TOC, Rock-Eval, vitrinite reflectance, and gas chromatography of the following well materials:

BP Exploration (Alaska) Malguk No. 1 unwashed cuttings (8,880'-9,250'),
Husky Oil NPR Operations (U. S. Geological Survey) Ikpikpuk T. W. No. 1 unwashed cuttings (9,610' – 9,700'), side-wall core (9,650.0'), and core (2,930.8' – 14,973.3'),
Husky Oil NPR Operations (U. S. Geological Survey) Inigok T. W. No. 1 core (2,644.0'-20,092.0'),
Husky Oil NPR Operations (U. S. Geological Survey) North Inigok T. W. No. 1 unwashed cuttings (6,960'-7,290'),
Husky Oil NPR Operations (U. S. Geological Survey) North Kalikpik T. W. No. 1 core (3,810.0'-7,395.0'),
Husky Oil NPR Operations (U. S. Navy) East Teshekpuk T. W. No. 1 unwashed cuttings (8,140'-8,210'),
Husky Oil NPR Operations (U. S. Navy) W. T. Foran T. W. No. 1 core (7,543.2' – 8,269.8'), and U. S. Navy Fish Creek T. W. No. 1 core (228.0'-7,013.5').

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Well Name	Depth, MD	Sample Type	Purpose						
E. Simpson 2	7174.0	Core	TS						
E. Simpson 2	7174.5	Core	TS						
E. Simpson 2	7176.2	Core	TS						
E. Simpson 2	7178.0	Core	TS						
E. Simpson 2	7181.0	Core	TS						
E. Simpson 2	7187.5	Core	TS						
E. Simpson 2	7188.0	Core	TS						
E. Simpson 2	7189.0	Core	TS						
E. Simpson 2	7252.2	Core	TS						
E. Simpson 2	7353.2	Core	TS						
E. Simpson 2	7354.4	Core	TS						
E. Simpson 2	7261.5	Core	TS						
E. Simpson 2	7262.5	Core	TS						
E. Simpson 2	7270.1	Core	TS						
E. Simpson 2	7273.3	Core	TS						
E. Simpson 2	7274.2	Core	TS						
E. Teshekpuk	8140-8150	wet ditch	TS, ORGXTR						
E. Teshekpuk	8150-8160	wet ditch	TS, ORGXTR						
E. Teshekpuk	8160-8170	wet ditch	TS, ORGXTR						
E. Teshekpuk	8170-8180	wet ditch	TS, ORGXTR						
E. Teshekpuk	8180-8190	wet ditch	TS, ORGXTR						
E. Teshekpuk	8190-8200	wet ditch	TS, ORGXTR						
E. Teshekpuk	8200-8210	wet ditch	TS, ORGXTR						
Fish Creek 1	228.0	Core	VR, RE/TOC						
Fish Creek 1	432.0	Core	VR, RE/TOC						
Fish Creek 1	625.5	Core	VR, RE/TOC						
Fish Creek 1	1027.0	Core	VR, RE/TOC						
Fish Creek 1	1234.0	Core	VR, RE/TOC						
Fish Creek 1	1626.0	Core	VR, RE/TOC						
Fish Creek 1	2061.0	Core	VR, RE/TOC						
Fish Creek 1	2496.0	Core	VR, RE/TOC						
Fish Creek 1	2917.0	Core	VR, RE/TOC						
Fish Creek 1	3585.7	Core	VR, RE/TOC						
Fish Creek 1	4141.2	Core	VR, RE/TOC						
Fish Creek 1	4545.0	Core	VR, RE/TOC						
Fish Creek 1	5500.0	Core	VR, RE/TOC						
Fish Creek 1	5501.0	Core	ORGXTR						
Fish Creek 1	5509.0	Core	ORGXTR						
Fish Creek 1	6000.0	Core	VR, RE/TOC						
Fish Creek 1	6421.0	Core	VR, RE/TOC						
Fish Creek 1	6916.0	Core	VR, RE/TOC						
Fish Creek 1	7013.5	Core	VR, RE/TOC						
Ikpikpuk 1	9610-9620	wet ditch	TS, ORGXTR						
Ikpikpuk 1	9620-9630	wet ditch	TS, ORGXTR						
Ikpikpuk 1	9630-9640	wet ditch	TS, ORGXTR						
Ikpikpuk 1	9640-9650	wet ditch	TS, ORGXTR						
Ikpikpuk 1	9650-9660	wet ditch	TS, ORGXTR						
Ikpikpuk 1	9660-9670	wet ditch	TS, ORGXTR						
Ikpikpuk 1	9670-9680	wet ditch	TS, ORGXTR						
Ikpikpuk 1	9680-9690	wet ditch	TS, ORGXTR						
Ikpikpuk 1	9690-9700	wet ditch	TS, ORGXTR						
Ikpikpuk 1	9650.0	SWC	ORGXTR						
Ikpikpuk 1	2945.2	Core	VR, RE/TOC						
Ikpikpuk 1	2930.8	Core	VR, RE/TOC						
Ikpikpuk 1	3783.8	Core	VR, RE/TOC						
Ikpikpuk 1	3810.8	Core	VR, RE/TOC						

Well Name	Depth, MD	Sample Type	Purpose						
Ikpikpuk 1	5700.0	Core	VR, RE/TOC						
Ikpikpuk 1	7132.5	Core	VR, RE/TOC						
Ikpikpuk 1	7142.3	Core	TS						
Ikpikpuk 1	7368.8	Core	VR, RE/TOC						
Ikpikpuk 1	7377.0	Core	VR, RE/TOC						
Ikpikpuk 1	7495.0	Core	VR, RE/TOC						
Ikpikpuk 1	10270.5	Core	VR, RE/TOC						
Ikpikpuk 1	10300.0	Core	VR, RE/TOC						
Ikpikpuk 1	11108.0	Core	VR, RE/TOC						
Ikpikpuk 1	11134.4	Core	VR, RE/TOC						
Ikpikpuk 1	11719.9	Core	VR, RE/TOC						
Ikpikpuk 1	12744.8	Core	VR, RE/TOC						
Ikpikpuk 1	14973.3	Core	VR, RE/TOC						
Inigok 1	2644.0	Core	VR, RE/TOC						
Inigok 1	2661.0	Core	VR, RE/TOC						
Inigok 1	2662.0	Core	TS						
Inigok 1	3079.5	Core	VR, RE/TOC						
Inigok 1	4207.7	Core	VR, RE/TOC						
Inigok 1	5006.0	Core	VR, RE/TOC						
Inigok 1	7062.0	Core	VR, RE/TOC						
Inigok 1	8236.9	Core	VR, RE/TOC						
Inigok 1	8849.0	Core	VR, RE/TOC						
Inigok 1	9342.0	Core	VR, RE/TOC						
Inigok 1	9453.5	Core	VR, RE/TOC						
Inigok 1	10301.7	Core	VR, RE/TOC						
Inigok 1	10998.0	Core	VR, RE/TOC						
Inigok 1	11008.0	Core	VR, RE/TOC						
Inigok 1	11706.0	Core	VR, RE/TOC						
Inigok 1	12282.0	Core	VR, RE/TOC						
Inigok 1	12503.0	Core	VR, RE/TOC						
Inigok 1	12529.1	Core	VR, RE/TOC						
Inigok 1	12730.8	Core	VR, RE/TOC						
Inigok 1	13480.0	Core	VR, RE/TOC						
Inigok 1	13509.2	Core	VR, RE/TOC						
Inigok 1	13871.0	Core	VR, RE/TOC						
Inigok 1	14031.8	Core	VR, RE/TOC						
Inigok 1	15187.8	Core	VR, RE/TOC						
Inigok 1	16185.0	Core	VR, RE/TOC						
Inigok 1	17053.0	Core	VR, RE/TOC						
Inigok 1	19367.0	Core	VR, RE/TOC						
Inigok 1	20092.0	Core	VR, RE/TOC						
North Inigok 1	6960-6970	wet ditch	TS, ORGXTR						
North Inigok 1	6970-6980	wet ditch	TS, ORGXTR						
North Inigok 1	7070-7080	wet ditch	TS, ORGXTR						
North Inigok 1	7080-7090	wet ditch	TS, ORGXTR						
North Inigok 1	7090-7100	wet ditch	TS, ORGXTR						
North Inigok 1	7130-7140	wet ditch	TS, ORGXTR						
North Inigok 1	7140-7150	wet ditch	TS, ORGXTR						
North Inigok 1	7180-7190	wet ditch	TS, ORGXTR						
North Inigok 1	7190-7200	wet ditch	TS, ORGXTR						
North Inigok 1	7270-7280	wet ditch	TS, ORGXTR						
North Inigok 1	7280-7290	wet ditch	TS, ORGXTR						
North Inigok 1	4022.2	Core	VR, RE/TOC						
North Inigok 1	4031.0	Core	VR, RE/TOC						
North Inigok 1	6859.0	Core	VR, RE/TOC						
North Inigok 1	6867.0	Core	VR, RE/TOC						
North Inigok 1	7492.1	Core	VR, RE/TOC						

Well Name	Depth, MD	Sample Type	Purpose						
North Inigok 1	7494.3	Core	VR, RE/TOC						
North Inigok 1	7503.5	Core	VR, RE/TOC						
North Inigok 1	8573.0	Core	VR, RE/TOC						
North Inigok 1	8565.0	Core	VR, RE/TOC						
North Inigok 1	10161.2	Core	VR, RE/TOC						
North Inigok 1	10169.0	Core	VR, RE/TOC						
North Inigok 1	4022.2	Core	VR, RE/TOC						
North Inigok 1	4031.0	Core	VR, RE/TOC						
North Inigok 1	6859.0	Core	VR, RE/TOC						
North Inigok 1	6867.0	Core	VR, RE/TOC						
North Inigok 1	7492.1	Core	VR, RE/TOC						
North Inigok 1	7494.3	Core	VR, RE/TOC						
North Inigok 1	7503.5	Core	VR, RE/TOC						
North Inigok 1	8573.0	Core	VR, RE/TOC						
North Inigok 1	8565.0	Core	VR, RE/TOC						
North Inigok 1	10161.2	Core	VR, RE/TOC						
North Inigok 1	10169.0	Core	VR, RE/TOC						
North Kalikpik	3810.0	Core	VR, RE/TOC						
North Kalikpik	3821.0	Core	VR, RE/TOC						
North Kalikpik	4994.0	Core	VR, RE/TOC						
North Kalikpik	5004.0	Core	VR, RE/TOC						
North Kalikpik	5881.0	Core	VR, RE/TOC						
North Kalikpik	6699.5	Core	VR, RE/TOC						
North Kalikpik	6994.7	Core	VR, RE/TOC						
North Kalikpik	7008.5	Core	VR, RE/TOC						
North Kalikpik	7027.5	Core	VR, RE/TOC						
North Kalikpik	7052.5	Core	VR, RE/TOC						
North Kalikpik	7081.5	Core	VR, RE/TOC						
North Kalikpik	7110.0	Core	VR, RE/TOC						
North Kalikpik	7136.0	Core	VR, RE/TOC						
North Kalikpik	7148.0	Core	VR, RE/TOC						
North Kalikpik	7179.0	Core	VR, RE/TOC						
North Kalikpik	7210.7	Core	VR, RE/TOC						
North Kalikpik	7229.7	Core	VR, RE/TOC						
North Kalikpik	7395.0	Core	VR, RE/TOC						
W. T. Foran 1	7543.2	Core	VR, RE/TOC						
W. T. Foran 1	7557.0	Core	VR, RE/TOC						
W. T. Foran 1	8269.8	Core	VR, RE/TOC						
Malguk 1	8880-8890	wet ditch	ORGXTR						
Malguk 1	8890-8900	wet ditch	ORGXTR						
Malguk 1	8900-8910	wet ditch	ORGXTR						
Malguk 1	8910-8920	wet ditch	ORGXTR						
Malguk 1	9050-9060	wet ditch	ORGXTR						
Malguk 1	9060-9070	wet ditch	ORGXTR						
Malguk 1	9070-9080	wet ditch	ORGXTR						
Malguk 1	9080-9090	wet ditch	ORGXTR						
Malguk 1	9120-9130	wet ditch	ORGXTR						
Malguk 1	9130-9140	wet ditch	ORGXTR						
Malguk 1	9140-9150	wet ditch	ORGXTR						
Malguk 1	9150-9160	wet ditch	ORGXTR						
Malguk 1	9160-9170	wet ditch	ORGXTR						
Malguk 1	9170-9180	wet ditch	ORGXTR						
Malguk 1	9180-9190	wet ditch	ORGXTR						
Malguk 1	9190-9200	wet ditch	ORGXTR						
Malguk 1	9200-9210	wet ditch	ORGXTR						
Malguk 1	9210-9230	wet ditch	ORGXTR						
Malguk 1	9230-9240	wet ditch	ORGXTR						

Well Name	Depth, MD	Sample Type	Purpose						
Malguk 1	9240-9250	wet ditch	ORGXTR						

KEY TO SAMPLE NUMBERS

WELL	LABNUM	TEST
NORTH KALIKPIK	97R0868	VITR
NORTH KALIKPIK	97R0869	VITR
NORTH KALIKPIK	97R0870	VITR
NORTH KALIKPIK	97R0871	VITR
ORTH KALIKPIK	97R0872	VITR
NORTH KALIKPIK	97R0873	VITR
NORTH KALIKPIK	97R0874	VITR
NORTH KALIKPIK	97R0875	VITR
NORTH KALIKPIK	97R0876	VITR
NORTH KALIKPIK	97R0877	VITR
NORTH KALIKPIK	97R0878	VITR
NORTH KALIKPIK	97R0879	VITR
NORTH KALIKPIK	97R0880	VITR
NORTH KALIKPIK	97R0881	VITR
NORTH KALIKPIK	97R0882	VITR
NORTH KALIKPIK	97R0883	VITR
NORTH KALIKPIK	97R0884	VITR
NORTH KALIKPIK	97R0885	VITR
FISH CREEK 1	97R0893	VITR
FISH CREEK 1	97R0894	VITR
FISH CREEK 1	97R0895	VITR
FISH CREEK 1	97R0896	VITR
FISH CREEK 1	97R0897	VITR
FISH CREEK 1	97R0898	VITR
FISH CREEK 1	97R0899	VITR
FISH CREEK 1	97R0900	VITR
FISH CREEK 1	97R0901	VITR
FISH CREEK 1	97R0902	VITR
FISH CREEK 1	97R0903	VITR
FISH CREEK 1	97R0904	VITR
FISH CREEK 1	97R0905	VITR
FISH CREEK 1	97R0906	VITR
FISH CREEK 1	97R0908	SOX
FISH CREEK 1	97R0908	MPLC
ISH CREEK 1	97R0908	CIAR
ISH CREEK 1	97R0908	CINS
FISH CREEK 1	97R0908	CIAS
FISH CREEK 1	97R0908	CISA
FISH CREEK 1	97R0908	SGC
FISH CREEK 1	97R0908	SIMS
FISH CREEK 1	97R0908	ASMS
FISH CREEK 1	97R0908	MRMQ
FISH CREEK 1	97R0909	VITR
FISH CREEK 1	97R0910	VITR
FISH CREEK 1	97R0911	VITR
FISH CREEK 1	97R0912	VITR
NORTH INIGOK 1	97R0924	VITR
NORTH INIGOK 1	97R0925	VITR
NORTH INIGOK 1	97R0926	VITR
NORTH INIGOK 1	97R0927	VITR
NORTH INIGOK 1	97R0928	VITR
NORTH INIGOK 1	97R0929	VITR
NORTH INIGOK 1	97R0930	VITR
NORTH INIGOK 1	97R0931	VITR
NORTH INIGOK 1	97R0932	VITR
NORTH INIGOK 1	97R0933	VITR
NORTH INIGOK 1	97R0934	VITR
INIGOK 1	97R0935	VITR
INIGOK 1	97R0936	VITR
INIGOK 1	97R0938	VITR
INIGOK 1	97R0939	VITR
INIGOK 1	97R0940	VITR
INIGOK 1	97R0941	VITR
INIGOK 1	97R0942	VITR
INIGOK 1	97R0943	VITR
IGOK 1	97R0944	VITR
NIGOK 1	97R0945	VITR
INIGOK 1	97R0946	VITR
INIGOK 1	97R0947	VITR
INIGOK 1	97R0948	VITR
INIGOK 1	97R0949	VITR
INIGOK 1	97R0950	VITR

INIGOK 1	97R0951	VITR
INIGOK 1	97R0952	VITR
INIGOK 1	97R0953	VITR
INIGOK 1	97R0954	VITR
INIGOK 1	97R0955	VITR
INIGOK 1	97R0956	VITR
NIGOK 1	97R0957	VITR
NIGOK 1	97R0958	VITR
INIGOK 1	97R0959	VITR
INIGOK 1	97R0960	VITR
INIGOK 1	97R0961	VITR
INIGOK 1	97R0962	VITR
W T FORAN 1	97R0963	VITR
W T FORAN 1	97R0964	VITR
W T FORAN 1	97R0965	VITR
IKPIKPUK 1	97R1013	VITR
IKPIKPUK 1	97R1014	VITR
IKPIKPUK 1	97R1015	VITR
IKPIKPUK 1	97R1016	VITR
IKPIKPUK 1	97R1017	VITR
IKPIKPUK 1	97R1018	VITR
IKPIKPUK 1	97R1020	VITR
IKPIKPUK 1	97R1021	VITR
IKPIKPUK 1	97R1022	VITR
IKPIKPUK 1	97R1023	VITR
IKPIKPUK 1	97R1024	VITR
IKPIKPUK 1	97R1025	VITR
IKPIKPUK 1	97R1026	VITR
IKPIKPUK 1	97R1027	VITR
IKPIKPUK 1	97R1028	VITR
IKPIKPUK 1	97R1029	VITR

