

Run No.	Tool combination	Interval (m)	Comments
2A	AIT-DSI-EMS	5059.8 - 4611	Sonic to 4200m
2A	IPLT	5059.8 - 4611	
2B	MDT-GR-ACTS	4666.9 - 5045.79	Pressure points only. 20 valid tests out of 35
2C	MDT-GR-ACTS	4679.8 - 4690.5	Samples at 4679.8 m. (2.75gal, 1gal, 3xSPMC, 2xMPSR)
2D	MDT-GR-ACTS	4679.8 - 5048.3	Samples at 4685 m (3xMPSR), 4679.8 mMD (1gal. 2xMPSR), 4780.2 mMD (1xMPSR)
2A	VSP-GR	4970-4140 4140-3000	40m stations 60m stations
2A	MSCT-GR	5028.0-4679.8	Planned 25 cores. Cut 23. Recovered 13

Table 7.1 Wireline log runs

Title:  <b>Standard Geochemical Evaluation of Well 6406/1-1</b>		
Document no.: <b>200111280001</b>	Contract no./project no.:	Filing no.:

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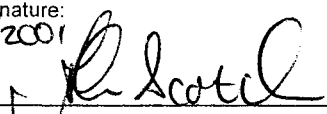

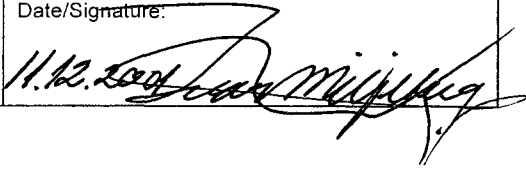
Author(s)/Source(s): <b>John Scotchmer, F&amp;T LET HKS</b>
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Subjects: <b>Erlend, Norwegian Sea, Thermal maturity, Source rocks, Gas, Condensate, Oil-based mud contamination</b>
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Remarks:
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Responsible publisher: <b>F&amp;T LET HKS</b>	Authority to approve deviations: <b>F&amp;T LET HKS</b>
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Techn. responsible: <b>F&amp;T LET HKS</b>	Name: <b>John Scotchmer</b>	Date/Signature: <b>28/11/2001</b> 
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## 1 Introduction

This report presents the results of a petroleum geochemical evaluation of the 6406/1-1 well (Erlend structure), drilled offshore mid-Norway (Figure 1). The well section is vertical, and was drilled with seawater/bentonite to 1443m MDRT, a Glydril mud system through the 17½” section (to 3016m MDRT) and Versapro oil-based mud through the 12¼” and 8½” sections (to 5057m MDRT (TD)).

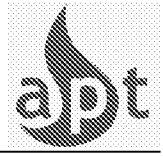
The total numbers of analyses carried out during the course of the study were as follows:

Analysis	Cuttings	Core	Oil	Gas	Mud	Total
Sample preparation	64	32				96
TOC content	50					50
Rock-Eval pyrolysis	50	30				80
Vitrinite reflectance	22	3				25
Kerogen typing	22					22
Pyrolysis-GC	6					6
Solvent extraction	4	30			3	37
Topping			1			1
Asphaltene precipitation	4	17	1		1	23
Iatroscan		17	1			18
MPLC separation	4	17	1		1	23
Whole oil/extract GC			1		3	4
Saturates GC	4	17	1		1	23
Aromatic GC			1			1
Saturates GC-MS	2	3	1		1	7
Aromatic GC-MS			1			1
Carbon isotopes		1	1		1	3
Gas composition				1		1
Gas isotopes				1		1

Full details of the analytical programme on a sample-by-sample basis are presented in Table 1. The analyses were carried out at APT and in accordance with the guidelines given in “The Norwegian

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Industry Guide to Organic Geochemical Analyses, 4<sup>th</sup> edition (2000). The analytical data are presented in Appendix 1.



## Summary

This report is a data report on work performed under the Statoil project number APT2001-10. 64 drill cutting samples, 32 core samples, 1 oil (condensate), 1 gas and 3 mud samples from well 6406/1-1 were received for analysis.



Table 1. Lithology Description

Well	Sample type	Lower Depth	APT ID	%	Lithology	Attributes
6406/1-1	DC	1530	11888A	60%	CLYST	dkgy-ltgy-brn
6406/1-1	DC	1530	11888B	40%	SST	
6406/1-1	DC	1730	11889A	80%	CLYST	ltgy-brn
6406/1-1	DC	1730	11889B	20%	SST	
6406/1-1	DC	1930	11890A	90%	CLYST	dkgy-ltgy-brn
6406/1-1	DC	1930	11890B	10%	SST	
6406/1-1	DC	2130	11891A	100%	CLYST	ltgy-brn
6406/1-1	DC	2130	11891B	trace	SST	
6406/1-1	DC	2330	11892A	100%	CLYST	ltgy-brn
6406/1-1	DC	2330	11892B	trace	SST	
6406/1-1	DC	2530	11893A	100%	CLYST	dkgy-ltgy-brn
6406/1-1	DC	2530	11893B	trace	SST	
6406/1-1	DC	2730	11894A	100%	CLYST	dkgy-brn
6406/1-1	DC	2730	11894B	trace	SST	
6406/1-1	DC	2730	11894C	trace	PYR	
6406/1-1	DC	2930	11895A	90%	CLYST	dkgy-ltgy-brn
6406/1-1	DC	2930	11895B	10%	SST	
6406/1-1	DC	3130	11896A	90%	CLYST	dkgy-ltgy-brn
6406/1-1	DC	3130	11896B	10%	SST	
6406/1-1	DC	3330	11897A	100%	CLYST	dkgy-lygy-brn
6406/1-1	DC	3330	11897B	trace	SST	
6406/1-1	DC	3519	11898A	80%	CLYST	ltgy-brn
6406/1-1	DC	3519	11898B	20%	SST	
6406/1-1	DC	3730	11899A	100%	CLYST	dkgy-ltgy-brn
6406/1-1	DC	3730	11899B	trace	SST	
6406/1-1	DC	3930	11900A	100%	CLYST	dkgy-brn
6406/1-1	DC	3930	11900B	trace	SST	
6406/1-1	DC	4130	11901A	100%	CLYST	dkgy-brn
6406/1-1	DC	4130	11901B	trace	SST	
6406/1-1	DC	4330	11902A	100%	CLYST	dkgy-ltgy-brn
6406/1-1	DC	4330	11902B	trace	SST	
6406/1-1	DC	4530	11903A	90%	CLYST	dkgy-ltgy-brn
6406/1-1	DC	4530	11903B	10%	SST	
6406/1-1	DC	4557	11904A	90%	CLYST	dkgy-ltgy-brn
6406/1-1	DC	4557	11904B	10%	SST	
6406/1-1	DC	4596	11905A	50%	CLYST	dkgy
6406/1-1	DC	4596	11905B	30%	CLYST	ltgy-brn
6406/1-1	DC	4596	11905C	10%	SST	
6406/1-1	DC	4602	11906A	50%	CLYST	dkgy
6406/1-1	DC	4602	11906B	40%	CLYST	ltgy-brn
6406/1-1	DC	4602	11906C	10%	SST	
6406/1-1	DC	4614	11907A	60%	CLYST	dkgy
6406/1-1	DC	4614	11907B	40%	CLYST	ltgy-brn
6406/1-1	DC	4614	11907C	trace	SST	
6406/1-1	DC	4620	11908A	60%	CLYST	dkgy
6406/1-1	DC	4620	11908B	40%	CLYST	ltgy-brn



