10	8.81	*	N	.525	6.0	23.1	45.8	31.1	.51	3.62
ND	3075.00	3080.00	N	RI_RT	432	.59	8.15	.54	.07	175	12	4.67		N	.176	3.8	16.7	30.0	53.3	.56	.82
CL	3087.00		N	RI_RT	428	.08	1.19	.33	.06	58	16	2.06		N	.093	4.5	12.9	46.1	40.9	.28	.55
ND	3090.00	3100.00	N	RI_RT	433	.85	9.75	.24	.08	293	7	3.32		N	.261	7.8	26.2	37.8	36.0	.69	1.67
CL	3096.00		N	RI_RT	431	1.53	17.17	.38	.08	361	8	4.76	*	N	.387	8.1	32.3	48.9	18.8	.66	3.14
CA01	3114.90		N	RI_RT	435	1.28	14.26	.45	.08	206	6	6.93		N	.328	4.7	6.6	38.5	54.9	.17	1.48
CA01	3117.51		N	RI_RT	432	35.70	270.48	2.05	.12	360	3	75.23	*	N	1.410	1.9	7.2	38.8	54.0	.18	6.49
ND	3185.00		N	RI_RT	438	21.90	217.73	1.39	.09	363	2	59.99		N	1.386	2.3	6.2	33.6	60.2	.18	5.51
ND	3205.00	3210.00	N	RI_RT	439	14.44	172.12	1.58	.08	272	2	63.28		N	1.160	1.8	7.9	40.8	51.3	.19	5.65
ND	3220.01		N	RI_RT	439	7.86	82.64	1.26	.09	197	3	41.94		N	.966	2.3	6.9	43.3	49.8	.16	4.85
ND	3232.51		N	RI_RT	443	15.59	169.78	1.75	.08	256	3	66.45		N	1.194	1.8	7.5	42.5	50.1	.18	5.97
ND	3240.00		N	RI_RT	440	10.95	132.82	1.51	.08	234	3	56.83		N	1.082	1.9	6.6	45.3	48.1	.14	5.62
ND	3242.50		N	RI_RT	441	6.14	71.57	.81	.08	221	2	32.37		N	.744	2.3	7.4	40.8	51.8	.18	3.58
ND	3245.00	3250.00	N	RI_RT	440	5.43	61.28	.75	.08	222	3	27.57		N	.586	2.1	7.6	39.8	52.7	.19	2.77
ND	3277.50	3280.00	N	RI_RT	435	.65	7.67	.32	.08	197	8	3.89		N	.207	5.3	21.6	40.7	37.8	.53	1.29
ND	3290.00		N	RI_RT	438	1.81	25.42	1.14	.07	211	9	12.06		N	.518	4.3	9.0	40.0	51.0	.22	2.54
ND	3297.50	3300.00	N	RI_RT	436	.72	8.58	.37	.08	190	8	4.51	*	N	.249	5.5	16.3	38.9	44.8	.42	1.38
ND	3305.00	3310.00	N	RI_RT	440	1.41	18.86	.95	.07	199	10	9.49		N	.376	4.0	12.1	39.9	47.9	.30	1.96
ND	3342.50	3347.50	N	RI_RT	432	.40	5.01	.29	.07	197	11	2.55	*	N	.132	5.2	20.7	33.3	46.0	.62	.71
ND	3375.00	3380.00	N	RI_RT	430	.36	4.71	.26	.07	201	11	2.35		N	.133	5.7	19.7	34.5	45.8	.57	.72
ND	3397.50	3400.00	N	RI_RT	432	.11	1.58	.18	.07	143	16	1.10		N	.065	5.9	19.8	31.3	48.9	.63	.33
ND	3422.50	3425.00	N	RI_RT	432	.14	1.74	.16	.07	157	14	1.10		N	.060	5.5	18.1	30.3	51.6	.60	.29
ND	3447.50	3450.00	N	RI_RT	435	.24	2.60	.28	.08	168	18	1.55		N	.095	6.1	25.2	32.7	42.2	.77	.55
ND	3472.50	3475.00	N	RI_RT	436	1.62	8.71	.43	.16	254	12	3.43	*	N	.448	13.1	30.9	40.7	28.5	.76	3.20
ND	3497.50	3500.00	N	RI_RT	437	.41	4.82	.33	.08	145	10	3.33		N	.137	4.1	22.5	32.9	44.6	.68	.76
ND	3522.50	3525.00	N	RI_RT	435	.38	3.94	.36	.09	163	15	2.41		N	.136	5.6	21.2	35.7	43.2	.59	.77
ND	3550.00	3552.50	N	RI_RT	431	.32	2.83	.40	.10	135	19	2.09		N	.135	6.5	22.5	32.7	44.7	.69	.75
ND	3575.00	3577.50	N	RI_RT	433	.19	1.71	.53	.10	90	28	1.90		N	.102	5.4	23.4	34.4	42.2	.68	.59
ND	3600.00	3602.50	N	RI_RT	438	.15	1.26	.58	.11	86	40	1.47		N	.083	5.7	23.8	35.8	40.3	.66	.50
ND	3625.00	3627.50	N	RI_RT	435	.21	1.35	.45	.14	112	38	1.20		N	.089	7.4	31.4	33.9	34.7	.92	.58
ND	3650.00	3652.50	N	RI_RT	432	.32	2.73	.45	.11	185	31	1.47		N	.117	7.9	28.9	33.9	37.2	.85	.73
ND	3675.00	3677.50	N	RI_RT	438	.17	1.30	.50	.12	112	43	1.16		N	.083	7.1	26.0	34.8	39.3	.75	.50
ND	3700.00	3702.50	N	RI_RT	440	.18	.88	.45	.17	78	40	1.13		N	.086	7.6	28.8	36.0	35.3	.80	.56
ND	3725.00	3727.50	N	RI_RT	436	.13	1.03	.38	.11	94	35	1.09		N	.070	6.4	25.4	31.6	43.0	.80	.40
ND	3750.00	3752.50	N	RI_RT	432	.18	1.59	.44	.10	121	33	1.31		N	.085	6.5	24.6	34.2	41.2	.72	.50
ND	3775.00	3777.50	N	RI_RT	437	.19	1.35	.46	.12	89	31	1.51		N	.089	5.9	30.0	34.6	35.4	.87	.58
ND	3800.00	3802.50	N	RI_RT	433	.24	2.68	.44	.08	142	23	1.89		N	.106	5.6	29.8	32.5	37.7	.91	.66
ND	3825.00	3830.00	N	RI_RT	432	.18	1.48	.47	.11	97	31	1.52		N	.090	5.9	28.3	34.3	37.4	.82	.57
ND	3850.00	3852.50	N	RI_RT	431	.24	1.78	.26	.12	122	18	1.46		N	.086	5.9	29.9	30.3	39.8	.99	.52
CA02	3873.70		N	RI_RT	#	.08	.40	.04	.17	32	3	1.24		N	.028	2.3					
ND	3882.00	3885.00	N	RI_RT	438	.37	3.58	.23	.09	136	9	2.63		N	.107	4.1	27.9	33.8	38.3	.83	.66