North Inigok-1	97R1279	SCC	composite of wet ditch cuttings 97R00913 - 97R0923

NPRA DATA.XLS

labnum	well	rockwt	som (soluable organic matter)	smpwtu (sample original weight)	satwt (saturate weight)	arowt (aromatic weight)	nsowt (weight of nitrogen sulfur + oxygen)	aspwt (asphaltenes weight)	losswt (lost weight)
97R0908	FISH CREEK 1	15.0500	0.0409	0.0398	0.0213	0.0034	0.0069	0.0008	0.0074
97R1279	NORTH INIGOK 1	90.9200	0.0312	0.0312	0.0100	0.0043	0.0080	0.0017	0.0072

labnum	well	satp	arop	nsop	aspp	lossp	extp		
97R0908	FISH CREEK 1	53.52	8.54	17.34	2.01	18.59	0.27		
97R1279	NORTH INIGOK 1	32.05	13.78	25.64	5.45	23.08	0.03		

carbon isotopes

PUK ISOTOPES.XLS

saturate aromatic nitrogen sulfur oxygen asphaltene

labnum	well	cisat	ciaro	cinso	ciasph
97R0908	FISH CREEK 1	-29.4	-28.1	-28.5	
97R1279	NORTH INIGOK 1	-29.4	-26.8	-27.8	-26.3

Rock Eval

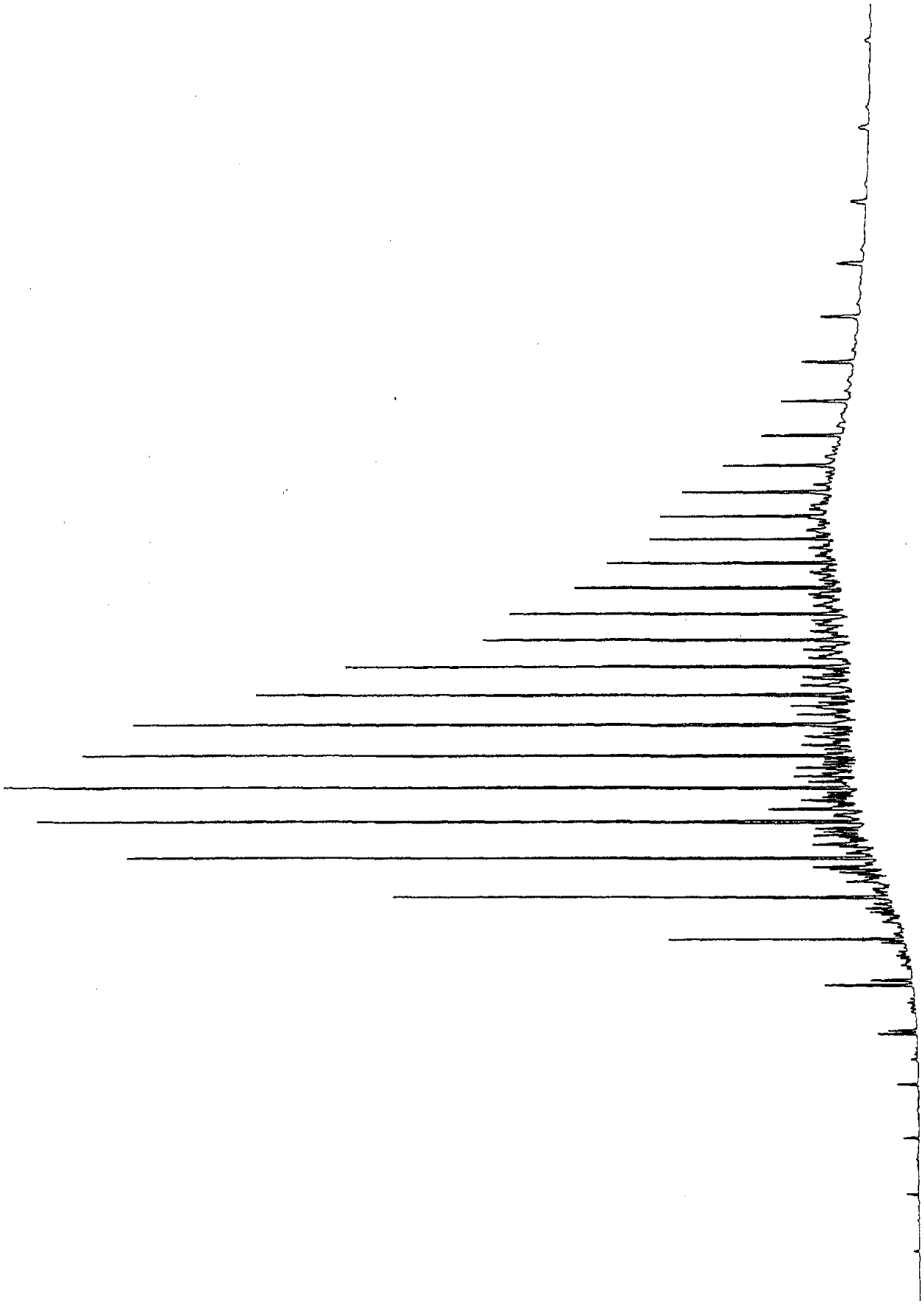
labnum	Depth	Type	TOC	S1	S2	S3	Tmax	HI	OI	PI	HC
North Kalikpik-1											
97R0868	3810.0	Core	1.33	0.26	0.74	1.26	436	56	95	0.26	20
97R0869	3821.0	Core	1.16	0.15	0.58	0.96	436	50	83	0.21	13
97R0870	4994.0	Core	1.24	0.13	0.59	0.32	438	48	26	0.18	10
97R0871	5004.0	Core	1.42	0.27	0.77	1.19	437	54	84	0.26	19
97R0872	5881.0	Core	1.4	0.37	0.95	0.91	438	68	65	0.28	26
97R0873	6699.5	Core	1.44	0.23	0.84	0.49	449	58	34	0.21	16
97R0874	6994.7	Core	3.21	1.08	5.69	0.12	447	177	4	0.16	34
97R0875	7008.5	Core	3.46	1.13	5.61	0.3	443	162	9	0.17	33
97R0876	7027.5	Core	2.54	0.92	3.64	0.16	446	143	6	0.2	36
97R0877	7052.5	Core	2.18	0.35	1.13	0.21	455	52	10	0.24	16
97R0878	7081.5	Core	3.26	0.41	1.85	0.16	457	57	5	0.18	13
97R0879	7110.0	Core	2.28	0.43	1.28	0.47	453	56	21	0.25	19
97R0880	7136.0	Core	1.97	0.29	0.87	0.1	456	44	5	0.25	15
97R0881	7148.0	Core	1.05	0.54	1.18	0.07	451	112	7	0.31	51
97R0882	7179.0	Core	1.34	0.49	1.69	0.12	450	126	9	0.22	37
97R0883	7210.7	Core	1.02	0.41	1.13	0.05	446	111	5	0.27	40
97R0884	7229.7	Core	0.9	0.59	1.03	0.1	451	114	11	0.36	66
97R0885	7395.0	Core	0.82	0.57	0.85	0.05	452	104	6	0.4	70
Fish Creek-1											
97R0893	228.0	Core	1.05	0.29	0.45	2.09	410	43	199	0.39	28
97R0894	432.0	Core	0.89	0.16	0.26	4.51	403	29	507	0.38	18
97R0895	625.5	Core	1.06	0.14	0.35	1.03	383	33	97	0.29	13
97R0896	1027.0	Core	3.23	0.3	3.4	1.77	406	105	55	0.08	9
97R0897	1234.0	Core	0.77	0.09	0.16	2.63	406	21	342	0.36	12
97R0898	1626.0	Core	1.36	0.1	0.32	1.48	428	24	109	0.24	7
97R0899	2061.0	Core	1.62	0.12	0.44	2.1	420	27	130	0.21	7
97R0900	2496.0	Core	1.3	0.14	0.41	1.69	420	32	130	0.25	11
97R0901	2917.0	Core	4.4	1.96	4.28	2.01	427	97	46	0.31	45
97R0902	3585.7	Core	1.35	0.15	0.73	1.77	435	54	131	0.17	11
97R0903	4141.2	Core	1.37	0.37	1.25	0.83	429	91	61	0.23	27
97R0904	4545.0	Core	1.46	0.2	0.75	2.78	438	51	190	0.21	14
97R0905	5079	Core	1.38	0.15	0.6	1.24	436	43	90	0.2	11
97R0906	5500.0	Core	1.38	0.37	0.88	1.59	437	64	115	0.3	27
97R0907	5501.0	Core	0.64	0.25	0.43	1.24	437	67	194	0.37	39
97R0908	5509.0	Core	0.45	1.61	1.07	0.38	415	238	84	0.6	358
97R0909	6000.0	Core	1.12	0.29	0.66	0.94	437	59	84	0.31	26
97R0910	6421.0	Core	0.93	0.17	0.65	0.74	439	70	80	0.21	18
97R0911	6916.0	Core	1.14	0.17	0.71	0.31	439	62	27	0.19	15
97R0912	7013.5	Core	1.03	0.21	0.65	1.15	435	63	112	0.24	20

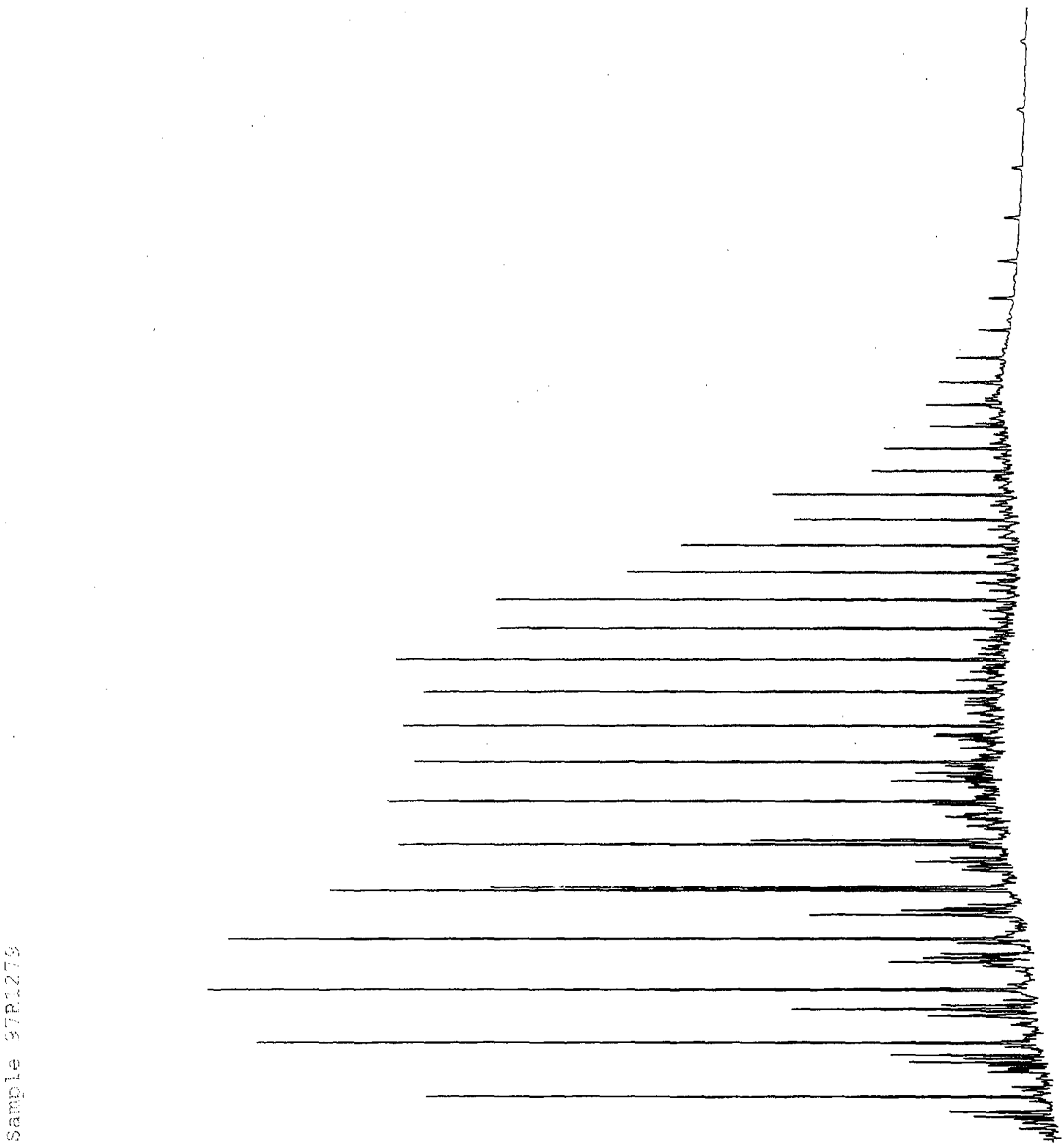
Rock Eval

labnum	Depth	Type	TOC	S1	S2	S3	Tmax	HI	OI	PI	HC
North Inigok-1											
97R0913	6960-6970	wet ditch	1.03	0.12	0.64	0.37	443	62	36	0.16	12
97R0914	6970-6980	wet ditch	1.11	0.15	0.7	0.36	443	63	32	0.18	14
97R0915	7070-7080	wet ditch	0.94	0.13	0.49	0.4	443	52	43	0.21	14
97R0916	7080-7090	wet ditch	0.98	0.12	0.55	0.42	445	56	43	0.18	12
97R0917	7090-7100	wet ditch	1.04	0.14	0.64	0.31	445	62	30	0.18	13
97R0918	7130-7140	wet ditch	0.83	0.14	0.43	0.59	444	52	71	0.25	17
97R0919	7140-7150	wet ditch	0.89	0.18	0.5	0.8	443	56	90	0.26	20
97R0920	7180-7190	wet ditch	0.81	0.15	0.49	0.37	444	60	46	0.23	19
97R0921	7190-7200	wet ditch	0.93	0.21	0.71	0.28	443	76	30	0.23	23
97R0922	7270-7280	wet ditch	0.96	0.25	0.57	0.47	446	59	49	0.3	26
97R0923	7280-7290	wet ditch	1.24	0.18	0.69	0.43	447	56	35	0.21	15
97R0924	4022.2	Core	1.03	0.08	0.48	1.43	436	47	139	0.14	8
97R0925	4031.0	Core	1.66	0.08	0.74	2.6	439	45	157	0.1	5
97R0926	6859.0	Core	1.16	0.13	0.53	0.65	447	46	56	0.2	11
97R0927	6867.0	Core	1.26	0.15	0.53	0.92	446	42	73	0.22	12
97R0928	7492.1	Core	4.92	1.76	5.48	0.37	436	111	8	0.24	36
97R0929	7494.3	Core	5.75	1.52	11.25	0.23	444	196	4	0.12	26
97R0930	7503.5	Core	3.15	1.36	4.19	0.21	441	133	7	0.25	43
97R0931	8573.0	Core	1	0.43	0.51	0.07	456	51	7	0.46	43
97R0932	8565.0	Core	1.17	0.36	0.66	0.06	460	56	5	0.35	31
97R0933	10161.2	Core	1.83	0.46	0.3	0.05	576	16	3	0.61	25
97R0934	10169.0	Core	3.53	0.58	0.63	0.11	573	18	3	0.48	16
Malguk-1											
97R0966	8880-8890	wet ditch	0.6	0.08	0.26	0.79	439	43	132	0.24	13
97R0967	8890-8900	wet ditch	0.76	0.06	0.23	1.15	441	30	151	0.21	8
97R0968	8900-8910	wet ditch	0.67	0.08	0.28	0.78	439	42	116	0.22	12
97R0969	8910-8920	wet ditch	0.7	0.08	0.3	0.96	440	43	137	0.21	11
97R0970	9050-9060	wet ditch	0.72	0.08	0.33	0.67	440	46	93	0.2	11
97R0971	9060-9070	wet ditch	0.64	0.08	0.28	0.64	437	44	100	0.22	13
97R0972	9070-9080	wet ditch	0.67	0.09	0.36	1.35	437	54	201	0.2	13
97R0973	9080-9090	wet ditch	0.45	0.09	0.24	0.59	437	53	131	0.27	20
97R0974	9120-9130	wet ditch	0.58	0.07	0.23	0.9	443	40	155	0.23	12
97R0975	9130-9140	wet ditch	0.7	0.08	0.3	1.22	440	43	174	0.21	11
97R0976	9140-9150	wet ditch	0.72	0.1	0.36	1.16	438	50	161	0.22	14
97R0977	9150-9160	wet ditch	0.62	0.08	0.27	0.85	441	44	137	0.23	13
97R0978	9160-9170	wet ditch	3.26	0.09	2.62	1.95	439	80	60	0.03	3
97R0979	9170-9180	wet ditch	1.01	0.09	0.52	0.8	439	51	79	0.15	9
97R0980	9180-9190	wet ditch	0.57	0.06	0.26	0.6	437	46	105	0.19	11
97R0981	9190-9200	wet ditch	0.43	0.06	0.21	0.69	441	49	160	0.22	14
97R0982	9200-9210	wet ditch	0.36	0.06	0.2	0.54	438	56	150	0.23	17
97R0983	9210-9220	wet ditch	0.34	0.06	0.22	0.54	437	65	159	0.21	18
97R0984	9220-9230	wet ditch	0.28	0.05	0.19	0.49	437	68	175	0.21	18
97R0985	9230-9240	wet ditch	0.41	0.08	0.27	0.56	436	66	137	0.23	20
97R0986	9240-9250	wet ditch	0.38	0.07	0.22	0.57	435	58	150	0.24	18