Well	Sample type	Lower Depth	APT ID	%	Lithology	Attributes
6406/1-1	DC	4620	11908C	trace	SST	
6406/1-1	DC	4629	11909A	90%	CLYST	dkgy-ltgy-brn
6406/1-1	DC	4629	11909B	10%	SST	
6406/1-1	DC	4635	11910A	90%	CLYST	dkgy-ltgy-brn
6406/1-1	DC	4635	11910B	10%	SST	
6406/1-1	DC	4641	11911A	100%	CLYST	dkgy-ltgy-brn
6406/1-1	DC	4641	11911B	trace	SST	
6406/1-1	DC	4647	11912A	100%	CLYST	dkgy-ltgy-brn
6406/1-1	DC	4647	11912B	trace	SST	
6406/1-1	DC	4653	11913A	90%	CLYST	dkgy-ltgy-brn
6406/1-1	DC	4653	11913B	10%	SST	
6406/1-1	DC	4659	11914A	100%	CLYST	dkgy-ltgy-brn
6406/1-1	DC	4659	11914B	trace	SST	
6406/1-1	DC	4665	11915A	100%	CLYST	dkgy-ltgy-brn
6406/1-1	DC	4665	11915B	trace	SST	
6406/1-1	COCH	4680.74	11956	100 %	SST	f-m
6406/1-1	COCH	4684.11	11957	100 %	SST	f-m-c
6406/1-1	COCH	4686.83	11958	100 %	SST	f-m-c
6406/1-1	COCH	4689.25	11959	100 %	SST	f-m
6406/1-1	COCH	4695.84	11960	100 %	SST	f-m-c
6406/1-1	COCH	4700.33	11961	100 %	SST	f-m-c
6406/1-1	COCH	4705.68	11962	100 %	SST	m-c
6406/1-1	COCH	4710.70	11963	100 %	SST	f-m-c
6406/1-1	COCH	4713.87	11964	100 %	SST	f-m
6406/1-1	COCH	4717.47	11965	100 %	CLYST	dkgy, mic, sdy lam
6406/1-1	COCH	4717.84	11966	100 %	SST	f-m
6406/1-1	COCH	4726.37	11967	100 %	SST	f-m
6406/1-1	COCH	4731.33	11968	100 %	SST	f-m
6406/1-1	COCH	4735.34	11969	100 %	SST	f-m
6406/1-1	COCH	4739.62	11970	100 %	SST	f-m-c
6406/1-1	COCH	4740.65	11971	100 %	SST	f-m
6406/1-1	COCH	4742.67	11972	100 %	SST	f-m
6406/1-1	COCH	4744.20	11973	100 %	SST	f-m
6406/1-1	COCH	4749.68	11974	100 %	SST	f-m-c
6406/1-1	COCH	4752.37	11975	100 %	SST	f-m-c
6406/1-1	COCH	4753.82	11976	100 %	SST	f-m
6406/1-1	COCH	4756.30	11977	100 %	SST	f-m, coaly/clst lam
6406/1-1	COCH	4756.60	11978	100 %	SST	f-m-c
6406/1-1	COCH	4758.86	11979	100 %	SST	f-m-c
6406/1-1	COCH	4761.15	11980	100 %	SST	f-m-c
6406/1-1	COCH	4766.93	11981	100 %	SST	f-m-c
6406/1-1	COCH	4771.62	11982	100 %	SST	f-m
6406/1-1	COCH	4776.40	11983	100 %	SST	f-m-c
6406/1-1	COCH	4779.37	11984	100 %	SST	f-m
6406/1-1	COCH	4782.15	11985	100 %	SST	f-m
6406/1-1	COCH	4788.43	11986	100 %	SST	f-m
6406/1-1	COCH	4791.34	11987	100 %	SST	f-m-c
6406/1-1	DC	4800	11916A	60%	SST	f-m-c
6406/1-1	DC	4800	11916B	40%	CLYST	ltgy-brn



Well	Sample type	Lower Depth	APT ID	%	Lithology	Attributes
6406/1-1	DC	4806	11917A	30%	CLYST	brn
6406/1-1	DC	4806	11917B	30%	CLYST	ltgy
6406/1-1	DC	4806	11917C	40%	SST	
6406/1-1	DC	4809	11918A	50%	CLYST	brn
6406/1-1	DC	4809	11918B	30%	CLYST	ltgy
6406/1-1	DC	4809	11918C	20%	SST	
6406/1-1	DC	4812	11919A	60%	CLYST	ltgy-brn
6406/1-1	DC	4812	11919B	20%	CLYST	dkgy
6406/1-1	DC	4812	11919C	20%	SST	
6406/1-1	DC	4815	11920A	60%	CLYST	ltgy-brn
6406/1-1	DC	4815	11920B	20%	CLYST	dkgy
6406/1-1	DC	4815	11920C	20%	SST	
6406/1-1	DC	4818	11921A	60%	CLYST	ltgy-brn
6406/1-1	DC	4818	11921B	20%	CLYST	dkgy
6406/1-1	DC	4818	11921C	20%	SST	
6406/1-1	DC	4821	11922A	60%	CLYST	ltgy-brn
6406/1-1	DC	4821	11922B	30%	CLYST	dkgy
6406/1-1	DC	4821	11922C	10%	SST	
6406/1-1	DC	4836	11923A	60%	SST	f-m-c
6406/1-1	DC	4836	11923B	40%	CLYST	dkgy-ltgy-brn
6406/1-1	DC	4857	11924A	60%	SST	f-m-c
6406/1-1	DC	4857	11924B	30%	CLYST	ltgy-brn
6406/1-1	DC	4857	11924C	10%	CLYST	dkgy
6406/1-1	DC	4863	11925A	30%	CLYST	dkgy
6406/1-1	DC	4863	11925B	30%	CLYST	ltgy
6406/1-1	DC	4863	11925C	40%	SST	
6406/1-1	DC	4869	11926A	40%	CLYST	dkgy
6406/1-1	DC	4869	11926B	20%	CLYST	ltgy-brn
6406/1-1	DC	4869	11926C	40%	SST	
6406/1-1	DC	4872	11927A	40%	CLYST	dkgy
6406/1-1	DC	4872	11927B	20%	CLYST	ltgy-brn
6406/1-1	DC	4872	11927C	40%	SST	
6406/1-1	DC	4875	11928A	50%	CLYST	dkgy
6406/1-1	DC	4875	11928B	30%	CLYST	ltgy-brn
6406/1-1	DC	4875	11928C	20%	SST	
6406/1-1	DC	4878	11929A	50%	CLYST	dkgy
6406/1-1	DC	4878	11929B	30%	CLYST	ltgy-blk-brn
6406/1-1	DC	4878	11929C	20%	SST	
6406/1-1	DC	4911	11930A	50%	CLYST	ltgy-brn
6406/1-1	DC	4911	11930B	30%	CLYST	dkgy
6406/1-1	DC	4911	11930C	20%	SST	
6406/1-1	DC	4914	11931A	50%	CLYST	ltgy-brn
6406/1-1	DC	4914	11931B	30%	CLYST	dkgy
6406/1-1	DC	4914	11931C	20%	SST	
6406/1-1	DC	4935	11932A	70%	CLYST	ltgy-brn
6406/1-1	DC	4935	11932B	20%	CLYST	dkgy
6406/1-1	DC	4935	11932C	10%	SST	
6406/1-1	DC	4938	11933A	50%	CLYST	dkgy
6406/1-1	DC	4938	11933B	40%	CLYST	ltgy-brn