TABLE 3

25/3-1

GAS CHROMATOGRAPHY AND CARBON ISOTOPE RATIOS OF ROCK EXTRACTS

		GAS CHROMATOGRAPHY DATA										CARBON ISOTOPE DATA (per mil PDB)				
		SATURATED HC				AROMATIC HC			SULFUR COMPOUNDS							
DEPTH (m)	ST	Pr/ nC17	Ph/ nC18	Pr/Ph	A/B	MPI 1	MPI 3	MP/ P	MDBT 1	MDBT 3	MDBT 4/1	TOTAL EXTR.	SAT	ARO	RES	ASP
3020	CL	1.63	1.05	1.83	1.55	.68	.82	2.24	.49	.57	.43	-31.2	-31.9	-31.2	-30.7	~
3041	CL	1.18	.96	1.39	1.23	.69	.77	2.65	.60	.70	.57	-31.5	-32.5	-31.5	-30.9	-30.5
3066.8	CL	2.39	1.20	2.28	1.99	.57	.61	2.60	.51	.63	.45	-26.8	-28.5	-26.7	-26.5	-25.8
3096	CL	.98	.50	2.40	1.98	.50	.62	1.92	.62	.83	.73	-28.3	-29.6	-27.9	-27.5	-26.8
3117.51	CA	26.84	3.16	11.01	8.49	.44	.65	1.33	.56	1.37	2.31	-25.3	-27.1	-25.3	-25.2	-25.0
3297.5	ND	2.55	.97	2.91	2.64	.49	.63	1.74	.64	.85	.75	-27.7	-30.4	-27.9	-27.5	-26.3
3342.5	ND	1.89	.93	2.31	2.03	.53	.69	1.76	.56	.74	.59	-28.2	-30.7	-28.8	-27.3	-26.7
3472.5	ND	.98	.70	1.52	1.41	.49	.57	2.14	4.34	5.16	9.35	-31.6	-32.7	-31.5	-31.2	-30.5

ST=Sample Type (CA=core; CL=sidewall core; ND=cuttings)
Pr=Pristane; Ph=Phytane; A=Pristane/n-C17; B=Phytane/n-C18
MPI1=1.5(2-MP+3-MP)/(P+1-MP+9-MP)
MPI3=(2-MP+3-MP)/(1-MP+9-MP)
MP/P=Sum of metyhylphenanthrenes/phenanthrene
DBT=dibenzothiophenes; MDBT=methyldibenzothiophenes
MDBT1=1.5(4-MDBT+2,3-MDBT)/(DBT+2,3-MDBT+1-MDBT)
MDBT3=(4-MDBT+2,3-MDBT)/(2,3-MDBT+1-MDBT)
MDBT4/1=4-MDBT/1-MDBT

S N E A (P) Organic Geochemistry
Computerized GC/MS Analytical Report on Steranes and Terpanes nr. 1990