labnum	Depth	Type	TOC	S1	S2	S3	Tmax	HI	OI	PI	HC
Inigok-1											
97R0935	2644.0	Core	1.39	0.08	0.52	1.88	439	37	135	0.13	6
97R0936	2661.0	Core	1.15	0.06	0.56	2.49	433	49	217	0.1	5
97R0937	2662.0	Core	0.26	0.05	0.06	0.24	410	23	92	0.45	19
97R0938	3079.5	Core	0.55	0.06	0.24	0.94	437	44	171	0.2	11
97R0939	4207.7	Core	1.91	0.14	1.14	0.61	439	60	32	0.11	7
97R0940	5006.0	Core	1.52	0.1	0.8	0.96	438	53	63	0.11	7
97R0941	7062.0	Core	1.36	0.2	0.95	0.35	441	70	26	0.17	15
97R0942	8236.9	Core	7.22	1.88	15.35	0.33	441	213	5	0.11	26
97R0943	8849.0	Core	1.42	0.37	0.85	0.36	453	60	25	0.3	26
97R0944	9342.0	Core	1.53	0.46	1.2	0.59	455	78	39	0.28	30
97R0945	9453.5	Core	1.45	0.6	1.03	0.2	459	71	14	0.37	41
97R0946	10301.7	Core	1.59	0.81	1.05	0.07	462	66	4	0.44	51
97R0947	10998.0	Core	1.3	0.37	0.48	0.16	463	37	12	0.44	28
97R0948	11008.0	Core	1.22	0.31	0.39	0.3	463	32	25	0.44	25
97R0949	11706.0	Core	1.61	0.31	0.37	0.45	526	23	28	0.46	19
97R0950	12282.0	Core	1.01	0.31	0.12	0.08	496	12	8	0.72	31
97R0951	12503.0	Core	0.4	0.07	0.06	0.05	0	15	13	0.54	18
97R0952	12529.1	Core	0.92	0.05	0.09	0.04	360	10	4	0.36	5
97R0953	12730.8	Core	0.22	0.02	0.01	0.13	444	5	59	0.67	9
97R0954	13480.0	Core	0.42	0.02	0.05	0.01	422	12	2	0.29	5
97R0955	13509.2	Core	0.36	0.01	0	0.03	0	0	8	1	3
97R0956	13871.0	Core	1.14	0.03	0.04	0.01	393	4	1	0.43	3
97R0957	14031.8	Core	0.41	0.03	0.04	0.03	0	10	7	0.43	7
97R0958	15187.8	Core	0.25	0.02	0.03	0.07	0	12	28	0.4	8
97R0959	16185.0	Core	0.41	0.02	0.06	0.05	390	15	12	0.25	5
97R0960	17053.0	Core	0.15	0.02	0.01	0.07	340	7	47	0.67	13
97R0961	19367.0	Core	0.37	0.07	0.02	0.02	322	5	5	0.78	19
97R0962	20092.0	Core	4	0.17	0.2	0.09	369	5	2	0.46	4
East Teshekpuk-1											
97R0886	8140-8150	wet ditch	1.37	0.41	0.89	0.34	451	65	25	0.32	30
97R0887	8150-8160	wet ditch	1.43	0.48	1.17	0.27	449	82	19	0.29	34
97R0888	8160-8170	wet ditch	0.97	0.32	0.47	0.22	453	48	23	0.41	33
97R0889	8170-8180	wet ditch	0.9	0.52	0.71	0.16	454	79	18	0.42	58
97R0890	8180-8190	wet ditch	0.76	0.29	0.45	0.18	453	59	24	0.39	38
97R0891	8190-8200	wet ditch	1.07	0.34	0.55	0.21	449	51	20	0.38	32
97R0892	8200-8210	wet ditch	0.76	0.29	0.48	0.21	453	63	28	0.38	38
WT Foran-1											
97R0963	7543.2	Core	6.96	5.88	35.54	0.42	433	511	6	0.14	84
97R0964	7557.0	Core	3.49	2.08	20.15	0.34	434	577	10	0.09	60
97R0965	8269.8	Core	0.43	0.15	0.24	0.08	435	56	19	0.38	35

labnum	Depth	Type	TOC	S1	S2	S3	Tmax	HI	OI	PI	HC
Ikpikpuk-1											
97R1003	9610-9620	wet ditch	1.61	0.53	0.95	0.09	460	59	6	0.36	33
97R1004	9620-9630	wet ditch	0.93	0.39	0.73	0.06	464	78	6	0.35	42
97R1005	9630-9640	wet ditch	0.6	0.28	0.48	0.07	456	80	12	0.37	47
97R1006	9640-9650	wet ditch	0.9	0.39	0.86	0.07	459	96	8	0.31	43
97R1007	9650-9660	wet ditch	1.02	0.35	0.54	0.09	459	53	9	0.39	34
97R1008	9660-9670	wet ditch	1.11	0.58	1.35	0.12	458	122	11	0.3	52
97R1009	9670-9680	wet ditch	0.97	0.43	0.79	0.06	461	81	6	0.35	44
97R1010	9680-9690	wet ditch	0.99	0.43	0.8	0.09	458	81	9	0.35	43
97R1011	9690-9700	wet ditch	1.08	0.49	1.02	0.08	460	94	7	0.32	45
97R1012	9650.0	SWC	1.18	0.5	1.38	0.15	453	117	13	0.27	42
97R1013	2945.2	Core	2.03	0.07	1.15	1.43	440	57	70	0.06	3
97R1014	2930.8	Core	0.49	0.04	0.27	0.5	441	55	102	0.13	8
97R1015	3783.8	Core	1.37	0.24	0.6	1.42	439	44	104	0.29	18
97R1016	3810.8	Core	1.34	0.09	0.57	1.75	438	43	131	0.14	7
97R1017	5700.0	Core	1.22	0.62	0.8	0.92	429	66	75	0.44	51
97R1018	7132.5	Core	1.49	0.24	1.15	0.73	442	77	49	0.17	16
97R1019	7142.3	Core	0.24	0.06	0.12	0.29	442	50	121	0.33	25
97R1020	7368.8	Core	4.89	1.17	8.47	0.21	441	173	4	0.12	24
97R1021	7377.0	Core	1.7	0.23	0.88	0.21	445	52	12	0.21	14
97R1022	7495.0	Core	2.38	0.55	3.72	0.57	443	156	24	0.13	23
97R1023	10270.5	Core	2.71	1.96	2.17	0.18	466	80	7	0.47	72
97R1024	10300.0	Core	0.79	0.3	0.38	0.07	457	48	9	0.44	38
97R1025	11108.0	Core	0.43	0.01	0.04	0.04	438	9	9	0.2	2
97R1026	11134.4	Core	0.52	0.02	0.06	0.09	452	12	17	0.25	4
97R1027	11719.9	Core	0.81	0.02	0.11	0.12	483	14	15	0.15	2
97R1028	12744.8	Core	0.18	0	0	0.06	0	0	33	0	0
97R1029	14973.3	Core	0.14	0.01	0	0.03	0	0	21	1	7


Sample 97m0908


Sample 37R1279

labnum	req	filename	method	injdate	procdate	nc9	nc10	ip11	nc11	nc12	ip13	ip14	nc13	ip15	nc14	ip16
97R0908	LE	S970334.001	SGC.MET	17-Sep-97	25-Sep-97	0.016	0.027	0	0.011	0.067	0	0	0.039	0.01	0.07	0.019
97R1279	LE	S970336.001	SGC.MET	17-Sep-97	25-Sep-97	0.014	0.264	0.059	0.874	1.671	0.365	0.382	2.31	0.574	3.156	1.392

nc15	nc16	ip18	nc17	ip19	nc18	ip20	nc19	nc20	nc21	c25hbi	nc22	nc23	nc24	nc25	nc26	nc27	nc28	nc29	nc30
0.102	0.129	0.066	0.238	0.226	0.571	0.34	1.433	3.202	4.818	0	5.331	5.373	5.009	4.818	3.977	3.287	2.315	2.332	1.661
3.528	3.369	1.174	2.937	2.726	2.567	1.411	2.456	2.484	2.408	0	2.257	2.353	2.045	2.048	1.534	1.36	0.867	1	0.533

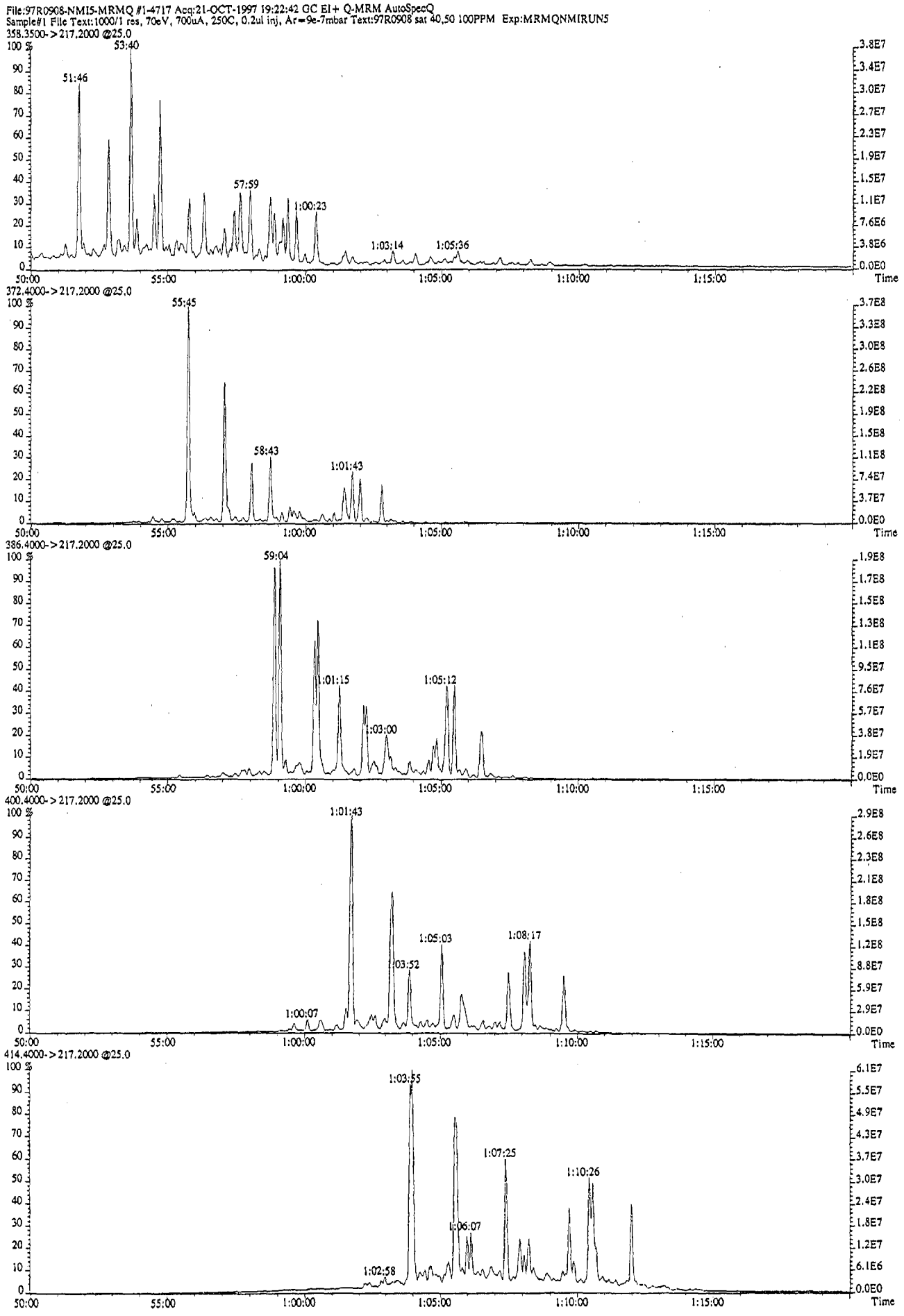
nc31	nc32	nc33	nc34	nc35	nc36	nc37	nc38	nc39	nc40	ta	nparaffin	isoprenoid	res_unk	cpi	priphy	nc17ip19
1.51	1.116	1.109	1.342	0.998	0.799	0.739	0.667	0.575	0.482	74753218	54.967	0.661	44.371	1.058	0.665	1.054
0.54	0.304	0.347	0.381	0.29	0.18	0.171	0.155	0.144	0.121	78630823	44.908	8.083	47.009	1.144	1.933	1.077

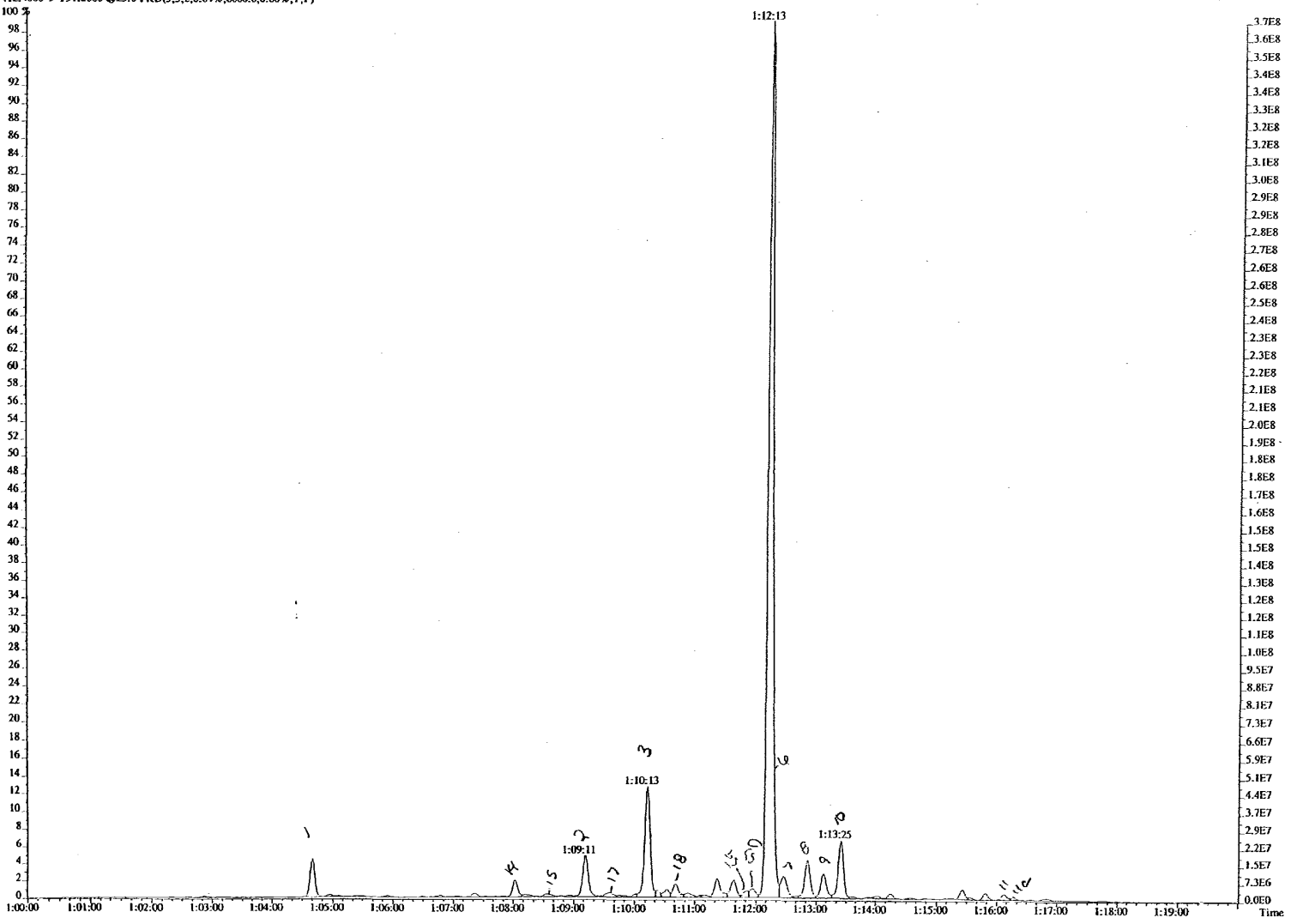
nc18ip20	nc18nc19	normnc17	normip19	normnc21	vendor	vendornum	comments	cpi_orggeo
1.679	0.399	4.514	4.283	91.203	BRI	AR-00094		1.058
1.82	1.045	36.389	33.778	29.833	BRI	AR-00094		1.144