Well	Sample type	Lower Depth	APT ID	%	Lithology	Attributes
6406/1-1	DC	4938	11933C	10%	SST	
6406/1-1	DC	4941	11934A	100%	CLYST	dkgy-brn
6406/1-1	DC	4941	11934B	trace	SST	
6406/1-1	DC	4944	11935A	90%	CLYST	dkgy-brn
6406/1-1	DC	4944	11935B	10%	SST	
6406/1-1	DC	4959	11936A	50%	CLYST	ltgy-brn
6406/1-1	DC	4959	11936B	30%	CLYST	dkgy
6406/1-1	DC	4959	11936C	20%	SST	
6406/1-1	DC	4968	11937A	60%	CLYST	ltgy-brn
6406/1-1	DC	4968	11937B	20%	CLYST	dkgy
6406/1-1	DC	4968	11937C	20%	SST	
6406/1-1	DC	4986	11938A	60%	CLYST	ltgy-brn
6406/1-1	DC	4986	11938B	20%	CLYST	dkgy
6406/1-1	DC	4986	11938C	20%	SST	
6406/1-1	DC	5004	11939A	70%	CLYST	ltgy-brn
6406/1-1	DC	5004	11939B	10%	CLYST	dkgy
6406/1-1	DC	5004	11939C	20%	SST	
6406/1-1	DC	5007	11940A	70%	CLYST	ltgy-brn
6406/1-1	DC	5007	11940B	20%	CLYST	dkgy
6406/1-1	DC	5007	11940C	10%	SST	
6406/1-1	DC	5010	11941A	70%	CLYST	ltgy-brn
6406/1-1	DC	5010	11941B	20%	CLYST	dkgy
6406/1-1	DC	5010	11941C	10%	SST	
6406/1-1	DC	5013	11942A	60%	CLYST	ltgy-brn
6406/1-1	DC	5013	11942B	20%	CLYST	dkgy
6406/1-1	DC	5013	11942C	20%	SST	
6406/1-1	DC	5019	11943A	60%	CLYST	ltgy-brn
6406/1-1	DC	5019	11943B	20%	CLYST	dkgy
6406/1-1	DC	5019	11943C	20%	SST	
6406/1-1	DC	5022	11944A	40%	CLYST	ltgy-brn
6406/1-1	DC	5022	11944B	20%	CLYST	dkgy
6406/1-1	DC	5022	11944C	40%	SST	
6406/1-1	DC	5025	11945A	40%	CLYST	ltgy-brn
6406/1-1	DC	5025	11945B	20%	CLYST	dkgy
6406/1-1	DC	5025	11945C	40%	SST	
6406/1-1	DC	5034	11946A	60%	SST	f-m-c
6406/1-1	DC	5034	11946B	30%	CLYST	ltgy-brn
6406/1-1	DC	5034	11946C	10%	CLYST	dkgy
6406/1-1	DC	5040	11947A	40%	CLYST	ltgy-brn
6406/1-1	DC	5040	11947B	20%	CLYST	dkgy-brn
6406/1-1	DC	5040	11947C	40%	SST	
6406/1-1	DC	5049	11948A	30%	CLYST	dkgy
6406/1-1	DC	5049	11948B	30%	CLYST	ltgy-brn
6406/1-1	DC	5049	11948C	40%	SST	
6406/1-1	DC	5052	11949A	30%	CLYST	dkgy
6406/1-1	DC	5052	11949B	30%	CLYST	ltgy
6406/1-1	DC	5052	11949C	40%	SST	
6406/1-1	DC	5055	11950A	30%	CLYST	dkgy
6406/1-1	DC	5055	11950B	30%	CLYST	ltgy-brn



Well	Sample type	Lower Depth	APT ID	%	Lithology	Attributes
6406/1-1	DC	5055	11950C	40%	SST	
6406/1-1	DC	5057	11951A	40%	CLYST	ltgy-brn
6406/1-1	DC	5057	11951B	20%	CLYST	dkgy
6406/1-1	DC	5057	11951C	40%	SST	



Table 2. Extraction, Asphaltene precipitation and Iatroscan data

Well	Sample type	Sample name	Lower Depth	APT ID	Rock weight (g)	EOM (mg)	EOM (mg/kg Rock)	SAT (mg/kg Rock)	ARO (mg/kg Rock)	POL (mg/kg Rock)	ASP (mg/kg Rock)	SAT (wt% of EOM/Oil)	ARO (wt% of EOM/Oil)	POL (wt% of EOM/Oil)	ASP (wt% of EOM/Oil)	HC (wt% of EOM/Oil)
6406/1-1	Mud		4675	11952	4.065	1042	256366									
6406/1-1	Oil	01-261	4679.80	11988								89.8	10.0	0.2	0	99.8
6406/1-1	COCH		4680.74	11956	8.342	103	12347	10101	142	1349	755	81.8	1.1	10.9	6.1	83.0
6406/1-1	COCH		4684.11	11957	19.418	183	9424	7907	143	792	582	83.9	1.5	8.4	6.2	85.4
6406/1-1	COCH		4686.83	11958	13.680	116	8479									
6406/1-1	COCH		4689.25	11959	17.851	164	9187	6840	159	1382	807	74.4	1.7	15.0	8.8	76.2
6406/1-1	COCH		4695.84	11960	15.094	113	7486									
6406/1-1	COCH		4700.33	11961	15.126	14	925									
6406/1-1	COCH		4705.68	11962	20.765	141	6790	5773	119	552	347	85.0	1.7	8.1	5.1	86.8
6406/1-1	COCH		4710.70	11963	14.442	199	13779	11978	218	1119	464	86.9	1.6	8.1	3.4	88.5
6406/1-1	COCH		4713.87	11964	13.126	95	7237									
6406/1-1	COCH		4717.84	11966	18.689	73	3906	3173	146	502	86	81.2	3.7	12.8	2.2	85.0
6406/1-1	COCH		4726.37	11967	15.424	136	8817	7185	128	1070	434	81.5	1.5	12.1	4.9	82.9
6406/1-1	COCH		4731.33	11968	17.228	130	7546									
6406/1-1	COCH		4735.34	11969	11.756	96	8166	6190	173	1038	766	75.8	2.1	12.7	9.4	77.9
6406/1-1	COCH		4739.62	11970	12.612	98	7770									
6406/1-1	COCH		4740.65	11971	13.862	124	8945									
6406/1-1	COCH		4742.67	11972	15.785	173	10959	8174	250	1820	716	74.6	2.3	16.6	6.5	76.9
6406/1-1	COCH		4744.20	11973	13.997	36	2571									
6406/1-1	COCH		4749.68	11974	16.375	131	8000	5330	266	1372	1032	66.6	3.3	17.1	12.9	70.0
6406/1-1	COCH		4752.37	11975	13.342	104	7795									
6406/1-1	COCH		4753.82	11976	14.035	148	10545	7278	244	1954	1069	69.0	2.3	18.5	10.1	71.3
6406/1-1	COCH		4756.60	11978	14.749	78	5288	3654	173	763	698	69.1	3.3	14.4	13.2	72.4
6406/1-1	COCH		4758.86	11979	13.193	64	4851									



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Well	Sample type	Sample name	Lower Depth	APT ID	Rock weight (g)	EOM (mg)	EOM (mg/kg Rock)	SAT (mg/kg Rock)	ARO (mg/kg Rock)	POL (mg/kg Rock)	ASP (mg/kg Rock)	SAT (wt% of EOM/Oil)	ARO (wt% of EOM/Oil)	POL (wt% of EOM/Oil)	ASP (wt% of EOM/Oil)	HC (wt% of EOM/Oil)
6406/1-1	COCH		4761.15	11980	15.059	50	3320	2410	142	323	445	72.6	4.3	9.7	13.4	76.9
6406/1-1	COCH		4766.93	11981	12.629	70	5543	4190	263	329	760	75.6	4.8	5.9	13.7	80.4
6406/1-1	COCH		4771.62	11982	12.537	67	5344									
6406/1-1	COCH		4776.40	11983	19.900	9	452									
6406/1-1	COCH		4779.37	11984	16.832	232	13783	9845	512	735	2691	71.4	3.7	5.3	19.5	75.1
6406/1-1	COCH		4782.15	11985	9.414	63	6692	5029	240	808	616	75.1	3.6	12.1	9.2	78.7
6406/1-1	COCH		4788.43	11986	14.617	104	7115									
6406/1-1	COCH		4791.34	11987	16.057	126	7847	5523	137	1415	772	70.4	1.7	18.0	9.8	72.1
6406/1-1	DC		4800	11916	21.044	239	11357									11.9
6406/1-1	Mud		4800	11953	4.053	953	235146									
6406/1-1	DC		4836	11923	13.311	169	12696									11.1
6406/1-1	DC		4968	11937	15.266	417	27315									8.0
6406/1-1	DC		5040	11947	14.813	228	15392									11.3
6406/1-1	Mud		5057	11954	6.080	1078	177311									

Table 3. Topping and density

Well	Sample type	Sample name	Lower Depth	APT ID	Density (g/cm <sup>3</sup> )	°API	Topped oil (wt%)
6406/1-1	Oil	01-261	4679.80	11988	0.789	47.9	56.2