Sample..... :25/3-1 B24261. ST NO
Well Depth ..... :3020. to 3020. (Meters)
Particuliarities II.. :/
Acquisition File Name :/ Mag tape /
Submitted by..... :KT april 25. , 1990.
Particuliarities I... :CL

STERANES	Areas	TERPANES	Areas
C21 Sterane.....	4658.	C23 tricyclic.....	9883.
C22 4-Methyl Sterane	826.	C24 tetracyclic.....	3196.
C22 Sterane.....	2705.	Ts.....	11286.
C27 S Diasterane....	28685.	Tm.....	18230.
C27 aa S Sterane....	27807.	29 ab Hopane.....	37331.
C27 bb R Sterane....	15117.	30 ab Hopane.....	66843.
C27 bb S Sterane....	15117.	30 ba Hopane.....	18230.
C27 aa R Sterane....	39956.	31 ab S Homohopane..	31685.
C29 aa S Sterane....	19578.	31 ab R Homohopane..	24306.
C29 bb R Sterane....	16237.	32 ab S Homohopane..	21782.
C29 bb S Sterane....	11865.	32 ab R Homohopane..	16362.
C29 aa R Sterane....	31388.	TOTAL TERPANES	741204.
TOTAL STERANES	685689.		

OPTIONAL ANALYSIS	Areas	OPTIONAL ANALYSIS	Areas
C30 tricyclic,22 S..	4340.	C35 ab S Homohopane.	nd
C30 tricyclic,22 R..	3472.	C35 ab R Homohopane.	nd
29 Desmethyl Hopane.	ns		
C28 Bisnorhopane....	ns		
C29/5 (RT.> 29 ab)..	20834.		
18 a(H) Oleanane....	ns	X(30/5)	6076.
Gammacerane.....	ns	nC31	77839.
C33 ab S Homohopane.	nd	C27bb	36308.
C33 ab R Homohopane.	nd	C28bb	34807.
C35 Hexacyclic.....	ns	C29bb	31486.

RESULTS :

27 bb S / 27 aa R ..	0.37	C29 DHop / C29 Hop .	v. low.
27 aa S / 27 aa R --	0.69	C28 BNHop / C29 Hop-	v. low.
27 S dia / 27 aa R .	0.71	C29/5 / C29 Hop.....	0.55
22 4-Me st / 27 aa R	0.02	18 aH Olean/C30 Hop.	v. low.
% 20 S C27	43.80	Gammacerane/C30 Hop.	v. low.
% bb C27----------	30.85	30/3(R&S) / C29 Hop-	0.20
		30/3(R&S) / 23/3....	0.79
29 bb S / 29 aa R...	0.37	2.35Hex/C35Hop(R&S).	N / A
29 aa S / 29 aa R...	0.62	C35H(R&S)/C33H(R&S).	N / A
27 S dia / 29 aa R..	0.91	29+30Hop/C35 H(R&S).	N / A
22 4-Me st / 29 aa R	0.02		
% 20 S C29	39.76		
% bb C29 ----------	35.54		
21 st / 22 st	1.72		
22 4-Me st / 22 st--	0.30		
		X/29H	0.16
29 H / C30 H	0.55	nC31/C30H	1.16
Tm / Ts ----------	1.61	%NC31/100	0.05
23/3 / 24/4	3.09	%ST/100	0.45
% 22 S C31 ----------	56.58	%TT/100	0.49
% 22 S C32	57.10	%27ST/100	0.35
ba / ab ----- X 100 -	27.27	%28/100	0.33
		%29/100	0.30
23/3 / 21 st	2.12	27-30H/29ST	1.69
TT / ST ----------	1.08	29bbR/29aaR	0.51

S N E A (P) Organic Geochemistry
Computerized GC/MS Analytical Report on Steranes and Terpanes nr. 1992

Sample..... :25/3-1 B24264. ST NO
Well Depth ..... :3041.00 to 3041.00 M (Meters)
Particuliarities II.. :/
Acquisition File Name :/ Mag tape /
Submitted by..... :KT april 25. , 1990.
Particuliarities I... :CL

S T E R A N E S	Areas	T E R P A N E S	Areas
C21 Sterane.....	14262.	C23 tricyclic.....	9452.
C22 4-Methyl Sterane	2364.	C24 tetracyclic.....	4232.
C22 Sterane.....	8445.	Ts.....	8863.
C27 S Diasterane....	27594.	Tm.....	17726.
C27 aa S Sterane....	18227.	29 ab Hopane.....	35463.
C27 bb R Sterane....	14834.	30 ab Hopane.....	61233.
C27 bb S Sterane....	10809.	30 ba Hopane.....	12891.
C27 aa R Sterane....	23738.	31 ab S Homohopane..	33839.
C29 aa S Sterane....	12381.	31 ab R Homohopane..	24976.
C29 bb R Sterane....	10060.	32 ab S Homohopane..	22559.
C29 bb S Sterane....	9286.	32 ab R Homohopane..	16114.
C29 aa R Sterane....	18830.	TOTAL TERPANES	651027.
TOTAL STERANES	542756.		