Metastable Reaction Monitoring

MRMQ

MRMQ

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Sample#1 File Text:1000/1 res, 70eV, 700uA, 250C, 0.2ul inj, Ar=9e-7mbar Text:97R0908 sat 40,50 100PPM Exp:MRMQNMRUN5
412.4000-> 191.2000 @25.0 PKD(3,3,2,0.04%,8000.0,0.00%,T,F)
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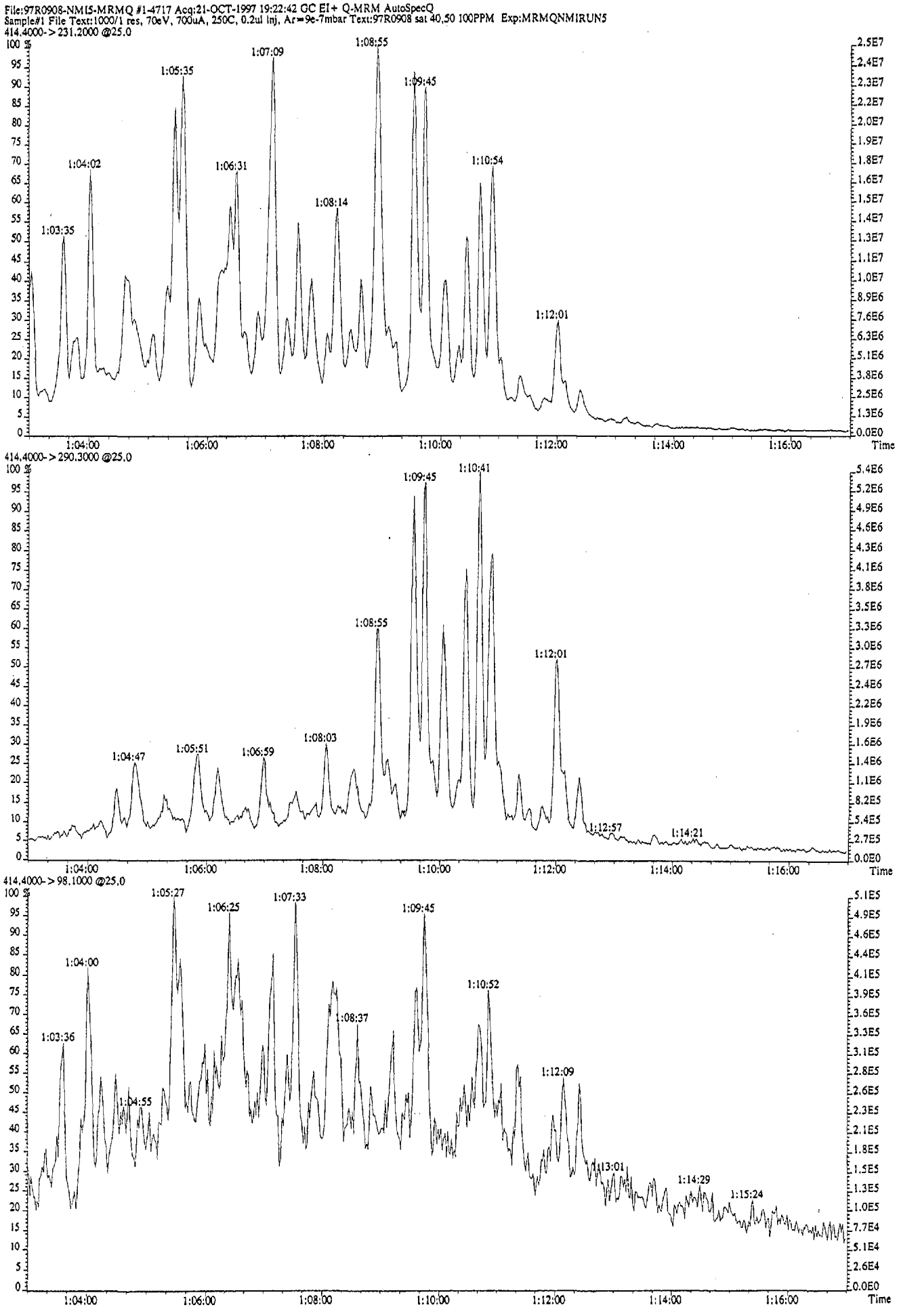
1:10:13
1:09:11
1:13:25
Time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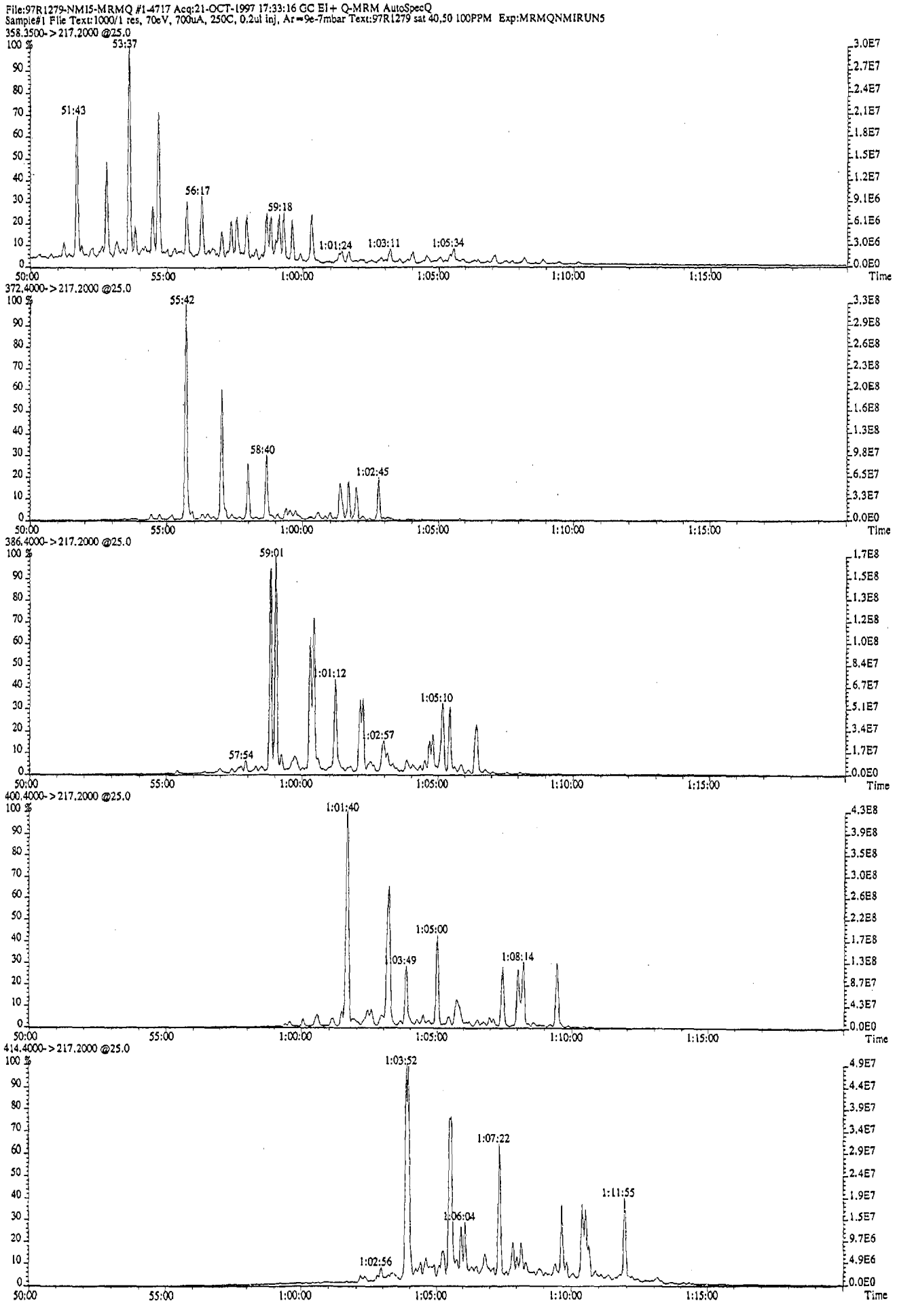
Sample#1 File Text:1000/1 res, 70eV, 700uA, 250C, 0.2ul inj, Ar=9e-7mbar Text:97R0908 sat 40,50 100PPM Exp:MRMQNM1RUN5
414.4000->231.2000 @25.0
1:03:35
1:04:02
1:05:35
1:06:31
1:07:09
1:08:14
1:08:55
1:09:45
1:10:54
1:12:01
414.4000->290.3000 @25.0
1:04:47
1:05:51
1:06:59
1:08:03
1:08:55
1:09:45
1:10:41
1:12:01
1:12:57
1:14:21
414.4000->98.1000 @25.0
1:03:36
1:04:00
1:04:55
1:05:27
1:06:25
1:07:33
1:08:37
1:09:45
1:10:52
1:12:09
1:13:01
1:14:29
1:15:24
Time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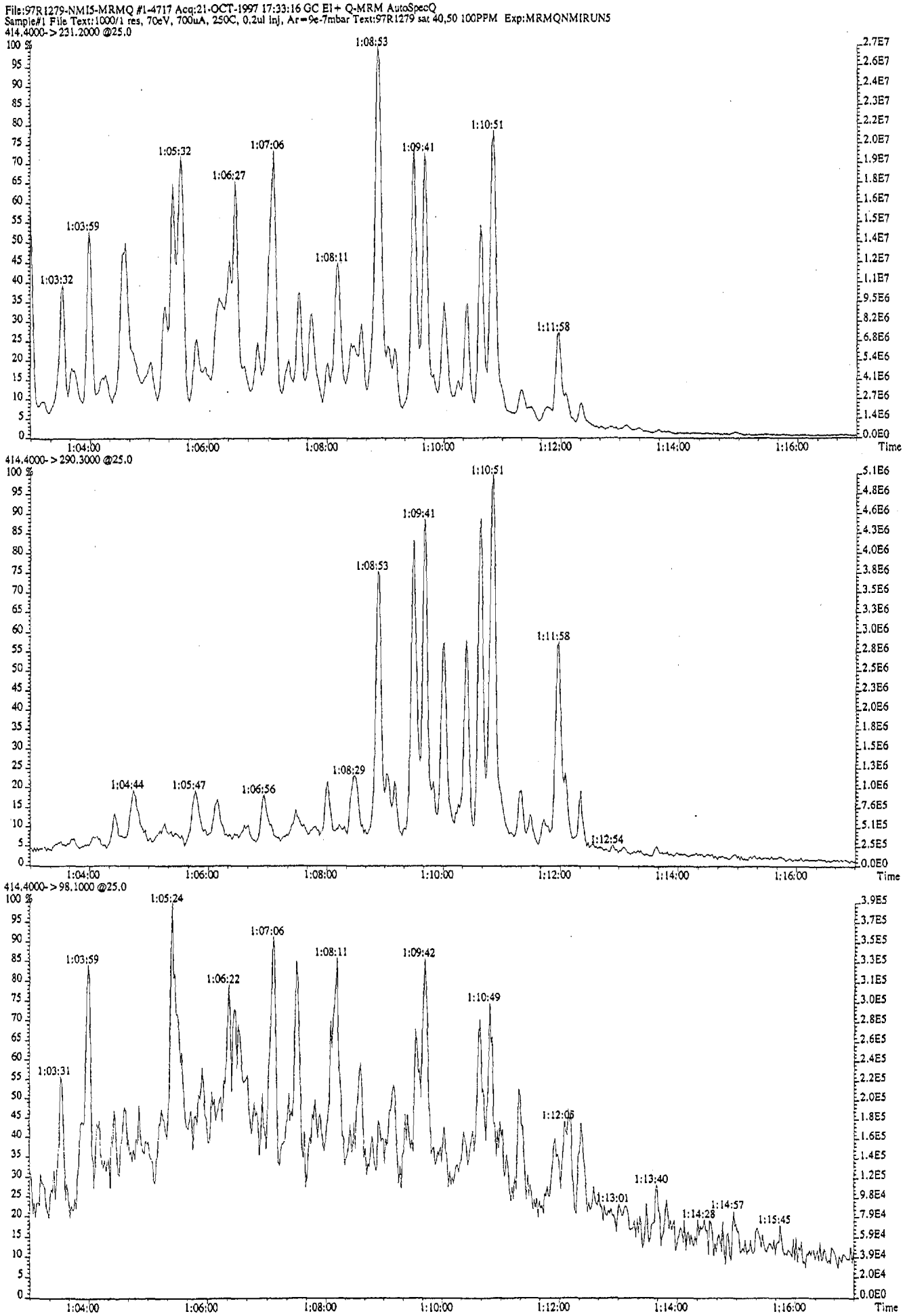
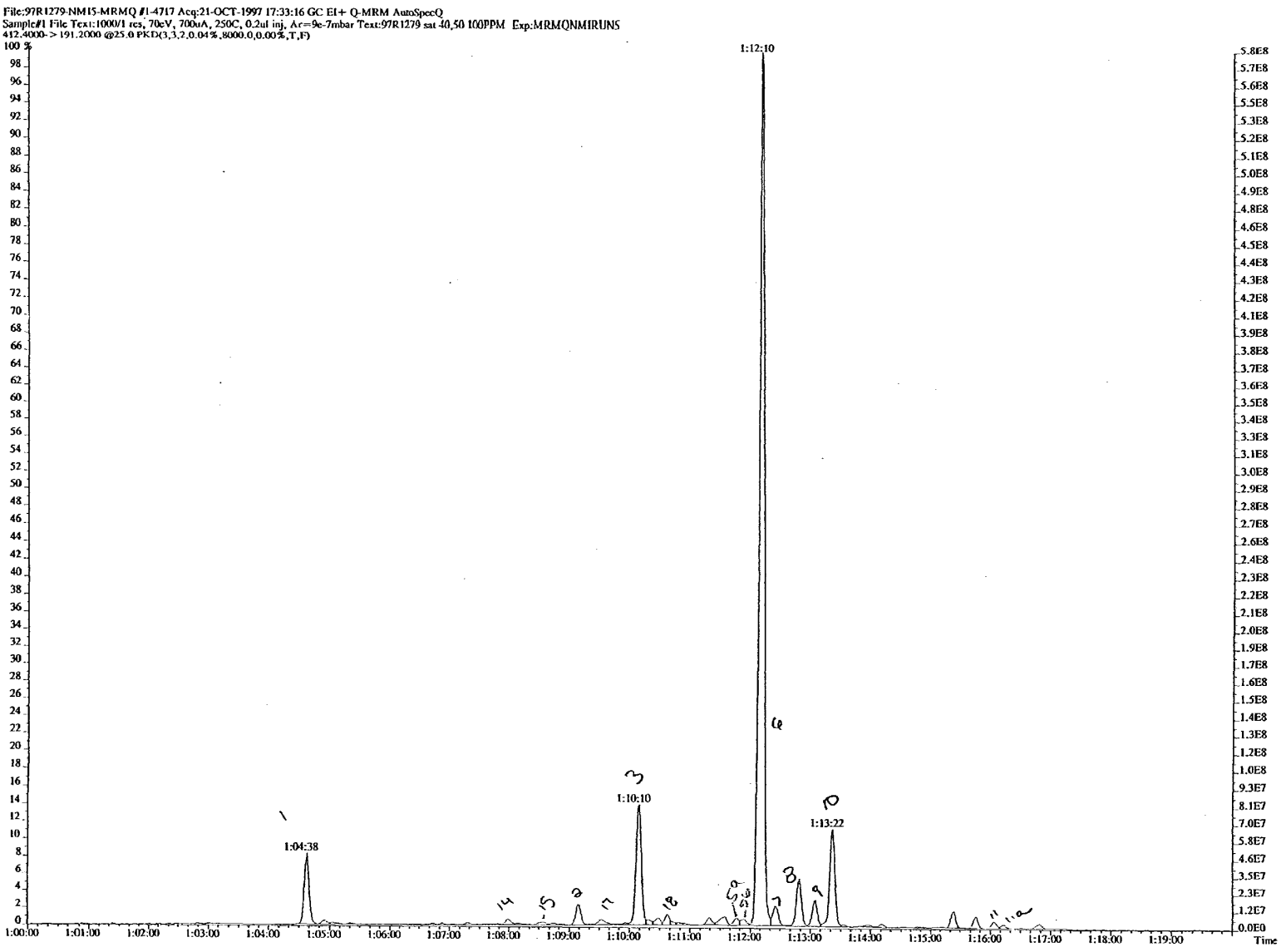
Sample#1 File Text:1000/1 res, 70eV, 700uA, 250C, 0.2ul inj, Ar=9e-7mbar Text:97R1279 sat 40,50 100PPM Exp:MRMQNMIRUN5
358.3500->217.2000 @25.0
53:37
51:43
56:17
59:18
1:01:24
1:03:11
1:05:34
372.4000->217.2000 @25.0
55:42
58:40
1:02:45
386.4000->217.2000 @25.0
59:01
1:01:12
1:05:10
1:02:57
57:54
400.4000->217.2000 @25.0
1:01:40
1:05:00
1:03:49
1:08:14
414.4000->217.2000 @25.0
1:03:52
1:07:22
1:11:55
1:06:04
1:02:56
Time


File:97R1279-NMI5-MRMQ #1-4717 Acq:21-OCT-1997 17:33:16 GC EI+ Q-MRM AutoSpecQ
Sample#1 File Text:1000/1 res, 70eV, 700uA, 250C, 0.2ul inj, Ar=9e-7mbar Text:97R1279 sat 40,50 100PPM Exp:MRMQNMIRUN5
414.4000->231.2000 @25.0
1:03:32
1:03:59
1:05:32
1:06:27
1:07:06
1:08:11
1:08:53
1:09:41
1:10:51
1:11:58
414.4000->290.3000 @25.0
1:04:44
1:05:47
1:06:56
1:08:29
1:08:53
1:09:41
1:10:51
1:11:58
1:12:54
414.4000->98.1000 @25.0
1:03:31
1:03:59
1:05:24
1:06:22
1:07:06
1:08:11
1:09:42
1:10:49
1:12:05
1:13:01
1:13:40
1:14:28
1:14:57
1:15:45
Time


File:97R1279-NM15-MRMQ #1-4717 Acq:21-OCT-1997 17:33:16 GC EI+ Q-MRM AutoSpecQ
Sample#1 File Text:1000/1 res, 70eV, 700uA, 250C, 0.2ul inj, Ac=9e-7mbar Text:97R1279 sat 40,50 100PPM Exp:MRMQNMIRUNS
412.4000- > 191.2000 @25.0 PKD(3,3,2,0.04%,8000.0,0.00%,T,F)
1:04:38
1:10:10
1:12:10
1:13:22
Time

93 SAMPLES

DGSI Project: 97/3992

DGSI

DGSI NUMBER	DATE: 10/17/97 IDENTIFICATION	PREPARATION/ SAMPLE TYPE	ORGANIC MATTER (%) LIPIDS UNSTRUCTURED: UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINIZED	STRUCTURED: TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	HUMIC: INERTINITE	VITRINITE	OTHER: TYPE	TYPE	RELATIVE ABUNDANCE: PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	VITRINITE: NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	FLUORESCENCE / TAI REFLECTED LIPIDS: COLOR	INTENSITY	TRANSMITTED LIPIDS: COLOR	INTENSITY	BACKGROUND INTENSITY	UNSTR. TAI: VALUE	UNSTR. FLUOR.: COLOR	INTENSITY	STRU. TAI: VALUE	STRU. FLUOR.: COLOR	INTENSITY	Ro: VITRINITE REFLECTANCE OR EQUIVALENCY
							LD							VL		E										O	1	3	2	O	2		Y		-
501	97R0963	K/CC		85			5				?	5	5	T		F	+	+	M	T	M			B	2	Y	2	4	2+	OB	1		O	2	V ?1.18
Comments: *Amorhous lipids with remnant algal structure.*																																			
							LD									F						-				O	1	3	2	O	2				-
502	97R0964	K/CC		85			5					5	5			E	+	+	+					OB	2	Y	2	4	2+	OB	1		Y	2	V ?1.12
Comments: *Similar.*																																			
							U																	BL	0				3	BL	0				-
503	97R0965	K/CC		T		95	T					5	T			MA	-	M	+					B	1			4	2+	O	1				V ?1.13
Comments: *Change to very fine-grained, micrinized lipids with traces of amorphous lipids.*																																			
Comments:																																			
Comments:																																			