Table 4. TOC and Rock-Eval data

Well	Sample type	Lower Depth	AFT ID	S1 (mg/g)	S2 (mg/g)	S3 (mg/g)	Tmax (°C)	PP (mg/g)	PI (wt ratio)	HI (mg HC/g TOC)	OI (mg CO2/g TOC)	TOC (%)
6406/1-1	DC	3730	11899	0.37	3.25	0.52	435	3.62	0.10	230	37	1.41
6406/1-1	DC	3930	11900	0.36	2.28	0.52	435	2.64	0.14	181	41	1.26
6406/1-1	DC	4130	11901	0.15	2.00	0.44	428	2.15	0.07	180	40	1.11
6406/1-1	DC	4330	11902	0.27	1.99	0.32	435	2.26	0.12	182	29	1.09
6406/1-1	DC	4530	11903	0.18	2.52	0.62	433	2.70	0.07	174	43	1.45
6406/1-1	DC	4557	11904	0.28	2.73	5.87	432	3.01	0.09	260	559	1.05
6406/1-1	DC	4596	11905A	0.52	3.89	1.06	442	4.41	0.12	169	46	2.30
6406/1-1	DC	4602	11906A	0.46	2.80	0.55	428	3.26	0.14	182	36	1.54
6406/1-1	DC	4614	11907A	0.47	2.52	0.74	428	2.99	0.16	170	50	1.48
6406/1-1	DC	4620	11908A	0.51	2.96	0.90	431	3.47	0.15	149	45	1.98
6406/1-1	DC	4629	11909	0.74	2.45	0.96	433	3.19	0.23	120	47	2.04
6406/1-1	DC	4635	11910	0.46	2.29	0.84	430	2.75	0.17	159	58	1.44
6406/1-1	DC	4641	11911	0.17	1.67	0.43	415	1.84	0.09	145	37	1.15
6406/1-1	DC	4647	11912	0.21	1.95	1.68	426	2.15	0.10	193	166	1.01
6406/1-1	DC	4653	11913	0.26	2.18	0.31	416	2.44	0.11	186	26	1.17
6406/1-1	DC	4659	11914	0.30	1.84	0.42	420	2.14	0.14	127	29	1.44
6406/1-1	DC	4665	11915	0.19	2.26	1.75	430	2.45	0.08	140	109	1.61
6406/1-1	COCH	4680.74	11956	15.52	0.97	0.21	414	16.50	0.94			
6406/1-1	COCH	4684.11	11957	7.09	0.86	0.13	430	7.95	0.89			
6406/1-1	COCH	4686.83	11958	5.89	1.39	0.29	415	7.29	0.81			
6406/1-1	COCH	4689.25	11959	5.56	1.40	0.29	414	6.96	0.80			
6406/1-1	COCH	4695.84	11960	4.52	0.93	0.25	397	5.44	0.83			
6406/1-1	COCH	4700.33	11961	0.08	0.10	0.20	416	0.18	0.46			
6406/1-1	COCH	4705.68	11962	3.16	0.60	0.25	394	3.77	0.84			
6406/1-1	COCH	4710.70	11963	8.32	0.62	0.01	423	8.94	0.93			
6406/1-1	COCH	4713.87	11964	6.94	1.45	0.18	410	8.39	0.83			



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Well	Sample type	Lower Depth	APT ID	S1 (mg/g)	S2 (mg/g)	S3 (mg/g)	Tmax (°C)	PP (mg/g)	PI (wt ratio)	HI (mg HC/g TOC)	OI (mg CO2/g TOC)	TOC (%)
6406/1-1	COCH	4717.84	11966	0.83	0.34	0.30	402	1.17	0.71			
6406/1-1	COCH	4726.37	11967	3.78	0.63	0.33	398	4.40	0.86			
6406/1-1	COCH	4731.33	11968	2.46	0.46	0.29	377	2.92	0.84			
6406/1-1	COCH	4735.34	11969	3.49	0.70	0.34	398	4.19	0.83			
6406/1-1	COCH	4739.62	11970	5.09	0.61	0.09	379	5.70	0.89			
6406/1-1	COCH	4740.65	11971	3.52	0.93	0.07	405	4.45	0.79			
6406/1-1	COCH	4742.67	11972	5.81	1.01	0.16	408	6.82	0.85			
6406/1-1	COCH	4744.20	11973	1.77	0.52	0.11	404	2.29	0.77			
6406/1-1	COCH	4749.68	11974	4.26	1.04	0.15	403	5.30	0.80			
6406/1-1	COCH	4752.37	11975	4.12	1.02	0.09	389	5.14	0.80			
6406/1-1	COCH	4753.82	11976	5.32	1.22	0.22	412	6.54	0.81			
6406/1-1	COCH	4756.60	11978	2.28	0.77	0.15	411	3.05	0.75			
6406/1-1	COCH	4758.86	11979	2.27	0.53	0.18	397	2.80	0.81			
6406/1-1	COCH	4761.15	11980	1.66	0.62	0.12	313	2.28	0.73			
6406/1-1	COCH	4766.93	11981	1.55	0.40	0.23	316	1.95	0.80			
6406/1-1	COCH	4771.62	11982	1.26	0.44	0.10	314	1.69	0.74			
6406/1-1	COCH	4776.40	11983	0.11	0.28	0.21	471	0.39	0.29			
6406/1-1	COCH	4779.37	11984	6.31	0.83	0.13	300	7.14	0.88			
6406/1-1	COCH	4782.15	11985	2.51	0.58	0.10	381	3.09	0.81			
6406/1-1	COCH	4788.43	11986	1.96	0.64	0.38	411	2.61	0.75			
6406/1-1	COCH	4791.34	11987	5.11	0.76	0.25	292	5.87	0.87			
6406/1-1	DC	4806	11917A	0.18	2.91	1.75	437	3.09	0.06	195	117	1.49
6406/1-1	DC	4809	11918A	0.23	3.89	0.71	440	4.11	0.05	227	42	1.71
6406/1-1	DC	4812	11919B	0.48	3.43	0.95	437	3.91	0.12	190	52	1.81
6406/1-1	DC	4815	11920B	0.30	3.82	0.73	438	4.12	0.07	215	41	1.78
6406/1-1	DC	4818	11921B	0.29	3.82	1.65	447	4.11	0.07	124	54	3.08
6406/1-1	DC	4821	11922B	0.27	4.04	1.75	439	4.31	0.06	156	68	2.59
6406/1-1	DC	4857	11924C	0.39	2.67	1.55	418	3.06	0.13	149	86	1.80
6406/1-1	DC	4863	11925A	0.29	2.40	1.14	432	2.68	0.11	169	80	1.42



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Well	Sample type	Lower Depth	APT ID	S1 (mg/g)	S2 (mg/g)	S3 (mg/g)	T <sub>max</sub> (°C)	PP (mg/g)	PI (wt ratio)	HI (mg HC/g TOC)	OI (mg CO <sub>2</sub> /g TOC)	TOC (%)
6406/1-1	DC	4869	11926A	0.27	4.36	0.92	438	4.62	0.06	176	37	2.48
6406/1-1	DC	4872	11927A	0.20	3.83	0.83	441	4.03	0.05	146	32	2.63
6406/1-1	DC	4875	11928A	0.73	1.12	0.20	430	1.86	0.39	88	16	1.27
6406/1-1	DC	4878	11929A	0.34	4.54	0.87	439	4.88	0.07	181	35	2.51
6406/1-1	DC	4878	11929B	0.24	1.27	0.21	428	1.51	0.16	93	15	1.36
6406/1-1	DC	4911	11930B	0.44	5.90	1.53	435	6.34	0.07	227	59	2.60
6406/1-1	DC	4914	11931B	0.75	5.65	1.24	440	6.41	0.12	229	50	2.47
6406/1-1	DC	4935	11932B	0.33	3.39	1.08	427	3.72	0.09	295	94	1.15
6406/1-1	DC	4938	11933A	0.44	3.62	0.84	431	4.05	0.11	225	52	1.61
6406/1-1	DC	4941	11934A	0.57	4.03	0.86	432	4.59	0.12	252	54	1.60
6406/1-1	DC	4944	11935A	0.37	0.88	0.32	429	1.25	0.29	58	21	1.53
6406/1-1	DC	4959	11936B	0.62	4.00	0.75	439	4.62	0.13	168	32	2.38
6406/1-1	DC	4986	11938B	0.42	3.13	0.65	441	3.55	0.12	172	36	1.82
6406/1-1	DC	5004	11939B	1.43	1.74	2.07	421	3.17	0.45	164	195	1.06
6406/1-1	DC	5007	11940B	0.40	2.23	0.73	429	2.62	0.15	137	45	1.63
6406/1-1	DC	5010	11941B	0.29	1.07	13.03	390	1.36	0.22	127	1551	0.84
6406/1-1	DC	5013	11942B	0.29	1.49	0.80	428	1.78	0.16	213	114	0.70
6406/1-1	DC	5019	11943B	0.28	1.30	0.64	426	1.58	0.18	157	77	0.83
6406/1-1	DC	5022	11944B	0.31	1.58	0.61	432	1.89	0.16	129	50	1.22
6406/1-1	DC	5025	11945B	0.29	0.89	2.84	394	1.18	0.25	89	284	1.00
6406/1-1	DC	5034	11946C	0.26	1.85	1.71	430	2.11	0.12	195	180	0.95
6406/1-1	DC	5049	11948A	0.57	1.30	0.78	428	1.87	0.30	120	72	1.09
6406/1-1	DC	5052	11949A	0.17	0.95	0.62	432	1.12	0.16	135	89	0.70
6406/1-1	DC	5055	11950A	0.16	1.28	0.65	432	1.44	0.11	194	98	0.66
6406/1-1	DC	5057	11951B	0.29	1.43	0.49	430	1.72	0.17	161	55	0.89