OPTIONAL ANALYSIS	Areas	OPTIONAL ANALYSIS	Areas
C30 tricyclic,22 S..	ns	C35 ab S Homohopane.	nd
C30 tricyclic,22 R..	ns	C35 ab R Homohopane.	nd
29 Desmethyl Hopane.	ns		
C28 Bisnorhopane....	37062.		
C29/5 (RT.> 29 ab)..	15308.		
18 a(H) Oleanane....	ns	X(30/5)	6445.
Gammacerane.....	ns	nC31	54408.
C33 ab S Homohopane.	nd	C27bb	28443.
C33 ab R Homohopane.	nd	C28bb	24436.
C35 Hexacyclic.....	ns	C29bb	23848.

RESULTS :

27 bb S / 27 aa R ..	0.45	C29 DHop / C29 Hop .	v. low.
27 aa S / 27 aa R --	0.76	C28 BNHop / C29 Hop-	1.04
27 S dia / 27 aa R .	1.16	C29/5 / C29 Hop.....	0.43
22 4-Me st / 27 aa R	0.09	18 aH Olean/C30 Hop.	v. low.
% 20 S C27	42.94	Gammacerane/C30 Hop.	v. low.
% bb C27----------	37.92	30/3(R&S) / C29 Hop-	v. low.
		30/3(R&S) / 23/3. ...	v. low.
29 bb S / 29 aa R...	0.49	2.35Hex/C35Hop(R&S).	N / A
29 aa S / 29 aa R...	0.65	C35H(R&S)/C33H(R&S).	N / A
27 S dia / 29 aa R..	1.46	29+30Hop/C35 H(R&S).	N / A
22 4-Me st / 29 aa R	0.12		
% 20 S C29	42.85		
% bb C29 ----------	38.26		
21 st / 22 st	1.68		
22 4-Me st / 22 st--	0.27		
		X/29H	0.18
29 H / C30 H	0.57	nC31/C30H	0.88
Tm / Ts ----------	1.99	%NC31/100	0.04
23/3 / 24/4	2.23	%ST/100	0.43
% 22 S C31 ----------	57.53	%TT/100	0.52
% 22 S C32	58.33	%27ST/100	0.37
ba / ab ----- X 100 -	21.05	%28/100	0.31
		%29/100	0.31
23/3 / 21 st	0.66	27-30H/29ST	2.43
TT / ST ----------	1.19	29bbR/29aaR	0.53

S N E A (P) Organic Geochemistry
Computerized GC/MS Analytical Report on Steranes and Terpanes nr. 1993

Sample..... :25/3-1 B24265. ST NO
Well Depth ..... :3066.80 to 3066.80 (Meters)
Particuliarities II.. :/
Acquisition File Name :/ Mag tape /
Submitted by..... :KT april 25. , 1990.
Particuliarities I... :CL

S T E R A N E S	Areas	T E R P A N E S	Areas
C21 Sterane.....	6364.	C23 tricyclic.....	6798.
C22 4-Methyl Sterane	1060.	C24 tetracyclic.....	3754.
C22 Sterane.....	2386.	Ts.....	5395.
C27 S Diasterane....	32000.	Tm.....	21582.
C27 aa S Sterane....	11492.	29 ab Hopane.....	41815.
C27 bb R Sterane....	8725.	30 ab Hopane.....	53277.
C27 bb S Sterane....	8725.	30 ba Hopane.....	16185.
C27 aa R Sterane....	11918.	31 ab S Homohopane..	30348.
C29 aa S Sterane....	10297.	31 ab R Homohopane..	22255.
C29 bb R Sterane....	10297.	32 ab S Homohopane..	17534.
C29 bb S Sterane....	7610.	32 ab R Homohopane..	15511.
C29 aa R Sterane....	14327.	TOTAL TERPANES	679205.
TOTAL STERANES	401467.		

OPTIONAL ANALYSIS	Areas	OPTIONAL ANALYSIS	Areas
C30 tricyclic,22 S..	ns	C35 ab S Homohopane.	nd
C30 tricyclic,22 R..	ns	C35 ab R Homohopane.	nd
29 Desmethyl Hopane.	ns		
C28 Bisnorhopane....	97113.		
C29/5 (RT.> 29 ab)..	9441.		
18 a(H) Oleanane....	ns	X(30/5)	6744.
Gammacerane.....	ns	nC31	97876.
C33 ab S Homohopane.	nd	C27bb	23278.
C33 ab R Homohopane.	nd	C28bb	14098.
C35 Hexacyclic.....	ns	C29bb	22146.