ANALYST	SAMPLE TYPE/PREP	STRUCTURED LIPIDS	OTHER ORGANIC MATTER	PYRITE	ABUND.	FLUOR. INTENS.	VIT. REFLECT. EQUIVALENCE	FLUOR. COLOR	TAI COLOR VALUES
X O'Connor	CTG Cuttings	AL Alginite	E Exsudatinite	E Euhedral	N None	0 None	B Bitumen	W White	1- Straw Yellow
	CC Conv. Core	SB Suberinite	G Graptolites	F Framboid	T Trace	1 Weak	G Graptolites	G Green	1 Pale Yellow
	SWC SideWallCore	C Cutinite	VL Lipid-Rich Vitrinite	MA Massive	- Small Amt.	2 Moderate	VL Lipid-Rich Vitrinite	Y Yellow	1+ Yellow
	OC Outcrop	LD Liptodetrinite	VC VitriniteContamination	RI Replace-infill	M Mod. Amt.	3 Strong	VC Vitrinite Contam.	O Orange	2- Yellow-Orange
	NI No Inform.	U Undiffer.	VR Recycled Vitrinite		+ Large Amt.	4 Intense	VR Recycled Vitrinite	R Red	2 Golden
	C Coal	S Sporinite			++ Abundant			B Brown	2+ Amber
MICROSCOPE		R Resinite						BL Black	3- Reddish Brown
	K Kerogen	O Other							3 Medium Brown
X Zeiss	WR Whole Rock								3+ Dark Brown
	n.d. Not Determined							L Light	4- Brown-Black
								D Dark	4 Black
									4+ Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

93 SAMPLES

DGSI Project: 97/3992

DGSI

DGSI NUMBER	DATE: 10/30/97 / IDENTIFICATION	PREPARATION/ SAMPLE TYPE	ORGANIC MATTER (%) — LIPIDS — UNSTRUCTURED: UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINIZED	STRUCTURED: TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	HUMIC: INERTINITE	VITRINITE	OTHER: TYPE	TYPE	RELATIVE ABUNDANCE: PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	VITRINITE: NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	FLUORESCENCE / TAI — REFLECTED — LIPIDS: UNSTR. COLOR	UNSTR. INTENSITY	STRU. COLOR	STRU. INTENSITY	BACKGROUND INTENSITY	TRANSMITTED — LIPIDS — UNSTR. TAI VALUE	UNSTR. FLUOR. COLOR	UNSTR. FLUOR. INTENSITY	STRU. TAI VALUE	STRU. FLUOR. COLOR	STRU. FLUOR. INTENSITY	Ro: VITRINITE REFLECTANCE OR EQUIVALENCY
401	97R0868	K/CC				50	U T	S T				5	25	VL 20		MA	-	+	M	-	M	-		BL	0	O	1	4	n.d.			2	O	1 2	- V 0.58
Comments: *Some lower rank vitrinite and VL have dark ox.*																																			
402	97R0869	K/CC				50	LD T					5	40	VL 5		F MA	M	+	M	-	-	M		BL	0	O	1	3	3	BL	0		O	1 2	- V 0.58
Comments: *Moderate ox.*																																			
403	97R0870	K/CC				50	LD T					5	35	VL 10		F MA	M	+	+	T	-			BL	0	O	1	4	n.d.				O	1 2	- V 0.63
Comments:																																			
404	97R0871	K/CC				35	LD 5					10	40	VL 10		F MA	M	M	+	-	-	T	T	BL	0	O	1	4	n.d.				O Y	1 2	- V 0.62
Comments: *Trace coked vitrinite.*																																			
405	97R0872	K/CC				45	LD 5					10	35	VL 5		F MA	M	+	+	-	-		T	BL	0	O	1	4	3+ 2-	BL YB	0 1		O Y	1 2	- V 0.73
Comments: *Trace graphite.*																																			

ANALYST

X O'Connor

MICROSCOPE

X Zeiss

SAMPLE TYPE/PREP		STRUCTURED LIPIDS		OTHER ORGANIC MATTER		PYRITE		ABUND.		FLUOR. INTENS.		VIT. REFLECT. EQUIVALENCE		FLUOR. COLOR		TAI COLOR VALUES	
CTG	Cuttings	AL	Alginite	E	Exsudatinite	E	Euhedral	N	None	0	None	B	Bitumen	W	White	1-	Straw Yellow
CC	Conv. Core	SB	Suberinite	G	Graptolites	F	Framboid	T	Trace	1	Weak	G	Graptolites	G	Green	1	Pale Yellow
SWC	SideWallCore	C	Cutinite	VL	Lipid-Rich Vitrinite	MA	Massive	-	Small Amt.	2	Moderate	VL	Lipid-Rich Vitrinite	Y	Yellow	1+	Yellow
OC	Outcrop	LD	Liptodetrinite	VC	VitriniteContamination	RI	Replace-infill	M	Mod. Amt.	3	Strong	VC	Vitrinite Contam.	O	Orange	2-	Yellow-Orange
NI	No Inform.	U	Undiffer.	VR	Recycled Vitrinite			+	Large Amt.	4	Intense	VR	Recycled Vitrinite	R	Red	2	Golden
C	Coal	S	Sporinite					++	Abundant					B	Brown	2+	Amber
		R	Resinite											BL	Black	3-	Reddish Brown
K	Kerogen	O	Other													3	Medium Brown
WR	Whole Rock															3+	Dark Brown
														L	Light	4-	Brown-Black
n.d.	Not Determined													D	Dark	4	Black
																4+	Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

93 SAMPLES

DGSI Project: 97/3992

DGSI

DGSI NUMBER	DATE: 10/30/97 IDENTIFICATION	PREPARATION/ SAMPLE TYPE	ORGANIC MATTER (%) LIPIDS UNSTRUCTURED: UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINIZED	STRUCTURED: TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	HUMIC: INERTINITE	VITRINITE	OTHER: TYPE	TYPE	RELATIVE ABUNDANCE: PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	VITRINITE: NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	FLUORESCENCE / TAI REFLECTED LIPIDS: COLOR	INTENSITY	COLOR	INTENSITY	BACKGROUND INTENSITY	TRANSMITTED LIPIDS UNSTR. TAI: VALUE	UNSTR. FLUOR.: COLOR	INTENSITY	STRU. TAI: VALUE	STRU. FLUOR.: COLOR	INTENSITY	Ro: VITRINITE REFLECTANCE OR EQUIVALENCY
406	97R0873	K/CC				45	LD T					5	50	VL T		F	M	M	+	-	T	T		BL	0			4	n.d.				O	1	- V 70.91
Comments:																																			
407	97R0874	K/CC				60	LD T				T	5	30	VL 5		F	+	+	+	-	-		T	DB	1	O	2	4	3-	BL	0		O	1	- V 0.95
Comments:	*Trace of angular solid bitumen, granular solid bitumen, and graphite.*																																		
408	97R0875	K/CC				60	LD T				10	5	10	VL 15		F MA	+	+	M	-	M			DB	1			4	3- 2+	BL	0		O	1	- V 1.01
Comments:	*Unstructured lipids show angular texture in transmitted light.*																																		
409	97R0876	K/CC				90	LD T				T	5	5			MA F	++	+	M	M				DB	1			4	2+	DOB	1		O	1 2	- V 71.05
Comments:	*Fine-grained unstructured lipids.*																																		
410	97R0877	K/CC				85						5	5	VL 5		F E	M	M	M	-	M			BL	0			4	3- 2+	BL	0				- V 71.05
Comments:																																			

ANALYST

x O'Connor

MICROSCOPE

x Zeiss

SAMPLE TYPE/PREP

CTG	Cuttings
CC	Conv. Core
SWC	SideWallCore
OC	Outcrop
NI	No Inform.
C	Coal
K	Kerogen
WR	Whole Rock
n.d.	Not Determined

STRUCTURED LIPIDS

AL	Alginite
SB	Suberinite
C	Cutinite
LD	Liptodetrinite
U	Undiffer.
S	Sporinite
R	Resinite
O	Other

OTHER ORGANIC MATTER

E	Exsudatinite
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	VitriniteContamination
VR	Recycled Vitrinite

PYRITE

E	Euhedral
F	Framboid
MA	Massive
RI	Replace-infill

ABUND.

N	None
T	Trace
-	Small Amt.
M	Mod. Amt.
+	Large Amt.
++	Abundant

FLUOR. INTENS.

0	None
1	Weak
2	Moderate
3	Strong
4	Intense

VIT. REFLECT. EQUIVALENCE

B	Bitumen
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	Vitrinite Contam.
VR	Recycled Vitrinite

FLUOR. COLOR

W	White
G	Green
Y	Yellow
O	Orange
R	Red
B	Brown
BL	Black
L	Light
D	Dark

TAI COLOR VALUES

1-	Straw Yellow
1	Pale Yellow
1+	Yellow
2-	Yellow-Orange
2	Golden
2+	Amber
3-	Reddish Brown
3	Medium Brown
3+	Dark Brown
4-	Brown-Black
4	Black
4+	Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

93 SAMPLES

DGSI Project: 97/3992

DGSI

DGSI NUMBER	DATE: 10/30/97 IDENTIFICATION	PREPARATION/ SAMPLE TYPE	ORGANIC MATTER (%) LIPIDS UNSTRUCTURED: UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINIZED	STRUCTURED: TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	HUMIC: INERTINITE	VITRINITE	OTHER: TYPE	TYPE	RELATIVE ABUNDANCE: PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	VITRINITE: NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	FLUORESCENCE / TAI REFLECTED LIPIDS: UNSTR. COLOR	UNSTR. INTENSITY	STRU. COLOR	STRU. INTENSITY	BACKGROUND INTENSITY	TRANSMITTED LIPIDS: UNSTR. TAI	UNSTR. FLUOR. COLOR	UNSTR. FLUOR. INTENSITY	STRU. TAI	STRU. FLUOR. COLOR	STRU. FLUOR. INTENSITY	Ro: VITRINITE REFLECTANCE OR EQUIVALENCY
411	97R0878	KCC				85						5	10	VL T		F MA	+	+	+	-	T			BL	0			4	2+	BL	0				- V ?1.00
Comments: *Fine-grained micrinized lipids.*																																			
412	97R0879	KCC				95						T	5	VL T		F MA	+	+	+	T	T			BL	0			4	2+	BL	0				- V ?0.98
Comments: *Same.*																																			
413	97R0880	KCC				95						T	5			F MA	M	+	+	T				BL	0			4	2+ 3-	BL	0				- -
Comments: *Same.*																																			
414	97R0881	KCC				95	LD T				T	T	T	VL 5		F MA	++	+	T	-	+			BL	0			4	3-	BL	0		O	1	- -
Comments:																																			
415	97R0882	KCC	80				LD T				T	10	10	VL T		F MA	M	M	+	-	-		T	DB BL	1 0			4	2+	BL	0		O	1	- V ?1.07
Comments: *Unstructured lipids have grainy-massive texture. Trace graphite.*																																			

ANALYST

X O'Connor

MICROSCOPE

X Zeiss

SAMPLE TYPE/PREP

CTG	Cuttings
CC	Conv. Core
SWC	SideWallCore
OC	Outcrop
NI	No Informa.
C	Coal
K	Kerogen
WR	Whole Rock
n.d.	Not Determined

STRUCTURED LIPIDS

AL	Alginite
SB	Suberinite
C	Cutinite
LD	Liptodetrinite
U	Undiffer.
S	Sporinite
R	Resinite
O	Other

OTHER ORGANIC MATTER

E	Exsudatinite
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	VitriniteContamination
VR	Recycled Vitrinite

PYRITE

E	Euhedral
F	Framboid
MA	Massive
RI	Replace-infill

ABUND.

N	None
T	Trace
-	Small Amt.
M	Mod. Amt.
+	Large Amt
++	Abundant

FLUOR. INTENS.

0	None
1	Weak
2	Moderate
3	Strong
4	Intense

VIT. REFLECT. EQUIVALENCE

B	Bitumen
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	Vitrinite Contam.
VR	Recycled Vitrinite

FLUOR. COLOR

W	White
G	Green
Y	Yellow
O	Orange
R	Red
B	Brown
BL	Black
L	Light
D	Dark

TAI COLOR VALUES

1-	Straw Yellow
1	Pale Yellow
1+	Yellow
2-	Yellow-Orange
2	Golden
2+	Amber
3-	Reddish Brown
3	Medium Brown
3+	Dark Brown
4-	Brown-Black
4	Black
4+	Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

93 SAMPLES

DGSI Project: 97/3992

DGSI

DGSI NUMBER	DATE: 10/30/97 IDENTIFICATION	PREPARATION/ SAMPLE TYPE	ORGANIC MATTER (%) LIPIDS UNSTRUCTURED UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINITIZED	STRUCTURED TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	HUMIC INERTINITE	VITRINITE	OTHER TYPE	TYPE	RELATIVE ABUNDANCE PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	VITRINITE NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	FLUORESCENCE / TAI REFLECTED LIPIDS UNSTR. COLOR	INTENSITY	STRU. COLOR	INTENSITY	BACKGROUND INTENSITY	TRANSMITTED LIPIDS UNSTR. TAI VALUE	FLUOR. COLOR	INTENSITY	STRU. TAI VALUE	FLUOR. COLOR	INTENSITY	Ro VITRINITE REFLECTANCE OR EQUIVALENCY
							LD							VL		MA								BL	0										1	-
416	97R0883	K/CC	85				T				5	5	T	5		F	+	+	T	M	+	T	T	DB	1			4	3-	BL	0			O	2	V ?1.08
Comments:	*Unstructured lipids same as in 97R0882. Trace graphite.*																																			
							LD							VL		F								BL	0				2+							-
417	97R0884	K/CC	80				T				5	10	5	T		MA	M	M	+	-	T	T	T	DB	1			4	3-	BL	0			O	1	-
Comments:	*Same.*																																			
														VL		MA																				-
418	97R0885	K/CC				85					T	5	5	5		F	++	M	M	-	M	T		BL	0			4	3-	BL	0					-
Comments:	*Fine-grained, micrinized lipids.*																																			
Comments:																																				
Comments:																																				

ANALYST

X O'Connor

MICROSCOPE

X Zeiss

SAMPLE TYPE/PREP

CTG	Cuttings
CC	Conv. Core
SWC	SideWallCore
OC	Outcrop
NI	No Inform.
C	Coal
K	Kerogen
WR	Whole Rock
n.d.	Not Determined

STRUCTURED LIPIDS

AL	Alginite
SB	Subcrinite
C	Cutinite
LD	Liptodetrinite
U	Undiffer.
S	Sporinite
R	Resinite
O	Other

OTHER ORGANIC MATTER

E	Exsudatinite
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	VitriniteContamination
VR	Recycled Vitrinite

PYRITE

E	Euhedral
F	Framboid
MA	Massive
RI	Replace-infill

ABUND.

N	None
T	Trace
-	Small Amt.
M	Mod. Amt.
+	Large Amt.
++	Abundant

FLUOR. INTENS.