Table 5. GC of Whole Oil (peak area)

Well	Sample type	Sample name	Lower Depth	APT ID	IS 2,2,4-TMC5	n-C3	i-C4	n-C4	i-C5	n-C5	2,2-DMC4	CyC5	2,3-DMC4	2-MC5	3-MC5	n-C6	2,2-DMC5
6406/1-1	Oil	01-261	4679.80	11988	9.48e4	3.53e4	7.49e4	1.45e5	2.42e5	2.02e5	2.66e4	1.63e4	4.54e4	1.83e5	1.17e5	2.53e5	1.72e4

Table 5. continued, GC of Whole Oil (peak area)

Well	Sample type	Sample name	Lower Depth	APT ID	MCyC5	2,4-DMC5	2,2,3-TMC4	Benz	3,3-DMC5	CyC6	2-MC6	2,3-DMC5	1,1-DMCyC5	3-MC6	e-1,3-DMCyC5	t-1,3-DMCyC5	3-EC5
6406/1-1	Oil	01-261	4679.80	11988	1.34e5	2.49e4	6.19e3	2.39e5	1.08e4	1.95e5	1.44e5	3.54e4	2.13e4	1.39e5	2.86e4	2.77e4	9.24e3

Table 5. continued, GC of Whole Oil (peak area)

Well	Sample type	Sample name	Lower Depth	APT ID	t-1,2-DMCyC5	n-C7	e-1,2-DMCyC5	MCyC6	1,1,3-TMCyC5	ECyC5	2,5-DMC6	2,2,3-TMC5/2,4-DMC6	e-1,2,4-TMCyC5	3,3-DMC6	t-1,2,3-TMCyC5	2,3,4-TMC5	Tol
6406/1-1	Oil	01-261	4679.80	11988	4.21e4	2.80e5	0.00e0	4.26e5	2.23e4	1.51e4	2.53e4	2.72e4	1.07e4	8.26e3	8.11e3	6.36e2	5.38e5





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Table 5. continued, GC of Whole Oil (peak area)

Well	Sample type	Sample name	Lower Depth	APT ID	2,3-DMC6	2-MC7	4-MC7	3-MC7	o-1,3-DMCyC6	i-1,4-DMCyC6	1,1-DMCyC6	t-1,2-DMCyC6	n-C8	E-CyC6	i-C9	E-Benz	m-Xyl
6406/1-1	Oil	01-261	4679.80	11988	2.10e4	1.29e5	4.42e4	1.12e5	8.96e4	3.50e4	3.90e3	2.93e4	2.74e5	6.77e4	1.51e4	5.02e4	3.30e5

Table 5. continued, GC of Whole Oil (peak area)

Well	Sample type	Sample name	Lower Depth	APT ID	p-Xyl	4-MC8	2-MC8	3-MC8	o-Xyl	n-C9	i-C10	n-C10	i-C11	n-C11	n-C12	i-C13	i-C14
6406/1-1	Oil	01-261	4679.80	11988	9.93e4	5.41e4	7.40e4	7.72e4	1.01e5	2.63e5	4.22e4	2.41e5	3.63e4	2.27e5	2.15e5	4.52e4	4.91e4

Table 5. continued, GC of Whole Oil (peak area)

Well	Sample type	Sample name	Lower Depth	APT ID	n-C13	i-C15	n-C14	i-C16	n-C15	n-C16	i-C18	n-C17	i-C19	n-C18	i-C20	n-C19	n-C20
6406/1-1	Oil	01-261	4679.80	11988	2.07e5	4.11e4	2.12e5	9.85e4	1.87e5	1.55e5	3.91e4	1.37e5	5.98e4	1.20e5	3.50e4	1.13e5	1.00e5

Table 5. continued, GC of Whole Oil (peak area)

Well	Sample type	Sample name	Lower Depth	APT ID	n-C21	n-C22	n-C23	n-C24	n-C25
6406/1-1	Oil	01-261	4679.80	11988	8.62e4	7.89e4	6.82e4	6.08e4	5.20e4



Table 6. GC of Whole Oil (amounts in ng/g)

Well	Sample type	Sample name	Lower Depth	APT ID	IS 2,2,4-TMC5	n-C3	i-C4	n-C4	i-C5	n-C5	2,2-DMC4	CyC5	2,3-DMC4	2-MC5	3-MC5	n-C6	2,2-DMC5
6406/1-1	Oil	01-261	4679.80	11988	5.65e6	2.16e6	4.54e6	8.81e6	1.45e7	1.22e7	1.59e6	9.56e5	2.72e6	1.10e7	7.02e6	1.51e7	1.02e6

Table 6. continued, GC of Whole Oil (amounts in ng/g)

Well	Sample type	Sample name	Lower Depth	APT ID	MCyC5	2,4-DMC5	2,2,3-TMC4	Benz	3,3-DMC5	CyC6	2-MC6	2,3-DMC5	1,1-DMCyC5	3-MC6	e-1,3-DMCyC5	i-1,3-DMCyC5	3-EC5
6406/1-1	Oil	01-261	4679.80	11988	7.85e6	1.49e6	3.69e5	1.30e7	6.47e5	1.14e7	8.59e6	2.11e6	1.24e6	8.28e6	1.67e6	1.62e6	5.52e5

Table 6. continued, GC of Whole Oil (amounts in ng/g)

Well	Sample type	Sample name	Lower Depth	APT ID	i-1,2-DMCyC5	n-C7	e-1,2-DMCyC5	MCyC6	1,1,3-TMCyC5	ECyC5	2,5-DMC6	2,2,3-TMC5/2,4-DMC6	e-1,2,4-TMCyC5	3,3-DMC6	t-1,2,3-TMCyC5	2,3,4-TMC5	Tol
6406/1-1	Oil	01-261	4679.80	11988	2.46e6	1.67e7	0.00e0	2.49e7	1.30e6	8.85e5	1.51e6	1.62e6	6.25e5	4.92e5	4.74e5	3.79e4	2.95e7



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Table 6. continued, GC of Whole Oil (amounts in ng/g)

Well	Sample type	Sample name	Lower Depth	APT ID	2,3-DMC6	2-MC7	4-MC7	3-MC7	o-1,3-DMCyC6	i-1,4-DMCyC6	1,1-DMCyC6	t-1,2-DMCyC6	n-C8	E-CyC6	i-C9	E-Benz	m-Xyl
6406/1-1	Oil	01-261	4679.80	11988	1.25e6	7.69e6	2.63e6	6.67e6	5.24e6	2.05e6	2.28e5	1.71e6	1.63e7	3.96e6	8.97e5	2.78e6	1.83e7