RESULTS :

27 bb S / 27 aa R ..	0.73	C29 DHop / C29 Hop .	v. low.
27 aa S / 27 aa R --	0.96	C28 BNHop / C29 Hop-	2.32
27 S dia / 27 aa R .	2.68	C29/5 / C29 Hop.....	0.22
22 4-Me st / 27 aa R	0.08	18 aH Olean/C30 Hop.	v. low.
% 20 S C27	49.47	Gammacerane/C30 Hop.	v. low.
% bb C27----------	42.70	30/3(R&S) / C29 Hop-	v. low.
		30/3(R&S) / 23/3...	v. low.
29 bb S / 29 aa R...	0.53	2.35Hex/C35Hop(R&S).	N / A
29 aa S / 29 aa R...	0.71	C35H(R&S)/C33H(R&S).	N / A
27 S dia / 29 aa R..	2.23	29+30Hop/C35 H(R&S).	N / A
22 4-Me st / 29 aa R	0.07		
% 20 S C29	42.10		
% bb C29 ----------	42.10		
21 st / 22 st	2.66		
22 4-Me st / 22 st--	0.44		
		X/29H	0.16
29 H / C30 H	0.78	nC31/C30H	1.83
Tm / Ts ----------	4.00	%NC31/100	0.08
23/3 / 24/4	1.81	%ST/100	0.34
% 22 S C31 ----------	57.69	%TT/100	0.57
% 22 S C32	53.06	%27ST/100	0.39
ba / ab ----- X 100 -	30.37	%28/100	0.23
		%29/100	0.37
23/3 / 21 st	1.06	27-30H/29ST	2.87
TT / ST ----------	1.69	29bbR/29aaR	0.71

S N E A (P) Organic Geochemistry
Computerized GC/MS Analytical Report on Steranes and Terpanes nr. 1994

Sample..... :25/3-1 B24267. ST NO
Well Depth ..... :3096.00 to 3096.00 (Meters)
Particuliarities II.. :/
Acquisition File Name :/ Mag tape /
Submitted by..... :KT april 25. , 1990.
Particuliarities I... :CL

S T E R A N E S	Areas	T E R P A N E S	Areas
C21 Sterane.....	8078.	C23 tricyclic.....	7639.
C22 4-Methyl Sterane	nd	C24 tetracyclic.....	8141.
C22 Sterane.....	8667.	Ts.....	11495.
C27 S Diasterane....	31192.	Tm.....	29378.
C27 aa S Sterane....	22947.	29 ab Hopane.....	60034.
C27 bb R Sterane....	17433.	30 ab Hopane.....	98352.
C27 bb S Sterane....	17433.	30 ba Hopane.....	25546.
C27 aa R Sterane....	26772.	31 ab S Homohopane..	63865.
C29 aa S Sterane....	22515.	31 ab R Homohopane..	48537.
C29 bb R Sterane....	19138.	32 ab S Homohopane..	38319.
C29 bb S Sterane....	14072.	32 ab R Homohopane..	28100.
C29 aa R Sterane....	30396.	TOTAL TERPANES	979334.
TOTAL STERANES	641616.		

OPTIONAL ANALYSIS	Areas	OPTIONAL ANALYSIS	Areas
C30 tricyclic,22 S..	ns	C35 ab S Homohopane.	nd
C30 tricyclic,22 R..	ns	C35 ab R Homohopane.	nd
29 Desmethyl Hopane.	ns		
C28 Bisnorhopane....	ns		
C29/5 (RT.> 29 ab)..	22991.		
18 a(H) Oleanane....	ns	X(30/5)	11495.
Gammacerane.....	ns	nC31	237211.
C33 ab S Homohopane.	nd	C27bb	36228.
C33 ab R Homohopane.	nd	C28bb	18919.
C35 Hexacyclic.....	ns	C29bb	35143.

RESULTS :

27 bb S / 27 aa R ..	0.65	C29 DHop / C29 Hop .	v. low.
27 aa S / 27 aa R --	0.85	C28 BNHop / C29 Hop-	v. low.
27 S dia / 27 aa R .	1.16	C29/5 / C29 Hop.....	0.38
22 4-Me st / 27 aa R	N / A	18 aH Olean/C30 Hop.	v. low.
% 20 S C27	47.73	Gammacerane/C30 Hop.	v. low.
% bb C27----------	41.22	30/3(R&S) / C29 Hop-	v. low.
		30/3(R&S) / 23/3....	v. low.
29 bb S / 29 aa R...	0.46	2.35Hex/C35Hop(R&S).	N / A
29 aa S / 29 aa R...	0.74	C35H(R&S)/C33H(R&S).	N / A
27 S dia / 29 aa R..	1.02	29+30Hop/C35 H(R&S).	N / A
22 4-Me st / 29 aa R	N / A		
% 20 S C29	42.48		
% bb C29 ----------	38.56		
21 st / 22 st	0.93		
22 4-Me st / 22 st--	N / A		
		X/29H	0.19
29 H / C30 H	0.61	nC31/C30H	2.41
Tm / Ts ----------	2.55	%NC31/100	0.12
23/3 / 24/4	0.93	%ST/100	0.34
% 22 S C31 ----------	56.81	%TT/100	0.52
% 22 S C32	57.69	%27ST/100	0.40
ba / ab ----- X 100 -	25.97	%28/100	0.20
		%29/100	0.38
23/3 / 21 st	0.94	27-30H/29ST	2.31
TT / ST ----------	1.52	29bbR/29aaR	0.62