0	None
1	Weak
2	Moderate
3	Strong
4	Intense

VIT. REFLECT. EQUIVALENCE

B	Bitumen
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	Vitrinite Contam.
VR	Recycled Vitrinite

FLUOR. COLOR

W	White
G	Green
Y	Yellow
O	Orange
R	Red
B	Brown
BL	Black
L	Light
D	Dark

TAI COLOR VALUES

1-	Straw Yellow
1	Pale Yellow
1+	Yellow
2-	Yellow-Orange
2	Golden
2+	Amber
3-	Reddish Brown
3	Medium Brown
3+	Dark Brown
4-	Brown-Black
4	Black
4+	Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

93 SAMPLES

DGSI Project: 97/3992

DGSI

DGSI NUMBER	DATE: 10/17/97 / IDENTIFICATION	PREPARATION/ SAMPLE TYPE	ORGANIC MATTER (%)											RELATIVE ABUNDANCE									FLUORESCENCE / TAI										Ro
			LIPIDS									HUMIC		OTHER									REFLECTED					TRANSMITTED						
			UNSTRUCTURED				STRUCTURED											VITRINITE					LIPIDS					LIPIDS						
																							UNSTR.		STRU.			UNSTR.			STRU.			
																												TAI	FLUOR.		TAI	FLUOR.		
			UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINIZED	TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	INERTINITE	VITRINITE	TYPE	TYPE	PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	COLOR	INTENSITY	COLOR	INTENSITY	BACKGROUND INTENSITY	VALUE	COLOR	INTENSITY	VALUE	COLOR	INTENSITY	VITRINITE REFLECTANCE OR EQUIVALENCY
301	97R0924	K/CC				50	LD T					5	20	VL 25		MA	T	+	-	M	+	-	-	BL	D	O	1	4	n.d.				O	1 2	- V 0.58
Comments:	*Dense groundmass of mic. lipids. Some low-rank material is ox. Some vit. is coking.*																																	
302	97R0925	K/CC				35	LD T				7	5	20	VL 40		MA	-	M	-	M	+	M	T	BL	D	O	1	3	n.d.				O	1 2	- V 0.61
Comments:																																		
303	97R0926	K/CC				60	LD T					10	15	VL 15		F MA	M	+	M	M	M		T	BL	D	O	1	4	n.d.				O	1 2	- V 1.12
Comments:	*Trace coking vitrinite and graphite.*																																	
304	97R0927	K/CC				65	LD T					10	15	VL 10		F MA	M	+	M	M	M			BL	D			4	n.d.				O	1 2	- V 1.15
Comments:																																		
305	97R0928	K/CC	90								5	T	5	VL T		F	++	+	+	T	T			BL	D			3 4	3-	BL	D			- V 71.32
Comments:	*Abundant pyrite mixed with unstr. lipids. Granular solid bitumen.*																																	

ANALYST

X O'Connor

MICROSCOPE

X Zeiss

SAMPLE TYPE/PREP	
CTG	Cuttings
CC	Conv. Core
SWC	SideWallCore
OC	Outcrop
NI	No Inform.
C	Coal
K	Kerogen
WR	Whole Rock
n.d.	Not Determined

STRUCTURED LIPIDS	
AL	Alginite
SB	Suberinite
C	Cutinite
LD	Liptodetrinite
U	Undiffer.
S	Sporinite
R	Resinite
O	Other

OTHER ORGANIC MATTER	
E	Exsudatinite
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	VitriniteContamination
VR	Recycled Vitrinite

PYRITE	
E	Euhedral
F	Framboid
MA	Massive
RI	Replace-infill

ABUND.	
N	None
T	Trace
-	Small Amt.
M	Mod. Amt.
+	Large Amt.
++	Abundant

FLUOR. INTENS.	
0	None
1	Weak
2	Moderate
3	Strong
4	Intense

VIT. REFLECT. EQUIVALENCE	
B	Bitumen
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	Vitrinite Contam.
VR	Recycled Vitrinite

FLUOR. COLOR	
W	White
G	Green
Y	Yellow
O	Orange
R	Red
B	Brown
BL	Black
L	Light
D	Dark

TAI COLOR VALUES	
1-	Straw Yellow
1	Pale Yellow
1+	Yellow
2-	Yellow-Orange
2	Golden
2+	Amber
3-	Reddish Brown
3	Medium Brown
3+	Dark Brown
4-	Brown-Black
4	Black
4+	Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

DGSI

93 SAMPLES

DGSI Project: 97/3992

DGSI NUMBER	DATE: 10/17/97 IDENTIFICATION	PREPARATION/ SAMPLE TYPE	ORGANIC MATTER (%) LIPIDS UNSTRUCTURED: UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINIZED	STRUCTURED: TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	HUMIC: INERTINITE	VITRINITE	OTHER: TYPE	TYPE	RELATIVE ABUNDANCE: PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	VITRINITE: NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	FLUORESCENCE / TAI REFLECTED LIPIDS: UNSTR. COLOR	INTENSITY	STRU. COLOR	INTENSITY	BACKGROUND INTENSITY	TRANSMITTED LIPIDS: UNSTR. TAI	FLUOR. COLOR	INTENSITY	STRU. TAI	FLUOR. COLOR	INTENSITY	Ro: VITRINITE REFLECTANCE OR EQUIVALENCY
306	97R0929	K/CC				45					50	T	T	VL 5		F	+	+	T	-	+			BL	0			4	3-	BL	0				B ?1.25 V ?1.36
Comments: *Granular solid bitumen.*																																				
307	97R0930	K/CC				55					25	5	5	10		F	+	+	-	-	+			BL	0			4	3-	BL DOB	0 1				- -
Comments: *Similar with more vitrinite and VL.*																																				
308	97R0931	K/CC				90	U T				T	5	5			MA F	+	M	+	-				BL	0			4	3-	BL	0				- -
Comments:																																				
309	97R0932	K/CC				90						5	5			E F	M	M	+					BL	0			4	3-	BL	0				- V ?1.66
Comments: *Dense, fine-grained, micrinized lipids.*																																				
310	97R0933	K/CC				90					5	5	T			F MA	M	+	+					BL	0			0	3+	BL	0				- V ?2.11
Comments: *Micrinized lipids have angular holes and sponge texture.*																																				

ANALYST

X O'Connor

MICROSCOPE

X Zeiss

SAMPLE TYPE/PREP

CTG	Cuttings
CC	Conv. Core
SWC	SideWallCore
OC	Outcrop
NI	No Inform.
C	Coal
K	Kerogen
WR	Whole Rock
n.d.	Not Determined

STRUCTURED LIPIDS

AL	Alginite
SB	Suberinite
C	Cutinite
LD	Liptodetrinite
D	Undiffer.
S	Sporinite
R	Resinite
O	Other

OTHER ORGANIC MATTER

E	Exsudatinite
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	VitriniteContamination
VR	Recycled Vitrinite

PYRITE

E	Euhedral
F	Framboid
MA	Massive
RI	Replace-infill

ABUND.

N	None
T	Trace
-	Small Amt
M	Mod. Amt.
+	Large Amt.
++	Abundant

FLUOR. INTENS.

0	None
1	Weak
2	Moderate
3	Strong
4	Intense

VIT. REFLECT. EQUIVALENCE

B	Bitumen
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	Vitrinite Contam.
VR	Recycled Vitrinite

FLUOR. COLOR

W	White
G	Green
Y	Yellow
O	Orange
R	Red
B	Brown
BL	Black
L	Light
D	Dark

TAI COLOR VALUES

1-	Straw Yellow
1	Pale Yellow
1+	Yellow
2-	Yellow-Orange
2	Golden
2+	Amber
3-	Reddish Brown
3	Medium Brown
3+	Dark Brown
4-	Brown-Black
4	Black
4+	Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

93 SAMPLES

DGSI Project: 97/3992

DGSI

DGSI NUMBER	DATE: 10/17/97 IDENTIFICATION	PREPARATION/ SAMPLE TYPE	ORGANIC MATTER (%) LIPIDS UNSTRUCTURED UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINIZED	STRUCTURED TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	HUMIC INERTINITE	VITRINITE	OTHER TYPE	TYPE	RELATIVE ABUNDANCE PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	VITRINITE NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	FLUORESCENCE / TAI REFLECTED LIPIDS UNSTR. COLOR	INTENSITY	STRU. COLOR	INTENSITY	BACKGROUND INTENSITY	TRANSMITTED LIPIDS UNSTR. TAI VALUE	FLUOR. COLOR	INTENSITY	STRU. TAI VALUE	FLUOR. COLOR	INTENSITY	Ro VITRINITE REFLECTANCE OR EQUIVALENCY
311	97R0934	K/CC				80					20	T	T			F E	M	+	+					BL	0			0	3+	BL	0				- V 72.29

Comments: *Granular solid bitumen in micrinized lipids.*

Comments:

Comments:

Comments:

Comments:

ANALYST

X O'Connor

MICROSCOPE

X Zeiss

SAMPLE TYPE/PREP		STRUCTURED LIPIDS		OTHER ORGANIC MATTER		PYRITE		ABUND.		FLUOR. INTENS.		VIT. REFLECT. EQUIVALENCE		FLUOR. COLOR		TAI COLOR VALUES	
CTG	Cuttings	AL	Alginite	E	Exsudatinite	E	Euhedral	N	None	0	None	B	Bitumen	W	White	1-	Straw Yellow
CC	Conv. Core	SB	Suberinite	G	Graptolites	F	Framboid	T	Trace	1	Weak	G	Graptolites	G	Green	1	Pale Yellow
SWC	SideWallCore	C	Cutinite	VL	Lipid-Rich Vitrinite	MA	Massive	-	Small Amt.	2	Moderate	VL	Lipid-Rich Vitrinite	Y	Yellow	1+	Yellow
OC	Outcrop	LD	Liptodetrinite	VC	VitriniteContamination	RI	Replace-infill	M	Mod. Amt.	3	Strong	VC	Vitrinite Contam.	O	Orange	2-	Yellow-Orange
NI	No Inform.	U	Undiffer.	VR	Recycled Vitrinite			+	Large Amt.	4	Intense	VR	Recycled Vitrinite	R	Red	2	Golden
C	Coal	S	Sporinite					++	Abundant					B	Brown	2+	Amber
		R	Resinite											BL	Black	3-	Reddish Brown
K	Kerogen	O	Other													3	Medium Brown
WR	Whole Rock															3+	Dark Brown
n.d.	Not Determined													L	Light	4-	Brown-Black
														D	Dark	4	Black
																4+	Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

DGSI

93 SAMPLES

DGSI Project: 97/3992

DGSI NUMBER	DATE: 10/15/97 / IDENTIFICATION	PREPARATION/ SAMPLE TYPE	ORGANIC MATTER (%) — LIPIDS — UNSTRUCTURED: UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINIZED	STRUCTURED: TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	HUMIC: INERTINITE	VITRINITE	OTHER: TYPE	TYPE	RELATIVE ABUNDANCE: PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	VITRINITE: NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	FLUORESCENCE / TAI — REFLECTED — LIPIDS: UNSTR. COLOR	UNSTR. INTENSITY	STRU. COLOR	STRU. INTENSITY	BACKGROUND INTENSITY	TRANSMITTED — LIPIDS — UNSTR. TAI VALUE	UNSTR. FLUOR. COLOR	UNSTR. FLUOR. INTENSITY	STRU. TAI VALUE	STRU. FLUOR. COLOR	STRU. FLUOR. INTENSITY	Ro: VITRINITE REFLECTANCE OR EQUIVALENCY
201	97R0935	KCC				40	LD T					10	50	VL T		MA	-	M	M	-	T	M	T	BL	0			4	n.d.				O	1 2	- V ?0.52
Comments: *Small terrestrial fragments. Trace coking. Trace graphite. Some dark ox. on lower rank vit.*																																			
202	97R0936	KCC				25	LD 5	S T			T	10	10	VL 50		MA F	-	M	-	-	+	-	T	BL	0	O	1	4	n.d.			2	O Y	1 2	- V 0.46
Comments: *Moderate size fragments of VL. Trace graphite.*																																			
203	97R0938	KCC				40	LD T					10	25	VL 25		MA	M	M	M	-	M	-		BL	0	O	1	3	3+ 4-	BL	0		O	1	- V ?0.54
Comments:																																			
204	97R0939	KCC				10	LD 5					5	35	VL 45		MA	-	M	M	-	M	-	T	BL DB	0 1	O	1	3	n.d.				O Y	1 2	- V 0.52
Comments: *Trace graphite.*																																			
205	97R0940	KCC				15	LD 5					5	10	VL 65		MA	-	M	-	M	+	T		BL DB	0 1	Y	3	4	n.d.				O Y	1 2	- V 0.59
Comments:																																			

ANALYST

X O'Connor

MICROSCOPE

X Zeiss

SAMPLE TYPE/PREP

CTG	Cuttings
CC	Conv. Core
SWC	SideWallCore
OC	Outcrop
NI	No Inform.
C	Coal
K	Kerogen
WR	Whole Rock
n.d.	Not Determined

STRUCTURED LIPIDS

AL	Alginite
SB	Suberinite
C	Cutinite
LD	Liptodetrinite
U	Undiffer.
S	Sporinite
R	Resinite
O	Other

OTHER ORGANIC MATTER

E	Exsudatinite
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	VitriniteContamination
VR	Recycled Vitrinite

PYRITE

E	Euhedral
F	Framboid
MA	Massive
RI	Replace-infill

ABUND.

N	None
T	Trace
-	Small Amt.
M	Mod. Amt.
+	Large Amt.
++	Abundant

FLUOR. INTENS.

0	None
1	Weak
2	Moderate
3	Strong
4	Intense

VIT. REFLECT. EQUIVALENCE

B	Bitumen
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	Vitrinite Contam.
VR	Recycled Vitrinite

FLUOR. COLOR

W	White
G	Green
Y	Yellow
O	Orange
R	Red
B	Brown
BL	Black
L	Light
D	Dark

TAI COLOR VALUES

1-	Straw Yellow
1	Pale Yellow
1+	Yellow
2-	Yellow-Orange
2	Golden
2+	Amber
3-	Reddish Brown
3	Medium Brown
3+	Dark Brown
4-	Brown-Black
4	Black
4+	Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

DGSI

93 SAMPLES

DGSI Project: 97/3992

DGSI NUMBER	DATE: 10/16/97 IDENTIFICATION	PREPARATION/ SAMPLE TYPE	ORGANIC MATTER (%) LIPIDS UNSTRUCTURED: UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINIZED	LIPIDS STRUCTURED: TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	HUMIC: INERTINITE	VITRINITE	OTHER: TYPE	TYPE	RELATIVE ABUNDANCE: PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	VITRINITE: NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	FLUORESCENCE / TAI REFLECTED LIPIDS: UNSTR. COLOR	INTENSITY	STRU. COLOR	INTENSITY	BACKGROUND INTENSITY	TRANSMITTED LIPIDS: UNSTR. TAI	UNSTR. FLUOR. COLOR	UNSTR. FLUOR. INTENSITY	STRU. TAI	STRU. FLUOR. COLOR	STRU. FLUOR. INTENSITY	Ro: VITRINITE REFLECTANCE OR EQUIVALENCY
206	97R0941	K/CC				45	LD 5					10	25	VL 15		MA	M	M	+	-	M			BL DB	0 1	O	1	4	2+	BL	0		O	1	- V 70.90
Comments:																																			
207	97R0942	K/CC					LD T					10	50	VL 40		F MA	-	+	M	-	M		-					4					O	1	- -
Comments:	*Coal with some graphite*																																		
208	97R0943	K/CC				45	U T					5	25	VL 25		MA	M	M	M	M	M			BL	0			4	2+	BL	0				- V 71.32
Comments:																																			
209	97R0944	K/CC				70	U T					10	20			MA	M	M	+				T	BL	0			4	3	BL	0				- V 71.49
Comments:	*Most Ro is on small fragments. Trace graphite.*																																		
210	97R0945	K/CC				85	U T				?	5	10	VL T		F MA	+	M	+	-	T		T	BL	0			4	3-	BL	0				- V 71.58
Comments:	*Similar to previous sample.*																																		

ANALYST

X O'Connor

MICROSCOPE

X Zeiss

SAMPLE TYPE/PREP		STRUCTURED LIPIDS		OTHER ORGANIC MATTER		PYRITE		ABUND.		FLUOR. INTENS.		VIT. REFLECT. EQUIVALENCE		FLUOR. COLOR		TAI COLOR VALUES	
CTG	Cuttings	AL	Alginite	E	Exsudatinite	E	Euhedral	N	None	0	None	B	Bitumen	W	White	1-	Straw Yellow
CC	Conv. Core	SB	Suberinite	G	Graptolites	F	Framboid	T	Trace	1	Weak	G	Graptolites	G	Green	1	Pale Yellow
SWC	SideWallCore	C	Cutinite	VL	Lipid-Rich Vitrinite	MA	Massive	-	Small Amt.	2	Moderate	VL	Lipid-Rich Vitrinite	Y	Yellow	1+	Yellow
OC	Outcrop	LD	Liptodetrinite	VC	VitriniteContamination	RI	Replace-infill	M	Mod. Amt.	3	Strong	VC	Vitrinite Contam.	O	Orange	2-	Yellow-Orange
NI	No Inform.	U	Undiffer.	VR	Recycled Vitrinite			+	Large Amt.	4	Intense	VR	Recycled Vitrinite	R	Red	2	Golden
C	Coal	S	Sporinite					++	Abundant					B	Brown	2+	Amber
		R	Resinite											BL	Black	3-	Reddish Brown
K	Kerogen	O	Other													3	Medium Brown
WR	Whole Rock															3+	Dark Brown
n.d.	Not Determined													L	Light	4-	Brown-Black
														D	Dark	4	Black
																4+	Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

DGSI

93 SAMPLES

DGSI Project: 97/3992

DGSI NUMBER	DATE: 10/15/97 IDENTIFICATION	PREPARATION/ SAMPLE TYPE	ORGANIC MATTER (%) LIPIDS UNSTRUCTURED UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINIZED	STRUCTURED TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	HUMIC INERTINITE	VITRINITE	OTHER TYPE	TYPE	RELATIVE ABUNDANCE PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	VITRINITE NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	FLUORESCENCE / TAI REFLECTED LIPIDS UNSTR. COLOR	INTENSITY	STRU. COLOR	INTENSITY	BACKGROUND INTENSITY	TRANSMITTED LIPIDS UNSTR. TAI VALUE	FLUOR. COLOR	INTENSITY	STRU. TAI VALUE	FLUOR. COLOR	INTENSITY	Ro VITRINITE REFLECTANCE OR EQUIVALENCY
211	97R0946	K/CC				85					10	T	5			F E	M	M	+		?			BL	0			2	3+	BL	0				- V ?1.70
Comments: *Granular solid bitumen, some has angular shape.*																																				
212	97R0947	K/CC				95						T	5			F	M	M	+					BL	0			2	3+	BL	0				- V ?1.84
Comments: *Stringy micrinized lipids.*																																				
213	97R0948	K/CC				95						5	T			F E	M	M	+					BL	0			3	3+	BL	0				- V ?1.88
Comments: *Same as previous sample.*																																				
214	97R0949	K/CC				95						5	T			MA	M	M	+					BL	0			2 3	3+	BL	0				- V 2.12
Comments: *Same.*																																				
215	97R0950	K/CC				50					50	T	T	VL T		F MA	M	M	+		T			BL	0			0	3+	BL	0				- V ?2.17
Comments: *Micrinized lipids with small, angular solid bitumen fragments. Trace VL contam.*																																				

ANALYST

X O'Connor

MICROSCOPE

X Zeiss

SAMPLE TYPE/PREP

CTG	Cuttings
CC	Conv. Core
SWC	SideWallCore
OC	Outcrop
NI	No Inform.
C	Coal
K	Kerogen
WR	Whole Rock
n.d.	Not Determined

STRUCTURED LIPIDS

AL	Alginite
SB	Suberinite
C	Cutinite
LD	Liptodetrinite
U	Undiffer.
S	Sporinite
R	Resinite
O	Other

OTHER ORGANIC MATTER

E	Exsudatinite
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	VitriniteContamination
VR	Recycled Vitrinite

PYRITE

E	Euhedral
F	Framboid
MA	Massive
RI	Replace-infill

ABUND.

N	None
T	Trace
-	Small Amt.
M	Mod. Amt.
+	Large Amt.
++	Abundant

FLUOR. INTENS.