Table 6. continued, GC of Whole Oil (amounts in ng/g)

Well	Sample type	Sample name	Lower Depth	APT ID	p-Xyl	4-MC8	2-MC8	3-MC8	o-Xyl	n-C9	i-C10	n-C10	i-C11	n-C11	n-C12	i-C13	i-C14
6406/1-1	Oil	01-261	4679.80	11988	5.50e6	3.21e6	4.40e6	4.59e6	5.60e6	1.56e7	2.50e6	1.43e7	2.15e6	1.34e7	1.27e7	2.67e6	2.90e6

Table 6. continued, GC of Whole Oil (amounts in ng/g)

Well	Sample type	Sample name	Lower Depth	APT ID	n-C13	i-C15	n-C14	i-C16	n-C15	n-C16	i-C18	n-C17	i-C19	n-C18	i-C20	n-C19	n-C20
6406/1-1	Oil	01-261	4679.80	11988	1.22e7	2.43e6	1.25e7	5.82e6	1.11e7	9.18e6	2.31e6	8.10e6	3.53e6	7.08e6	2.06e6	6.68e6	5.90e6

Table 6. continued, GC of Whole Oil (amounts in ng/g)

Well	Sample type	Sample name	Lower Depth	APT ID	n-C21	n-C22	n-C23	n-C24	n-C25
6406/1-1	Oil	01-261	4679.80	11988	5.08e6	4.65e6	4.01e6	3.58e6	3.06e6



Table 7. GC of saturated compounds (peak area)

Well	Sample type	Sample name	Lower Depth	APT ID	n-C10	n-C11	n-C12	i-C13	i-C14	n-C13	i-C15	n-C14	i-C16	n-C15	n-C16	i-C18	n-C17
6406/1-1	Mud		4675	11952	1.89e3	1.17e4	8.27e4	6.75e4	3.66e4	4.85e5	1.92e5	1.34e6	5.63e5	9.37e5	2.85e5	3.64e4	1.61e5
6406/1-1	Oil	01-261	4679.80	11988	1.23e6	1.18e6	1.10e6	2.40e5	2.01e5	1.14e6	2.16e5	1.11e6	3.52e5	9.60e5	7.91e5	2.23e5	6.92e5
6406/1-1	COCH		4680.74	11956	3.95e2	7.84e2	4.06e3	2.85e3	6.69e3	1.14e5	1.22e5	1.17e6	7.64e5	1.62e6	8.29e5	1.41e5	5.86e5
6406/1-1	COCH		4684.11	11957	5.85e2	1.34e3	1.46e4	1.08e4	2.00e4	2.99e5	1.92e5	1.64e6	9.69e5	1.81e6	6.96e5	9.95e4	4.90e5
6406/1-1	COCH		4689.25	11959	7.53e2	2.18e3	3.33e4	2.31e4	2.52e4	5.60e5	3.00e5	2.72e6	8.90e5	1.99e6	7.85e5	1.28e5	4.92e5
6406/1-1	COCH		4705.68	11962	4.27e2	1.33e3	1.99e4	1.38e4	2.00e4	2.93e5	1.72e5	1.39e6	6.14e5	9.97e5	3.46e5	6.17e4	2.14e5
6406/1-1	COCH		4710.70	11963	4.29e2	1.20e3	1.93e4	1.37e4	1.97e4	3.61e5	2.12e5	2.04e6	1.20e6	2.19e6	1.01e6	1.93e5	7.26e5
6406/1-1	COCH		4717.84	11966	1.18e3	2.01e3	1.45e4	1.05e4	1.99e4	2.21e5	1.21e5	1.03e6	4.99e5	8.29e5	3.20e5	4.64e4	2.11e5
6406/1-1	COCH		4726.37	11967	3.11e2	7.93e2	1.16e4	1.02e4	1.83e4	2.63e5	1.92e5	1.46e6	7.89e5	1.43e6	6.05e5	9.67e4	4.00e5
6406/1-1	COCH		4735.34	11969	1.08e2	5.71e2	9.70e3	8.76e3	1.94e4	2.51e5	1.68e5	1.32e6	6.54e5	1.15e6	4.44e5	6.64e4	3.06e5
6406/1-1	COCH		4742.67	11972	0.00e0	3.76e2	7.03e3	6.33e3	1.39e4	1.62e5	1.23e5	8.86e5	5.16e5	9.31e5	3.76e5	6.59e4	2.62e5
6406/1-1	COCH		4749.68	11974	7.83e1	5.91e2	1.07e4	8.99e3	2.01e4	2.51e5	1.79e5	1.35e6	6.94e5	1.13e6	4.39e5	7.01e4	2.99e5
6406/1-1	COCH		4753.82	11976	0.00e0	4.16e2	6.50e3	5.26e3	1.31e4	1.57e5	1.18e5	8.56e5	4.96e5	8.39e5	3.52e5	6.60e4	2.44e5
6406/1-1	COCH		4756.60	11978	1.89e2	9.62e2	9.37e3	6.55e3	1.48e4	1.60e5	1.09e5	7.23e5	3.90e5	6.84e5	2.50e5	3.57e4	1.79e5
6406/1-1	COCH		4761.15	11980	1.21e2	9.56e2	8.84e3	5.67e3	1.33e4	1.23e5	7.73e4	5.14e5	2.86e5	4.66e5	2.00e5	1.71e4	1.63e5
6406/1-1	COCH		4766.93	11981	3.18e3	8.18e3	3.32e4	1.51e4	2.74e4	2.49e5	1.42e5	9.05e5	4.41e5	8.26e5	3.70e5	3.76e4	3.04e5
6406/1-1	COCH		4779.37	11984	0.00e0	2.28e3	2.08e4	1.27e4	2.37e4	2.27e5	1.30e5	9.85e5	4.84e5	8.15e5	3.60e5	3.20e4	2.68e5
6406/1-1	COCH		4782.15	11985	0.00e0	1.17e3	1.31e4	8.50e3	1.78e4	1.90e5	1.40e5	1.01e6	5.18e5	8.75e5	3.51e5	3.61e4	2.45e5
6406/1-1	COCH		4791.34	11987	0.00e0	7.78e2	8.71e3	6.65e3	1.27e4	1.34e5	9.27e4	7.71e5	4.73e5	8.70e5	3.70e5	5.51e4	2.57e5
6406/1-1	DC		4800	11916	0.00e0	1.99e2	2.03e3	1.78e3	6.37e3	9.19e4	1.03e5	8.15e5	4.99e5	8.94e5	4.18e5	7.60e4	3.40e5
6406/1-1	DC		4836	11923	1.12e3	1.40e3	5.89e3	3.37e3	9.26e3	1.11e5	9.08e4	6.34e5	3.78e5	7.12e5	2.93e5	4.94e4	2.04e5
6406/1-1	DC		4968	11937	3.08e2	4.96e2	8.47e3	7.57e3	1.65e4	2.05e5	1.32e5	1.14e6	5.76e5	9.76e5	3.33e5	4.53e4	2.17e5
6406/1-1	DC		5040	11947	0.00e0	7.08e2	1.68e4	1.30e4	2.17e4	2.47e5	1.51e5	1.02e6	5.09e5	8.38e5	2.72e5	4.31e4	1.76e5



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Table 7. continued, GC of saturated compounds (peak area)