S N E A (P) — Organic Geochemistry
Computerized GC/MS Analytical Report on Steranes and Terpanes nr. 1989

Sample	:25/3-1	B24257. ST NO	
Well Depth	:3117.51	to 3117.51	(Meters)
Particuliarities II.	:/		
Acquisition File Name	:/	Mag tape /	
Submitted by	:KT	april 25. , 1990.	
Particuliarities I.	:CA-K1		

STERANES	Areas	TERPANES	Areas
C21 Sterane	ns	C23 tricyclic	ns
C22 4-Methyl Sterane	ns	C24 tetracyclic	ns
C22 Sterane	ns	Ts	ns
C27 S Diasterane	ns	Tm	77637.
C27 aa S Sterane	4732.	29 ab Hopane	116544.
C27 bb R Sterane	4140.	30 ab Hopane	129493.
C27 bb S Sterane	4140.	30 ba Hopane	56977.
C27 aa R Sterane	4732.	31 ab S Homohopane	94531.
C29 aa S Sterane	11464.	31 ab R Homohopane	64747.
C29 bb R Sterane	10228.	32 ab S Homohopane	55682.
C29 bb S Sterane	7054.	32 ab R Homohopane	38848.
C29 aa R Sterane	16227.	TOTAL TERPANES	1300280.
TOTAL STERANES	157970.		

OPTIONAL ANALYSIS	Areas	OPTIONAL ANALYSIS	Areas
C30 tricyclic,22 S	ns	C35 ab S Homohopane.	nd
C30 tricyclic,22 R	ns	C35 ab R Homohopane.	nd
29 Desmethyl Hopane.	ns		
C28 Bisnorhopane	207190.		
C29/5 (RT.> 29 ab)	ns		
18 a(H) Oleanane	ns	X(30/5)	7769.
Gammacerane	ns	nC31	90696.
C33 ab S Homohopane.	nd	C27bb	5000.
C33 ab R Homohopane.	nd	C28bb	3825.
C35 Hexacyclic	ns	C29bb	18097.

RESULTS :

27 bb S / 27 aa R	0.87	C29 DHop / C29 Hop	v. low.
27 aa S / 27 aa R	0.99	C28 BNHop / C29 Hop	1.77
27 S dia / 27 aa R	v. low.	C29/5 / C29 Hop	v. low.
22 4-Me st / 27 aa R	v. low.	18 aH Olean/C30 Hop.	v. low.
% 20 S C27	50.00	Gammacerane/C30 Hop.	v. low.
% bb C27	46.66	30/3(R&S) / C29 Hop	v. low.
		30/3(R&S) / 23/3	N / A
29 bb S / 29 aa R	0.43	2.35Hex/C35Hop(R&S).	N / A
29 aa S / 29 aa R	0.70	C35H(R&S)/C33H(R&S).	N / A
27 S dia / 29 aa R	v. low.	29+30Hop/C35 H(R&S).	N / A
22 4-Me st / 29 aa R	v. low.		
% 20 S C29	41.17		
% bb C29	38.42		
21 st / 22 st	N / A		
22 4-Me st / 22 st	N / A		
		X/29H	0.06
29 H / C30 H	0.90	nC31/C30H	0.70
Tm / Ts	v. high	%NC31/100	0.05
23/3 / 24/4	N / A	%ST/100	0.10
% 22 S C31	59.34	%TT/100	0.83
% 22 S C32	58.90	%27ST/100	0.18
ba / ab ----- X 100	43.99	%28/100	0.14
		%29/100	0.67
23/3 / 21 st	N / A	27-30H/29ST	7.19
TT / ST	8.23	29bbR/29aaR	0.63

S N E A (P) — Organic Geochemistry
Computerized GC/MS Analytical Report on Steranes and Terpanes nr. 1995

Sample	:25/3-1	B24504. ST NO	
Well Depth	:3297.50	to 3300.00	(Meters)
Particuliarities II	:/		
Acquisition File Name	:/	Mag tape /	
Submitted by	:KT	april 25. , 1990.	
Particuliarities I	:ND		

STERANES	Areas	TERPANES	Areas
C21 Sterane	5706.	C23 tricyclic	6351.
C22 4-Methyl Sterane	nd	C24 tetracyclic	5746.
C22 Sterane	2298.	Ts	6911.
C27 S Diasterane	17865.	Tm	35705.
C27 aa S Sterane	13684.	29 ab Hopane	66807.
C27 bb R Sterane	12000.	30 ab Hopane	89840.
C27 bb S Sterane	12000.	30 ba Hopane	24187.
C27 aa R Sterane	19227.	31 ab S Homohopane	50680.
C29 aa S Sterane	12342.	31 ab R Homohopane	36857.
C29 bb R Sterane	10939.	32 ab S Homohopane	29946.
C29 bb S Sterane	8134.	32 ab R Homohopane	21884.
C29 aa R Sterane	17391.	TOTAL TERPANES	817673.
TOTAL STERANES	369004.		