0	None
1	Weak
2	Moderate
3	Strong
4	Intense

VIT. REFLECT. EQUIVALENCE

B	Bitumen
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	Vitrinite Contam.
VR	Recycled Vitrinite

FLUOR. COLOR

W	White
G	Green
Y	Yellow
O	Orange
R	Red
B	Brown
BL	Black
L	Light
D	Dark

TAI COLOR VALUES

1-	Straw Yellow
1	Pale Yellow
1+	Yellow
2-	Yellow-Orange
2	Golden
2+	Amber
3-	Reddish Brown
3	Medium Brown
3+	Dark Brown
4-	Brown-Black
4	Black
4+	Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

93 SAMPLES

DGSI Project: 97/3992

DGSI

DGSI NUMBER	DATE: 10/15/97 / IDENTIFICATION	PREPARATION/ SAMPLE TYPE	ORGANIC MATTER (%) LIPIDS UNSTRUCTURED: UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINIZED	STRUCTURED: TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	HUMIC: INERTINITE	VITRINITE	OTHER: TYPE	TYPE	RELATIVE ABUNDANCE: PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	VITRINITE: NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	FLUORESCENCE / TAI REFLECTED LIPIDS: UNSTR. COLOR	INTENSITY	STRU. COLOR	INTENSITY	BACKGROUND INTENSITY	TRANSMITTED LIPIDS: UNSTR. TAI VALUE	FLUOR. COLOR	INTENSITY	STRU. TAI VALUE	FLUOR. COLOR	INTENSITY	Ro: VITRINITE REFLECTANCE OR EQUIVALENCY
216	97R0951	K/CC				75					?	5	10	VL 10		E F	+	-	M	M	M			BL	0			0	3+	BL	0				- V ?2.34
Comments: *Small amount of organic matter with large amount of pyrite. High-rank VL.*																																				
217	97R0952	K/CC				90					T	5	5			E F	+	M	+				T	BL	0			0	3+	BL	0				- V ?2.29
Comments: *Trace graphite.*																																				
218	97R0953	K/CC				85	S T				T	10	5			E F	++	-	+				T	BL	0			0	3+	BL	0	3+	BL	0	- V ?2.48
Comments: *Small amount of organic matter.*																																				
219	97R0954	K/CC				70	U T	S T			?	15	15			F E	M	M	M	M				BL	0			0	3+	BL	0	4-	BL	0	- V 2.47
Comments: *Ro on vitrinite-like fragments.*																																				
220	97R0955	K/CC				70	U 5				?	10	15			F E	M	M	+	-				BL	0			0	3+ 4-	BL	0				- V 2.58
Comments: *Similar to previous sample.*																																				

ANALYST

X O'Connor

MICROSCOPE

X Zeiss

SAMPLE TYPE/PREP		STRUCTURED LIPIDS		OTHER ORGANIC MATTER		PYRITE		ABUND.		FLUOR. INTENS.		VIT. REFLECT. EQUIVALENCE		FLUOR. COLOR		TAI COLOR VALUES	
CTG	Cuttings	AL	Alginite	E	Exsudatinite	E	Euhedral	N	None	0	None	B	Bitumen	W	White	1-	Straw Yellow
CC	Conv. Core	SB	Subcrinite	G	Graptolites	F	Framboid	T	Trace	1	Weak	G	Graptolites	G	Green	1	Pale Yellow
SWC	SideWallCore	C	Cutinite	VL	Lipid-Rich Vitrinite	MA	Massive	-	Small Amt.	2	Moderate	VL	Lipid-Rich Vitrinite	Y	Yellow	1+	Yellow
OC	Outcrop	LD	Liptodetrinite	VC	VitriniteContamination	RI	Replace-infill	M	Mod. Amt.	3	Strong	VC	Vitrinite Contam.	O	Orange	2-	Yellow-Orange
NI	No Inform.	U	Undiffer.	VR	Recycled Vitrinite			+	Large Amt.	4	Intense	VR	Recycled Vitrinite	R	Red	2	Golden
C	Coal	S	Sporinite					++	Abundant					B	Brown	2+	Amber
		R	Resinite											BL	Black	3-	Reddish Brown
K	Kerogen	O	Other													3	Medium Brown
WR	Whole Rock															3+	Dark Brown
														L	Light	4-	Brown-Black
n.d.	Not Determined													D	Dark	4	Black
																4+	Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

DGSI

93 SAMPLES

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221	97R0956	K/CC				50						15	35			F	M	+	+	T				BL	0			0	4-	BL	0					- V 2.80
Comments:																																					
222	97R0957	K/CC				60	U T					20	20			F	M	M	+				T	BL	0			0	4	BL	0					- V 2.74
Comments:	*Trace graphite.*																																				
223	97R0958	K/CC				T						T	T			MA	M	T	+					BL	0			0	4- 4	BL	0					- V ?2.84
Comments:	*Small amount of organic matter.*																																				
224	97R0959	K/CC	70									15	15			E F	+	+	M	M	?		T	BL	0			0	3+ 4-	BL	0					- V 2.62
Comments:	*Grainy unstr. lipids. Some vitrinite has texture of high-rank VL, some slight coking.*																																				
225	97R0960	K/CC				T						T	T				M	+	+					BL	0			0	4	BL	0					- V ?3.55
Comments:	*Small amount of organic matter.*																																				

ANALYST

X O'Connor

MICROSCOPE

X Zeiss

SAMPLE TYPE/PREP

CTG	Cuttings
CC	Conv. Core
SWC	SideWallCore
OC	Outcrop
NI	No Inform.
C	Coal
K	Kerogen
WR	Whole Rock
n.d.	Not Determined

STRUCTURED LIPIDS

AL	Alginite
SB	Suberinite
C	Cutinite
LD	Liptodetrinite
U	Undiffer.
S	Sporinite
R	Resinite
O	Other

OTHER ORGANIC MATTER

E	Exsudatinite
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	VitriniteContamination
VR	Recycled Vitrinite

PYRITE

E	Euhedral
F	Framboid
MA	Massive
RI	Replace-infill

ABUND.

N	None
T	Trace
-	Small Amt.
M	Mod. Amt.
+	Large Amt.
++	Abundant

FLUOR. INTENS.

0	None
1	Weak
2	Moderate
3	Strong
4	Intense

VIT. REFLECT. EQUIVALENCE

B	Bitumen
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	Vitrinite Contam.
VR	Recycled Vitrinite

FLUOR. COLOR

W	White
G	Green
Y	Yellow
O	Orange
R	Red
B	Brown
BL	Black
L	Light
D	Dark

TAI COLOR VALUES

1-	Straw Yellow
1	Pale Yellow
1+	Yellow
2-	Yellow-Orange
2	Golden
2+	Amber
3-	Reddish Brown
3	Medium Brown
3+	Dark Brown
4-	Brown-Black
4	Black
4+	Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

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226	97R0961	K/CC				20	U 5					50	25				N	+	M				M	BL	0			0	4	BL	0				- V 73.94
Comments: *Abundant semifusinite. Vitrinite is coking-some Ro values may be lowered.*																																				
227	97R0962	K/CC				10	U 5					30	55				N	+	+				-	BL	0			0	4	BL	0				- V 4.50
Comments:																																				
Comments:																																				
Comments:																																				
Comments:																																				

ANALYST	SAMPLE TYPE/PREP	STRUCTURED LIPIDS	OTHER ORGANIC MATTER	PYRITE	ABUND.	FLUOR. INTENS.	VIT. REFLECT. EQUIVALENCE	FLUOR. COLOR	TAI COLOR VALUES
X O'Connor	CTG Cuttings	AL Alginite	E Exsudatinite	E Euhedral	N None	0 None	B Bitumen	W White	1- Straw Yellow
	CC Conv. Core	SB Suberinite	G Graptolites	F Framboid	T Trace	1 Weak	G Graptolites	G Green	1 Pale Yellow
	SWC SideWallCore	C Cutinite	VL Lipid-Rich Vitrinite	MA Massive	- Small Amt.	2 Moderate	VL Lipid-Rich Vitrinite	Y Yellow	1+ Yellow
	OC Outcrop	LD Liptodetrinite	VC VitriniteContamination	RE Replace-infill	M Mod. Amt.	3 Strong	VC Vitrinite Contam.	O Orange	2- Yellow-Orange
	NI No Inform.	U Undiffer.	VR Recycled Vitrinite		+ Large Amt.	4 Intense	VR Recycled Vitrinite	R Red	2 Golden
	C Coal	S Sporinite			++ Abundant			B Brown	2+ Amber
MICROSCOPE		R Resinite						BL Black	3- Reddish Brown
	K Kerogen	O Other							3 Medium Brown
X Zeiss	WR Whole Rock								3+ Dark Brown
								L Light	4- Brown-Black
	n.d. Not Determined							D Dark	4 Black
									4+ Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

DGSI

93 SAMPLES

DGSI Project: 97/3992

DGSI NUMBER	DATE: 10/10/97 ID	PREPARATION/ SAMPLE TYPE	ORGANIC MATTER (%) LIPIDS UNSTRUCTURED UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINIZED	STRUCTURED TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	HUMIC INERTINITE	VITRINITE	OTHER TYPE	TYPE	RELATIVE ABUNDANCE PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	VITRINITE NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	FLUORESCENCE / TAI REFLECTED LIPIDS UNSTR. COLOR	INTENSITY	STRU. COLOR	INTENSITY	BACKGROUND INTENSITY	TRANSMITTED LIPIDS UNSTR. TAI VALUE	FLUOR. COLOR	INTENSITY	STRU. TAI VALUE	FLUOR. COLOR	INTENSITY	Ro VITRINITE REFLECTANCE OR EQUIVALENCY
101	97R1013	K/CC				20	LD 5				T	10	5	VL 60		MA	-	M	-	M	+	+	T	BL	0	O	1	4	n.d				O Y	1 4	V ?0.49
Comments: *Lowest population of VL is too rough for Ro. Trace bituminite. Trace graphite.*																																				
102	97R1014	K/CC				25	LD 5					10	10	VL 50		F MA	-	M	-	M	M	+	T	BL	0	O DB	1	4	n.d				O Y	1 3	V ?0.51
Comments: *Rough texture may lower some Ro values. More low-rank VL than indicated from Ro.*																																				
103	97R1015	K/CC				25	LD 5					10	50	VL 10		MA	-	-	-	M	-	M	-	BL	0			3	n.d.				O	1 2	V ?0.54
Comments: *Lowest pop. of VL is too rough for Ro. Dark oxidation.*																																				
104	97R1016	K/CC				50	LD T					5	40	VL 5		MA	-	-	M	-	-	M		BL	0	OB	1	4	n.d.				O	1 2	V ?0.58
Comments:																																				
105	97R1017	K/CC				35	LD 5	S T				10	40	VL 10		MA	-	-	M	-	-	M		BL	0	DO	1	4	n.d.				O Y	1	V ?0.73
Comments:																																				

ANALYST

X O'Connor

MICROSCOPE

X Zeiss

SAMPLE TYPE/PREP

CTG	Cuttings
CC	Conv. Core
SWC	SideWallCore
OC	Outcrop
NI	No Inform.
C	Coal
K	Kerogen
WR	Whole Rock
n.d.	Not Determined

STRUCTURED LIPIDS

AL	Alginite
SB	Suberinite
C	Cutinite
LD	Liptodetrinite
U	Undiffer.
S	Sporinite
R	Resinite
O	Other

OTHER ORGANIC MATTER

E	Exsudatinite
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	VitriniteContamination
VR	Recycled Vitrinite

PYRITE

E	Euhedral
F	Framboid
MA	Massive
RI	Replace-infill

ABUND.

N	None
T	Trace
-	Small Amt.
M	Mod. Amt
+	Large Amt.
++	Abundant

FLUOR. INTENS.

0	None
1	Weak
2	Moderate
3	Strong
4	Intense

VIT. REFLECT. EQUIVALENCE

B	Bitumen
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	Vitrinite Contam.
VR	Recycled Vitrinite

FLUOR. COLOR

W	White
G	Green
Y	Yellow
O	Orange
R	Red
B	Brown
BL	Black
L	Light
D	Dark

TAI COLOR VALUES

1-	Straw Yellow
1	Pale Yellow
1+	Yellow
2-	Yellow-Orange
2	Golden
2+	Amber
3-	Reddish Brown
3	Medium Brown
3+	Dark Brown
4-	Brown-Black
4	Black
4+	Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

DGSI

93 SAMPLES

DGSI Project: 97/3992

DGSI NUMBER	DATE: 10/10/97 ID	PREPARATION/ SAMPLE TYPE	ORGANIC MATTER (%) LIPIDS UNSTRUCTURED: UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINIZED	STRUCTURED: TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	HUMIC: INERTINITE	VITRINITE	OTHER: TYPE	TYPE	RELATIVE ABUNDANCE: PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	VITRINITE: NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	FLUORESCENCE / TAI REFLECTED LIPIDS: UNSTR. COLOR	UNSTR. INTENSITY	STRU. COLOR	STRU. INTENSITY	BACKGROUND INTENSITY	TRANSMITTED LIPIDS: UNSTR. TAI	UNSTR. FLUOR. COLOR	UNSTR. FLUOR. INTENSITY	STRU. TAI	STRU. FLUOR. COLOR	STRU. FLUOR. INTENSITY	Ro: VITRINITE REFLECTANCE OR EQUIVALENCY
106	97R1018	K/CC	35				LD 5					5	30	VL 25		F MA	-	M	M	-	M		T	BL	0	O	1 2	4	n.d.				O	1 2	- V ?1.02
Comments:	*Unoxidized terrestrial fragments with grainy unstructured material. Trace graphite.*																																	
107	97R1020	K/CC			80		LD 5				T	5	5	VL 5		F MA	M	+	M	-	M			BL	0			4	2+	BL	0		O	1 2	- V ?1.11
Comments:	*Unstructured lipids have massive to grainy texture.*																																	
108	97R1021	K/CC			30		LD T				60	5	5	VL T		E F	M	+	+		T			BL	0			4	2+ 3-	BL	0		O	1	- V ?1.16
Comments:	*Massive lipids with granular solid bitumen.*																																	
109	97R1022	K/CC			60		LD 10	C T	S T	AL ?	? 15	5	5	VL 5		MA	-	+	?	M	M		T	BL	0	DOB	1	4	2+	BL	0	2	O	1 2	- V ?1.17
Comments:	*Grainy-massive lipids with difficult to identify inclusions. Woody material and structured lipids identified in transmitted light.*																																	
110	97R1023	K/CC				90					T	5	5			MA	+	M	+	T				BL	0			1	3+ 4-	BL	0				- V ?1.92
Comments:	*Fine-grained, micrinized unstructured lipids.*																																	

ANALYST

X O'Connor

MICROSCOPE

X Zeiss

SAMPLE TYPE/PREP

CTG	Cuttings
CC	Conv. Core
SWC	SideWallCore
OC	Outcrop
NI	No Inform.
C	Coal
K	Kerogen
WR	Whole Rock
n.d.	Not Determined

STRUCTURED LIPIDS

AL	Alginite
SB	Suberinite
C	Cutinite
LD	Liptodetrinite
U	Undiffer.
S	Sporinite
R	Resinite
O	Other

OTHER ORGANIC MATTER

E	Exsudatinite
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	VitriniteContamination
VR	Recycled Vitrinite

PYRITE

E	Euhedral
F	Framboid
MA	Massive
RI	Replace-infill

ABUND.

N	None
T	Trace
-	Small Amt.
M	Mod. Amt.
+	Large Amt.
++	Abundant

FLUOR. INTENS.

0	None
1	Weak
2	Moderate
3	Strong
4	Intense

VIT. REFLECT. EQUIVALENCE

B	Bitumen
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	Vitrinite Contam.
VR	Recycled Vitrinite

FLUOR. COLOR

W	White
G	Green
Y	Yellow
O	Orange
R	Red
B	Brown
BL	Black
L	Light
D	Dark

TAI COLOR VALUES

1-	Straw Yellow
1	Pale Yellow
1+	Yellow
2-	Yellow-Orange
2	Golden
2+	Amber
3-	Reddish Brown
3	Medium Brown
3+	Dark Brown
4-	Brown-Black
4	Black
4+	Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

93 SAMPLES

DGSI Project: 97/3992

DGSI

DGSI NUMBER	DATE: 10/10/97 ID	PREPARATION/ SAMPLE TYPE	ORGANIC MATTER (%) LIPIDS UNSTRUCTURED UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINIZED	STRUCTURED TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	HUMIC INERTINITE	VITRINITE	OTHER TYPE	TYPE	RELATIVE ABUNDANCE PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	VITRINITE NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	FLUORESCENCE / TAI REFLECTED LIPIDS COLOR	INTENSITY	TRANSMITTED LIPIDS UNSTR. COLOR	INTENSITY	STRU. COLOR	INTENSITY	BACKGROUND INTENSITY	TRANSMITTED LIPIDS UNSTR. TAI VALUE	UNSTR. FLUOR. COLOR	UNSTR. FLUOR. INTENSITY	STRU. TAI VALUE	STRU. FLUOR. COLOR	STRU. FLUOR. INTENSITY	Ro VITRINITE REFLECTANCE OR EQUIVALENCY
111	97R1024	K/CC				80						10	10			F MA	+	M	+				T	BL	0					2	3 3+	BL	0				- V 71.89
Comments: Ro on vitrinite-like fragments, trace coking.																																					
112	97R1025	K/CC				75	U T	S T				5	20	VL T		F E	+	+	?	M	T			BL	0	BL	0	2	3+ 4-	BL	0	3+	BL	0	- V 2.05
Comments: Vitrinite may be high-rank VL.																																					
113	97R1026	K/CC	45				U T					5	45	VL 5		F MA	M	+	+	T	T			BL	0	BL	0	1	3+ 4-	BL	0				- V 1.99
Comments: Very fine-grained unstructured lipids																																					
114	97R1027	K/CC	75									10	15			F	++	+	+	T	?			BL	0			2 3	3 4	BL	0				- V 1.93
Comments:																																					
115	97R1028	K/CC	T									T	T				M	T											3+ 4-	BL	0				- -
Comments: Not enough sample for analysis in reflected light.																																					