Well	Sample type	Sample name	Lower Depth	APT ID	Pr	n-C18	Ph	n-C19	n-C20	n-C21	n-C22	n-C23	n-C24	n-C25	n-C26	n-C27	n-C28
6406/1-1	Mud		4675	11952	6.25e4	9.40e4	1.99e4	6.74e4	4.37e4	2.54e4	1.33e4	6.42e3	3.03e3	1.29e3	5.76e2	5.01e2	3.43e2
6406/1-1	Oil	01-261	4679.80	11988	3.11e5	6.05e5	1.82e5	5.40e5	4.93e5	4.19e5	3.77e5	3.22e5	2.89e5	2.40e5	1.89e5	1.54e5	1.17e5
6406/1-1	COCH		4680.74	11956	2.68e5	4.06e5	1.11e5	3.12e5	2.28e5	1.61e5	1.09e5	7.50e4	5.75e4	4.32e4	3.31e4	2.66e4	2.03e4
6406/1-1	COCH		4684.11	11957	2.02e5	3.23e5	7.81e4	2.33e5	1.74e5	1.18e5	7.95e4	5.57e4	4.25e4	3.26e4	2.44e4	2.01e4	1.58e4
6406/1-1	COCH		4689.25	11959	2.08e5	3.09e5	7.77e4	2.27e5	1.78e5	1.12e5	7.33e4	4.81e4	3.57e4	2.60e4	2.02e4	1.65e4	1.27e4
6406/1-1	COCH		4705.68	11962	9.71e4	1.42e5	4.11e4	1.06e5	8.10e4	5.21e4	3.64e4	2.64e4	2.14e4	1.73e4	1.39e4	1.21e4	9.98e3
6406/1-1	COCH		4710.70	11963	2.86e5	4.48e5	1.02e5	3.09e5	2.15e5	1.29e5	7.08e4	3.75e4	2.08e4	1.24e4	7.93e3	6.30e3	4.89e3
6406/1-1	COCH		4717.84	11966	9.47e4	1.47e5	4.12e4	1.17e5	1.02e5	7.14e4	5.52e4	4.33e4	3.82e4	3.15e4	2.46e4	2.22e4	1.80e4
6406/1-1	COCH		4726.37	11967	1.83e5	2.56e5	6.69e4	1.93e5	1.37e5	8.11e4	4.69e4	2.60e4	1.71e4	1.16e4	8.42e3	7.53e3	6.40e3
6406/1-1	COCH		4735.34	11969	1.49e5	2.07e5	6.60e4	1.62e5	1.29e5	8.23e4	5.61e4	3.94e4	3.11e4	2.48e4	1.94e4	1.77e4	1.45e4
6406/1-1	COCH		4742.67	11972	1.16e5	1.72e5	4.97e4	1.29e5	8.93e4	5.53e4	3.21e4	1.78e4	1.15e4	7.86e3	5.47e3	4.96e3	4.18e3
6406/1-1	COCH		4749.68	11974	1.41e5	1.96e5	5.52e4	1.44e5	1.06e5	7.17e4	4.58e4	2.94e4	2.19e4	1.67e4	1.27e4	1.15e4	9.37e3
6406/1-1	COCH		4753.82	11976	1.06e5	1.60e5	3.99e4	1.16e5	8.09e4	4.97e4	2.77e4	1.54e4	9.26e3	6.07e3	4.48e3	3.59e3	3.13e3
6406/1-1	COCH		4756.60	11978	9.53e4	1.26e5	4.56e4	1.03e5	8.88e4	6.57e4	5.34e4	4.34e4	3.85e4	3.24e4	2.63e4	2.23e4	1.83e4
6406/1-1	COCH		4761.15	11980	9.52e4	1.30e5	5.19e4	1.16e5	1.05e5	8.73e4	7.67e4	6.50e4	5.93e4	5.03e4	3.91e4	3.49e4	2.80e4
6406/1-1	COCH		4766.93	11981	1.75e5	2.43e5	1.01e5	2.14e5	2.05e5	1.68e5	1.52e5	1.32e5	1.20e5	1.02e5	8.21e4	7.13e4	5.83e4
6406/1-1	COCH		4779.37	11984	1.47e5	2.04e5	7.57e4	1.64e5	1.38e5	1.12e5	9.32e4	7.72e4	7.00e4	5.88e4	4.66e4	4.08e4	3.35e4
6406/1-1	COCH		4782.15	11985	1.30e5	1.81e5	5.79e4	1.44e5	1.25e5	9.20e4	7.43e4	5.99e4	5.37e4	4.59e4	3.62e4	3.17e4	2.62e4
6406/1-1	COCH		4791.34	11987	1.15e5	1.67e5	4.42e4	1.23e5	8.72e4	5.16e4	2.89e4	1.61e4	9.59e3	5.94e3	4.20e3	4.02e3	3.38e3
6406/1-1	DC		4800	11916	1.59e5	2.31e5	5.90e4	1.90e5	1.32e5	7.95e4	4.47e4	2.21e4	1.10e4	4.90e3	2.56e3	1.97e3	1.32e3
6406/1-1	DC		4836	11923	9.21e4	1.37e5	3.03e4	1.05e5	8.16e4	4.68e4	2.62e4	1.30e4	6.41e3	3.05e3	1.10e3	1.23e3	6.90e2
6406/1-1	DC		4968	11937	8.85e4	1.35e5	2.91e4	1.04e5	7.18e4	3.94e4	2.07e4	1.00e4	4.74e3	1.98e3	8.70e2	7.07e2	4.57e2
6406/1-1	DC		5040	11947	7.15e4	1.08e5	2.56e4	8.23e4	6.18e4	3.40e4	1.87e4	9.22e3	4.37e3	2.08e3	8.23e2	8.83e2	4.76e2



Table 7. continued, GC of saturated compounds (peak area)

Well	Sample type	Sample name	Lower Depth	APT ID	n-C29	n-C30	n-C31	n-C32	n-C33	n-C34	n-C35	n-C36
6406/1-1	Mud		4675	11952	3.24e2	1.81e2	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
6406/1-1	Oil	01-261	4679.80	11988	9.06e4	6.43e4	4.42e4	2.77e4	1.71e4	1.89e4	9.91e3	3.77e3
6406/1-1	COCH		4680.74	11956	1.65e4	1.24e4	1.30e4	6.48e3	5.26e3	4.46e3	2.17e3	1.17e3
6406/1-1	COCH		4684.11	11957	1.23e4	9.92e3	1.02e4	5.11e3	4.13e3	3.17e3	1.87e3	1.14e3
6406/1-1	COCH		4689.25	11959	1.08e4	8.46e3	9.00e3	4.79e3	3.79e3	2.80e3	1.61e3	9.68e2
6406/1-1	COCH		4705.68	11962	8.28e3	6.57e3	6.17e3	3.73e3	2.71e3	2.65e3	1.26e3	7.09e2
6406/1-1	COCH		4710.70	11963	4.31e3	3.16e3	6.43e3	1.96e3	2.10e3	1.29e3	5.41e2	2.09e2
6406/1-1	COCH		4717.84	11966	1.39e4	1.11e4	1.02e4	6.28e3	4.03e3	4.63e3	2.37e3	1.32e3
6406/1-1	COCH		4726.37	11967	5.40e3	3.78e3	5.26e3	2.17e3	1.87e3	1.42e3	5.99e2	3.71e2
6406/1-1	COCH		4735.34	11969	1.24e4	9.82e3	9.16e3	5.58e3	3.84e3	3.53e3	1.96e3	9.82e2
6406/1-1	COCH		4742.67	11972	3.51e3	2.32e3	3.82e3	1.54e3	1.33e3	8.18e2	3.60e2	1.62e2
6406/1-1	COCH		4749.68	11974	7.93e3	6.31e3	6.81e3	3.74e3	2.85e3	2.25e3	1.22e3	7.15e2
6406/1-1	COCH		4753.82	11976	3.02e3	1.79e3	3.04e3	1.04e3	1.08e3	6.70e2	2.43e2	1.02e2
6406/1-1	COCH		4756.60	11978	1.52e4	1.20e4	1.05e4	6.59e3	4.94e3	4.94e3	2.67e3	1.40e3
6406/1-1	COCH		4761.15	11980	2.29e4	1.86e4	1.48e4	1.01e4	6.94e3	6.95e3	4.28e3	2.55e3
6406/1-1	COCH		4766.93	11981	4.71e4	3.73e4	2.95e4	2.07e4	1.34e4	1.60e4	8.31e3	4.71e3
6406/1-1	COCH		4779.37	11984	2.86e4	2.13e4	1.72e4	1.15e4	7.93e3	1.01e4	5.63e3	2.93e3
6406/1-1	COCH		4782.15	11985	2.10e4	1.71e4	1.46e4	9.26e3	6.65e3	8.04e3	4.06e3	2.35e3
6406/1-1	COCH		4791.34	11987	2.92e3	1.97e3	3.51e3	1.25e3	1.15e3	7.32e2	4.07e2	2.28e2
6406/1-1	DC		4800	11916	9.88e2	5.76e2	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
6406/1-1	DC		4836	11923	5.65e2	3.05e2	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
6406/1-1	DC		4968	11937	3.99e2	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
6406/1-1	DC		5040	11947	4.67e2	1.91e2	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0