OPTIONAL ANALYSIS	Areas	OPTIONAL ANALYSIS	Areas
C30 tricyclic,22 S	ns	C35 ab S Homohopane.	nd
C30 tricyclic,22 R	ns	C35 ab R Homohopane.	nd
29 Desmethyl Hopane.	ns		
C28 Bisnorhopane	25921.		
C29/5 (RT.> 29 ab)	14000.		
18 a(H) Oleanane	ns	X(30/5)	8062.
Gammacerane	ns	nC31	111433.
C33 ab S Homohopane.	nd	C27bb	20823.
C33 ab R Homohopane.	nd	C28bb	16510.
C35 Hexacyclic	ns	C29bb	21537.

RESULTS :

27 bb S / 27 aa R	0.62	C29 DHop / C29 Hop	v. low.
27 aa S / 27 aa R	0.71	C28 BNHop / C29 Hop	0.38
27 S dia / 27 aa R	0.92	C29/5 / C29 Hop	0.20
22 4-Me st / 27 aa R	N / A	18 aH Olean/C30 Hop.	v. low.
% 20 S C27	45.13	Gammacerane/C30 Hop.	v. low.
% bb C27	42.17	30/3(R&S) / C29 Hop	v. low.
		30/3(R&S) / 23/3	v. low.
29 bb S / 29 aa R	0.46	2.35Hex/C35Hop(R&S).	N / A
29 aa S / 29 aa R	0.70	C35H(R&S)/C33H(R&S).	N / A
27 S dia / 29 aa R	1.02	29+30Hop/C35 H(R&S).	N / A
22 4-Me st / 29 aa R	N / A		
% 20 S C29	41.95		
% bb C29	39.07		
21 st / 22 st	2.48		
22 4-Me st / 22 st	N / A		
		X/29H	0.12
29 H / C30 H	0.74	nC31/C30H	1.24
Tm / Ts	5.16	%NC31/100	0.08
23/3 / 24/4	1.10	%ST/100	0.28
% 22 S C31	57.89	%TT/100	0.62
% 22 S C32	57.77	%27ST/100	0.35
ba / ab ----- X 100	26.92	%28/100	0.28
		%29/100	0.36
23/3 / 21 st	1.11	27-30H/29ST	4.08
TT / ST	2.21	29bbR/29aaR	0.62

S N E A (P) — Organic Geochemistry
Computerized GC/MS Analytical Report on Steranes and Terpanes nr. 1996

Sample. . . . . :25/3-1 B24937. ST NO
Well Depth . . . . . :3342.50 to 3347.50 (Meters)
Particuliarities II. . :/
Acquisition File Name :/ Mag tape /
Submitted by. . . . . :KT april 25. , 1990.
Particuliarities I. . . :ND

STERANES	Areas	TERPANES	Areas
C21 Sterane.	3228.	C23 tricyclic.	3691.
C22 4-Methyl Sterane	nd	C24 tetracyclic.	1945.
C22 Sterane.	1369.	Ts.	3302.
C27 S Diasterane. . . .	10954.	Tm.	16981.
C27 aa S Sterane. . . .	6719.	29 ab Hopane.	27360.
C27 bb R Sterane. . . .	4533.	30 ab Hopane.	36085.
C27 bb S Sterane. . . .	4533.	30 ba Hopane.	10141.
C27 aa R Sterane. . . .	7559.	31 ab S Homohopane. .	22405.
C29 aa S Sterane. . . .	4701.	31 ab R Homohopane. .	16509.
C29 bb R Sterane. . . .	4004.	32 ab S Homohopane. .	12736.
C29 bb S Sterane. . . .	2621.	32 ab R Homohopane. .	10377.
C29 aa R Sterane. . . .	6268.	TOTAL TERPANES	344259.
TOTAL STERANES	157351.		

OPTIONAL ANALYSIS	Areas	OPTIONAL ANALYSIS	Areas
C30 tricyclic,22 S. .	ns	C35 ab S Homohopane.	nd
C30 tricyclic,22 R. .	ns	C35 ab R Homohopane.	nd
29 Desmethyl Hopane.	ns		
C28 Bisnorhopane. . . .	16037.		
C29/5 (RT.> 29 ab). .	7547.		
18 a(H) Oleanane. . . .	ns	X(30/5)	3537.
Gammacerane.	ns	nC31	45980.
C33 ab S Homohopane.	nd	C27bb	9393.
C33 ab R Homohopane.	nd	C28bb	6487.
C35 Hexacyclic.	ns	C29bb	7791.