ANALYST

X O'Connor

MICROSCOPE

X Zeiss

SAMPLE TYPE/PREP

CTG	Cuttings
CC	Conv. Core
SWC	SideWallCore
OC	Outcrop
NI	No Inform.
C	Coal
K	Kerogen
WR	Whole Rock
n.d.	Not Determined

STRUCTURED LIPIDS

AL	Alginite
SB	Suberinite
C	Cutinite
LD	Liptodetrinite
U	Undiffer.
S	Sporinite
R	Resinite
O	Other

OTHER ORGANIC MATTER

E	Exsudatinite
G	Gruptolites
VL	Lipid-Rich Vitrinite
VC	VitriniteContamination
VR	Recycled Vitrinite

PYRITE

E	Euhedral
F	Framboid
MA	Massive
RI	Replace-infill

ABUND.

N	None
T	Trace
-	Small Amt.
M	Mod. Amt.
+	Large Amt.
++	Abundant

FLUOR. INTENS.

0	None
1	Weak
2	Moderate
3	Strong
4	Intense

VIT. REFLECT. EQUIVALENCE

B	Bitumen
G	Gruptolites
VL	Lipid-Rich Vitrinite
VC	Vitrinite Contam.
VR	Recycled Vitrinite

FLUOR. COLOR

W	White
G	Green
Y	Yellow
O	Orange
R	Red
B	Brown
BL	Black
L	Light
D	Dark

TAI COLOR VALUES

1-	Straw Yellow
1	Pale Yellow
1+	Yellow
2-	Yellow-Orange
2	Golden
2+	Amber
3-	Reddish Brown
3	Medium Brown
3+	Dark Brown
4-	Brown-Black
4	Black
4+	Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

93 SAMPLES

DGSI Project: 97/3992

DGSI

DGSI NUMBER	DATE: 10/10/97 ID	PREPARATION/ SAMPLE TYPE	ORGANIC MATTER (%) LIPIDS UNSTRUCTURED UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINIZED	STRUCTURED TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	HUMIC INERTINITE	VITRINITE	OTHER TYPE	TYPE	RELATIVE ABUNDANCE PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	VITRINITE NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	FLUORESCENCE / TAI REFLECTED LIPIDS UNSTR. COLOR	INTENSITY	STRU. COLOR	INTENSITY	BACKGROUND INTENSITY	TRANSMITTED LIPIDS UNSTR. TAI VALUE	FLUOR. COLOR	INTENSITY	STRU. TAI VALUE	FLUOR. COLOR	INTENSITY	Ro VITRINITE REFLECTANCE OR EQUIVALENCY
116	97R1029	K/CC	T				LD T						T																2+ 4-	BL	0		O Y	1 3	- -

Comments: *Transmitted light sample only. Some lower rank lipids in slide*

Comments:

Comments:

Comments:

Comments:

ANALYST

X O'Connor

MICROSCOPE

X Zeiss

SAMPLE TYPE/PREP		STRUCTURED LIPIDS		OTHER ORGANIC MATTER		PYRITE		ABUND.		FLUOR. INTENS.		VIT. REFLECT. EQUIVALENCE		FLUOR. COLOR		TAI COLOR VALUES	
CTG	Cuttings	AL	Alginite	E	Exsudatinite	E	Euhedral	N	None	0	None	B	Bitumen	W	White	1-	Straw Yellow
CC	Conv. Core	SB	Subernite	G	Graptolites	F	Framboid	T	Trace	1	Weak	G	Graptolites	G	Green	1	Pale Yellow
SWC	SideWallCore	C	Cutinite	VL	Lipid-Rich Vitrinite	MA	Massive	-	Small Amt.	2	Moderate	VL	Lipid-Rich Vitrinite	Y	Yellow	1+	Yellow
OC	Outcrop	LD	Liptodetrinite	VC	VitriniteContamination	RI	Replace-infill	M	Mod. Amt.	3	Strong	VC	Vitrinite Contam.	O	Orange	2-	Yellow-Orange
NI	No Inform.	U	Undiffer.	VR	Recycled Vitrinite			+	Large Amt.	4	Intense	VR	Recycled Vitrinite	R	Red	2	Golden
C	Coal	S	Sporinite					++	Abundant					B	Brown	2+	Amber
		R	Resinite											BL	Black	3-	Reddish Brown
K	Kerogen	O	Other													3	Medium Brown
WR	Whole Rock															3+	Dark Brown
														L	Light	4-	Brown-Black
n.d.	Not Determined													D	Dark	4	Black
																4+	Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

93 SAMPLES

DGSI Project: 97/3992

DGSI

	DATE: 9/10/97 ID		ORGANIC MATTER (%)												RELATIVE ABUNDANCE									FLUORESCENCE / TAI								Ro
			LIPIDS										HUMIC		OTHER									REFLECTED				TRANSMITTED				
			UNSTRUCTURED				STRUCTURED													VITRINITE					LIPIDS				LIPIDS				
																													UNSTR.		STRU.		
																													TAI	FLUOR.	TAI	FLUOR.	
			UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINIZED	TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	INERTINITE	VITRINITE	TYPE	TYPE	PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	COLOR	INTENSITY	COLOR	INTENSITY	BACKGROUND INTENSITY		INTENSITY			
1	97R0893	K/CC	30				LD 5					20	40	VL 5		MA	M	+	-	+	-	+		DB	1	O Y	2	1	n.d.			O Y	2	- V 0.26
Comments:	*Dark ox. on most terr. material. Small vitrinite and VL fragments less than Ro 0.6 look normal.*																																
2	97R0894	K/CC	30				LD 5	S T				20	45	VL T		MA	M	+	-	+	T	+		DB	1	O Y	2 3	1	n.d			2- 2	O Y	1 2	- V 0.32
Comments:	*Slightly less ox. than previous sample. Difficult to identify unstr. when mixed with terr. debris.*																																
3	97R0895	K/CC	35				LD 5	S T				20	40			F E	+	+	-	M		+		BL	0	O	1 2	2	n.d.			2- 2	O Y	1 2	- -
Comments:	*Some unstructured material may be terrestrial.*																																
4	97R0896	K/CC			75		LD 10				5	10	T	VL T		F E	M	+	M	-	M	-		B	1	O Y	1 2	2	2+	DOB	1	O Y	1 2	- -
Comments:	*Grainy-massisve unstr. lipids with small terrestrial fragments. Black, granular bitumen.*																																
5	97R0897	K/CC	25				LD 5	S T				35	35	VL T		MA	-	+	?	+	T	+		BL	0	O	1	2	n.d.			2- 2	O	1 2	- V 0.38
Comments:	*Similar to 97R0895.*																																

ANALYST

X OConnor

MICROSCOPE

X Zeiss

SAMPLE TYPE/PREP		STRUCTURED LIPIDS		OTHER ORGANIC MATTER		PYRITE		ABUND.		FLUOR. INTENS.		VIT. REFLECT. EQUIVALENCE		FLUOR. COLOR		TAI COLOR VALUES	
CTG	Cuttings	AL	Alginite	E	Exsudatinite	E	Euhedral	N	None	0	None	B	Bitumen	W	White	1-	Straw Yellow
CC	Conv. Core	SB	Suberinite	G	Gruptolites	F	Framboid	T	Trace	1	Weak	G	Gruptolites	G	Green	1	Pale Yellow
SWC	SideWallCore	C	Cutinite	VL	Lipid-Rich Vitrinite	MA	Massive	-	Small Amt.	2	Moderate	VL	Lipid-Rich Vitrinite	Y	Yellow	1+	Yellow
OC	Outcrop	LD	Liptodetrinite	VC	VitriniteContamination	RI	Replace-infill	M	Mod. Amt.	3	Strong	VC	Vitrinite Contam.	O	Orange	2-	Yellow-Orange
NI	No Inform.	U	Undiffer.	VR	Recycled Vitrinite			+	Large Amt.	4	Intense	VR	Recycled Vitrinite	R	Red	2	Golden
C	Coal	S	Sporinite					++	Abundant					B	Brown	2+	Amber
		R	Resinite											BL	Black	3-	Reddish Brown
K	Kerogen	O	Other													3	Medium Brown
WR	Whole Rock															3+	Dark Brown
n.d.	Not Determined													L	Light	4-	Brown-Black
														D	Dark	4	Black
																4+	Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

DGSI

93 SAMPLES

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DGSI NUMBER	DATE: 9/10/97 ID	PREPARATION/ SAMPLE TYPE	ORGANIC MATTER (%) LIPIDS UNSTRUCTURED UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINIZED	STRUCTURED TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	HUMIC INERTINITE	VITRINITE	OTHER TYPE	TYPE	RELATIVE ABUNDANCE PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	VITRINITE NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	FLUORESCENCE / TAI REFLECTED LIPIDS UNSTR. COLOR	INTENSITY	STRU. COLOR	INTENSITY	BACKGROUND INTENSITY	TRANSMITTED LIPIDS UNSTR. TAI VALUE	FLUOR. COLOR	INTENSITY	STRU. TAI VALUE	FLUOR. COLOR	INTENSITY	Ro VITRINITE REFLECTANCE OR EQUIVALENCY
6	97R0898	KCC	25				LD 5	S T			7	40	30	VL T		F	M	+	M	M	T	M		DB	1	O	1	1	n.d.			2	O Y	1 2	- V 70.32
Comments:																																				
7	97R0899	KCC	25				LD 5					35	35			F E	M	M	-	+		+	T	DB	1	Y	2	2	2	BL	0		O Y	1 2	- -
Comments:	*Low-rank vit. is too oxidized for Ro*																																			
8	97R0900	KCC	40				LD T					30	30			F	M	M	-	+		+		BL	0	O	1 3	1	n.d.				O	1	- -
Comments:																																				
9	97R0901	KCC	15				LD 5	C 5	R T			20	30	VL 25		MA	M	M	-	M	M	M		DB	1	O	1 2	3	n.d.				O	1 2	- V 0.44
Comments:	*Low-rank woody structure in slide.*																																			
10	97R0902	KCC	15		T		LD 5					15	50	VL 15		MA	-	M	T	+	M	+	T	DB	1	O	1	2	n.d.				O	1 2	- V 70.47
Comments:																																				

ANALYST

X O'Connor

MICROSCOPE

X Zeiss

SAMPLE TYPE/PREP

CTG	Cuttings
CC	Conv. Core
SWC	SideWallCore
OC	Outcrop
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STRUCTURED LIPIDS

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S	Sporinite
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O	Other

OTHER ORGANIC MATTER

E	Exsudatinite
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	VitriniteContamination
VR	Recycled Vitrinite

PYRITE

E	Euhedral
F	Framboid
MA	Massive
RI	Replace-infill

ABUND.

N	None
T	Trace
-	Small Amt.
M	Mod. Amt.
+	Large Amt.
++	Abundant

FLUOR. INTENS.

0	None
1	Weak
2	Moderate
3	Strong
4	Intense

VIT. REFLECT. EQUIVALENCE

B	Bitumen
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	Vitrinite Contam.
VR	Recycled Vitrinite

FLUOR. COLOR

W	White
G	Green
Y	Yellow
O	Orange
R	Red
B	Brown
BL	Black
L	Light
D	Dark

TAI COLOR VALUES

1-	Straw Yellow
1	Pale Yellow
1+	Yellow
2-	Yellow-Orange
2	Golden
2+	Amber
3-	Reddish Brown
3	Medium Brown
3+	Dark Brown
4-	Brown-Black
4	Black
4+	Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

DGSI

93 SAMPLES

DGSI Project: 97/3992

DGSI NUMBER	DATE: 9/10/97 ID	PREPARATION/ SAMPLE TYPE	ORGANIC MATTER (%) LIPIDS UNSTRUCTURED: UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINIZED	STRUCTURED: TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	HUMIC: INERTINITE	VITRINITE	OTHER: TYPE	TYPE	RELATIVE ABUNDANCE: PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	VITRINITE: NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	FLUORESCENCE / TAI REFLECTED LIPIDS: UNSTR. COLOR	UNSTR. INTENSITY	STRU. COLOR	STRU. INTENSITY	BACKGROUND INTENSITY	TRANSMITTED LIPIDS: UNSTR. TAI VALUE	UNSTR. FLUOR. COLOR	UNSTR. FLUOR. INTENSITY	STRU. TAI VALUE	STRU. FLUOR. COLOR	STRU. FLUOR. INTENSITY	Ro: VITRINITE REFLECTANCE OR EQUIVALENCY
11	97R0903	K/CC	25				LD 5	S T				10	50	VL 10		F	M	M	-	M	M	+	T	DB	1	O	1 2	4	n d			1 2+	O	1 2	- V 0.58
Comments: *Trace coking vitrinite. Trace graphite.*																																			
12	97R0904	K/CC				40	LD T	S T			7	15	10	VL 35		F MA	M	+	-	M	-	M	T	BL	0	O	1 2	3	n d				O	1	- V 0.56
Comments: *Large amount of woody debris in transmitted light - only a trace of unstr. lipids.*																																			
13	97R0905	K/CC				55	LD T				7	10	20	VL 15		MA	-	+	M	M	M	-		BL	0	OB O	1 2	3 4	n d				O	1	- V 0.68
Comments: *Micrinized lipids with low-rank VL as in previous sample.*																																			
14	97R0906	K/CC				25	LD 5					10	25	VL 35		F MA	M	+	M	-	M	T		BL	0	O	1 2	4	3+	DOB	1				- V 0.82
Comments: *Better quality terrestrial material.*																																			
15	97R0909	K/CC				50	LD T					10	20	VL 20		MA	M	+	M	-	M	T		BL	0			4	n d				O	1	- V 0.81
Comments:																																			

ANALYST

X O'Connor

MICROSCOPE

X Zeiss

SAMPLE TYPE/PREP

CTG	Cuttings
CC	Conv. Core
SWC	SideWallCore
OC	Outcrop
NI	No Inform.
C	Coal
K	Kerogen
WR	Whole Rock
n.d.	Not Determined

STRUCTURED LIPIDS

AL	Alginite
SB	Suberinite
C	Cutinite
LD	Liptodetrinite
U	Undiffer.
S	Sporinite
R	Resinite
O	Other

OTHER ORGANIC MATTER

E	Exsudatinite
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	VitriniteContamination
VR	Recycled Vitrinite

PYRITE

E	Euhedral
F	Framboid
MA	Massive
RI	Replace-infill

ABUND.

N	None
T	Trace
-	Small Amt.
M	Mod. Amt.
+	Large Amt.
++	Abundant

FLUOR. INTENS.

0	None
1	Weak
2	Moderate
3	Strong
4	Intense

VIT. REFLECT. EQUIVALENCE

B	Bitumen
G	Graptolites
VL	Lipid-Rich Vitrinite
VC	Vitrinite Contam.
VR	Recycled Vitrinite

FLUOR. COLOR

W	White
G	Green
Y	Yellow
O	Orange
R	Red
B	Brown
BL	Black
L	Light
D	Dark

TAI COLOR VALUES

1-	Straw Yellow
1	Pale Yellow
1+	Yellow
2-	Yellow-Orange
2	Golden
2+	Amber
3-	Reddish Brown
3	Medium Brown
3+	Dark Brown
4-	Brown-Black
4	Black
4+	Black-Opaque

VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry

93 SAMPLES

DGSI

DGSI Project: 97/3992

DGSI NUMBER	DATE: 9/10/97 ID	PREPARATION/ SAMPLE TYPE	ORGANIC MATTER (%) LIPIDS UNSTRUCTURED: UNDIFFERENTIATE	AMORPHOUS	MASSIVE	MICRINIZED	STRUCTURED: TYPE	TYPE	TYPE	TYPE	SOLID BITUMEN	HUMIC: INERTINITE	VITRINITE	OTHER: TYPE	TYPE	RELATIVE ABUNDANCE: PYRITE TYPE	PYRITE	TOTAL ORGANIC MATTER	VITRINITE: NORMAL	ROUGH	LIPID-RICH	OXIDIZED	COKED	FLUORESCENCE / TAI REFLECTED LIPIDS: UNSTR. COLOR	INTENSITY	STRU. COLOR	INTENSITY	BACKGROUND INTENSITY	TRANSMITTED LIPIDS: UNSTR. TAI VALUE	UNSTR. FLUOR. COLOR	UNSTR. FLUOR. INTENSITY	STRU. TAI VALUE	STRU. FLUOR. COLOR	STRU. FLUOR. INTENSITY	Ro VITRINITE REFLECTANCE OR EQUIVALENCY
16	97R0910	K/CC	30				LD T					10	30	VL 30		E MA	M	-	M	M	M	-		DB	1	O	1	1	n.d.				O	1	- V 70.95
Comments: Small amount of organic matter.																																			
17	97R0911	K/CC				45	U 5					10	30	VL 10		F MA	+	+	+	-	-	-		BL	0			3	n.d.				O	1 2	- V 0.94
Comments:																																			
18	97R0912	K/CC				50	LD 5					10	30	VL 5		F MA	+	+	+	-	-			BL	0	O	1	4	n.d.				O YO	1 3	- V 70.99
Comments:																																			
Comments:																																			
Comments:																																			

ANALYST

X O'Connor

MICROSCOPE

X Zeiss

SAMPLE TYPE/PREP

- CTG Cuttings
- CC Conv. Core
- SWC SideWallCore
- OC Outcrop
- NI No Inform.
- C Coal
- K Kerogen
- WR Whole Rock
- n.d. Not Determined

STRUCTURED LIPIDS

- AL Alginite
- SB Suberinite
- C Cutinite
- LD Liptodetrinite
- U Undiffer.
- S Sporinite
- R Resinite
- O Other

OTHER ORGANIC MATTER

- E Exsudatinite
- G Graptolites
- VL Lipid-Rich Vitrinite
- VC VitriniteContamination
- VR Recycled Vitrinite

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- E Euhedrul
- F Framboid
- MA Massive
- RI Replace-infill

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VISUAL KEROGEN ANALYSIS
Total Quality Geochemistry