RESULTS :

27 bb S / 27 aa R . .	0.59	C29 DHop / C29 Hop .	v. low.
27 aa S / 27 aa R --	0.88	C28 BNHop / C29 Hop-	0.58
27 S dia / 27 aa R .	1.44	C29/5 / C29 Hop. . . .	0.27
22 4-Me st / 27 aa R	N / A	18 aH Olean/C30 Hop.	v. low.
% 20 S C27	48.20	Gammacerane/C30 Hop.	v. low.
% bb C27----------	38.83	30/3(R&S) / C29 Hop-	v. low.
		30/3(R&S) / 23/3. . .	v. low.
29 bb S / 29 aa R. . .	0.41	2.35Hex/C35Hop(R&S).	N / A
29 aa S / 29 aa R. . .	0.75	C35H(R&S)/C33H(R&S).	N / A
27 S dia / 29 aa R. .	1.74	29+30Hop/C35 H(R&S).	N / A
22 4-Me st / 29 aa R	N / A		
% 20 S C29	41.61		
% bb C29 ----------	37.65		
21 st / 22 st	2.35		
22 4-Me st / 22 st--	N / A		
		X/29H	0.12
29 H / C30 H	0.75	nC31/C30H	1.27
Tm / Ts ----------	5.14	%NC31/100	0.08
23/3 / 24/4	1.89	%ST/100	0.28
% 22 S C31 ----------	57.57	%TT/100	0.62
% 22 S C32	55.10	%27ST/100	0.39
ba / ab ----- X 100 -	28.10	%28/100	0.27
		%29/100	0.32
23/3 / 21 st	1.14	27-30H/29ST	4.75
TT / ST ----------	2.18	29bbR/29aaR	0.63

S N E A (P) — Organic Geochemistry
Computerized GC/MS Analytical Report on Steranes and Terpanes nr. 1991

Sample	:25/3-1	B24942. ST NO	
Well Depth	:3472.50	to 3475.00	(Meters)
Particuliarities II	:/		
Acquisition File Name	:/	Mag tape /	
Submitted by	:KT	april 25. , 1990.	
Particuliarities I	:ND		

STERANES	Areas	TERPANES	Areas
C21 Sterane	6179.	C23 tricyclic	9567.
C22 4-Methyl Sterane	1437.	C24 tetracyclic	4580.
C22 Sterane	2857.	Ts	13387.
C27 S Diasterane	14005.	Tm	11024.
C27 aa S Sterane	7641.	29 ab Hopane	26774.
C27 bb R Sterane	11178.	30 ab Hopane	59062.
C27 bb S Sterane	11178.	30 ba Hopane	11025.
C27 aa R Sterane	6368.	31 ab S Homohopane	32681.
C29 aa S Sterane	7240.	31 ab R Homohopane	22837.
C29 bb R Sterane	12283.	32 ab S Homohopane	24018.
C29 bb S Sterane	11119.	32 ab R Homohopane	16931.
C29 aa R Sterane	7887.	TOTAL TERPANES	569435.
TOTAL STERANES	278293.		

OPTIONAL ANALYSIS	Areas	OPTIONAL ANALYSIS	Areas
C30 tricyclic,22 S	3150.	C35 ab S Homohopane.	nd
C30 tricyclic,22 R	2362.	C35 ab R Homohopane.	nd
29 Desmethyl Hopane.	ns		
C28 Bisnorhopane	5512.		
C29/5 (RT.> 29 ab)	17325.		
18 a(H) Oleanane	ns	X(30/5)	10237.
Gammacerane	ns	nC31	109294.
C33 ab S Homohopane.	nd	C27bb	24409.
C33 ab R Homohopane.	nd	C28bb	14447.
C35 Hexacyclic	ns	C29bb	28836.

RESULTS :

27 bb S / 27 aa R	1.75	C29 DHop / C29 Hop	v. low.
27 aa S / 27 aa R	1.19	C28 BNHop / C29 Hop	0.20
27 S dia / 27 aa R	2.19	C29/5 / C29 Hop	0.64
22 4-Me st / 27 aa R	0.22	18 aH Olean/C30 Hop.	v. low.
% 20 S C27	51.75	Gammacerane/C30 Hop.	v. low.
% bb C27	61.47	30/3(R&S) / C29 Hop	0.20
		30/3(R&S) / 23/3	0.57
29 bb S / 29 aa R	1.40	2.35Hex/C35Hop(R&S).	N / A
29 aa S / 29 aa R	0.91	C35H(R&S)/C33H(R&S).	N / A
27 S dia / 29 aa R	1.77	29+30Hop/C35 H(R&S).	N / A
22 4-Me st / 29 aa R	0.18		
% 20 S C29	47.64		
% bb C29	60.73		
21 st / 22 st	2.16		
22 4-Me st / 22 st	0.50		
		X/29H	0.38
29 H / C30 H	0.45	nC31/C30H	1.85
Tm / Ts	0.82	%NC31/100	0.11
23/3 / 24/4	2.08	%ST/100	0.29
% 22 S C31	58.86	%TT/100	0.59
% 22 S C32	58.65	%27ST/100	0.36
ba / ab ----- X 100	18.66	%28/100	0.21
		%29/100	0.42
23/3 / 21 st	1.54	27-30H/29ST	2.86
TT / ST	2.04	29bbR/29aaR	1.55