Table 8. GC of saturated compounds (amounts in ng/g)

Well	Sample type	Sample name	Lower Depth	APT ID	n-C10	n-C11	n-C12	i-C13	i-C14	n-C13	i-C15	n-C14	i-C16	n-C15	n-C16	i-C18	n-C17
6406/1-1	Mud		4675	11952	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
6406/1-1	Oil	01-261	4679.80	11988	1.55e7	1.48e7	1.39e7	3.02e6	2.53e6	1.43e7	2.72e6	1.40e7	4.42e6	1.21e7	9.94e6	2.80e6	8.69e6
6406/1-1	COCH		4680.74	11956	4.88e3	9.70e3	5.03e4	3.53e4	8.28e4	1.41e6	1.51e6	1.44e7	9.46e6	2.01e7	1.03e7	1.74e6	7.25e6
6406/1-1	COCH		4684.11	11957	7.80e3	1.79e4	1.95e5	1.44e5	2.67e5	3.99e6	2.56e6	2.19e7	1.29e7	2.41e7	9.28e6	1.33e6	6.54e6
6406/1-1	COCH		4689.25	11959	9.14e3	2.64e4	4.05e5	2.80e5	3.07e5	6.81e6	3.65e6	3.30e7	1.08e7	2.41e7	9.54e6	1.55e6	5.98e6
6406/1-1	COCH		4705.68	11962	7.18e3	2.23e4	3.35e5	2.32e5	3.37e5	4.93e6	2.89e6	2.34e7	1.03e7	1.68e7	5.82e6	1.04e6	3.61e6
6406/1-1	COCH		4710.70	11963	4.30e3	1.20e4	1.94e5	1.37e5	1.98e5	3.63e6	2.13e6	2.04e7	1.21e7	2.20e7	1.02e7	1.93e6	7.29e6
6406/1-1	COCH		4717.84	11966	1.60e4	2.72e4	1.96e5	1.42e5	2.70e5	2.99e6	1.65e6	1.40e7	6.76e6	1.12e7	4.34e6	6.29e5	2.86e6
6406/1-1	COCH		4726.37	11967	4.26e3	1.09e4	1.59e5	1.40e5	2.50e5	3.60e6	2.63e6	2.00e7	1.08e7	1.96e7	8.29e6	1.32e6	5.48e6
6406/1-1	COCH		4735.34	11969	1.50e3	7.96e3	1.35e5	1.22e5	2.70e5	3.50e6	2.34e6	1.84e7	9.11e6	1.60e7	6.19e6	9.26e5	4.27e6
6406/1-1	COCH		4742.67	11972	0.00e0	6.36e3	1.19e5	1.07e5	2.35e5	2.74e6	2.08e6	1.50e7	8.73e6	1.57e7	6.36e6	1.11e6	4.43e6
6406/1-1	COCH		4749.68	11974	1.04e3	7.82e3	1.42e5	1.19e5	2.66e5	3.32e6	2.37e6	1.79e7	9.19e6	1.50e7	5.81e6	9.27e5	3.96e6
6406/1-1	COCH		4753.82	11976	0.00e0	7.51e3	1.17e5	9.51e4	2.37e5	2.84e6	2.13e6	1.55e7	8.96e6	1.52e7	6.35e6	1.19e6	4.42e6
6406/1-1	COCH		4756.60	11978	4.03e3	2.06e4	2.00e5	1.40e5	3.16e5	3.42e6	2.32e6	1.55e7	8.33e6	1.46e7	5.35e6	7.64e5	3.82e6
6406/1-1	COCH		4761.15	11980	3.47e3	2.74e4	2.53e5	1.63e5	3.81e5	3.53e6	2.22e6	1.47e7	8.19e6	1.34e7	5.75e6	4.92e5	4.68e6
6406/1-1	COCH		4766.93	11981	4.52e4	1.16e5	4.73e5	2.14e5	3.90e5	3.55e6	2.02e6	1.29e7	6.28e6	1.18e7	5.27e6	5.35e5	4.33e6
6406/1-1	COCH		4779.37	11984	0.00e0	4.19e4	3.81e5	2.34e5	4.36e5	4.18e6	2.38e6	1.81e7	8.89e6	1.50e7	6.62e6	5.87e5	4.92e6
6406/1-1	COCH		4782.15	11985	0.00e0	1.60e4	1.81e5	1.17e5	2.44e5	2.62e6	1.93e6	1.39e7	7.12e6	1.20e7	4.82e6	4.96e5	3.36e6
6406/1-1	COCH		4791.34	11987	0.00e0	1.43e4	1.60e5	1.23e5	2.35e5	2.47e6	1.71e6	1.42e7	8.71e6	1.60e7	6.81e6	1.02e6	4.73e6
6406/1-1	DC		4800	11916	0.00e0	2.80e3	2.86e4	2.50e4	8.96e4	1.29e6	1.45e6	1.15e7	7.01e6	1.26e7	5.88e6	1.07e6	4.78e6
6406/1-1	DC		4836	11923	2.28e4	2.84e4	1.20e5	6.86e4	1.88e5	2.26e6	1.85e6	1.29e7	7.69e6	1.45e7	5.97e6	1.01e6	4.15e6
6406/1-1	DC		4968	11937	5.08e3	8.18e3	1.40e5	1.25e5	2.72e5	3.39e6	2.18e6	1.89e7	9.50e6	1.61e7	5.49e6	7.47e5	3.57e6
6406/1-1	DC		5040	11947	0.00e0	1.28e4	3.04e5	2.36e5	3.93e5	4.49e6	2.74e6	1.85e7	9.24e6	1.52e7	4.92e6	7.82e5	3.19e6



Table 8. continued, GC of saturated compounds (amounts in ng/g)

Well	Sample type	Sample name	Lower Depth	APT ID	Pr	n-C18	Ph	n-C19	n-C20	n-C21	n-C22	n-C23	n-C24	n-C25	n-C26	n-C27	n-C28
6406/1-1	Mud		4675	11952	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
6406/1-1	Oil	01-261	4679.80	11988	3.91e6	7.59e6	2.28e6	6.78e6	6.19e6	5.26e6	4.74e6	4.05e6	3.63e6	3.02e6	2.37e6	1.93e6	1.46e6
6406/1-1	COCH		4680.74	11956	3.31e6	5.03e6	1.37e6	3.86e6	2.82e6	1.99e6	1.35e6	9.28e5	7.11e5	5.34e5	4.09e5	3.29e5	2.52e5
6406/1-1	COCH		4684.11	11957	2.69e6	4.30e6	1.04e6	3.10e6	2.32e6	1.57e6	1.06e6	7.43e5	5.67e5	4.35e5	3.25e5	2.68e5	2.11e5
6406/1-1	COCH		4689.25	11959	2.53e6	3.75e6	9.44e5	2.76e6	2.16e6	1.36e6	8.91e5	5.85e5	4.33e5	3.16e5	2.45e5	2.00e5	1.54e5
6406/1-1	COCH		4705.68	11962	1.63e6	2.39e6	6.91e5	1.78e6	1.36e6	8.77e5	6.13e5	4.44e5	3.60e5	2.91e5	2.34e5	2.04e5	1.68e5
6406/1-1	COCH		4710.70	11963	2.87e6	4.49e6	1.03e6	3.10e6	2.16e6	1.29e6	7.10e5	3.76e5	2.08e5	1.24e5	7.96e4	6.32e4	4.91e4
6406/1-1	COCH		4717.84	11966	1.28e6	2.00e6	5.58e5	1.58e6	1.38e6	9.67e5	7.48e5	5.86e5	5.18e5	4.27e5	3.33e5	3.00e5	2.44e5
6406/1-1	COCH		4726.37	11967	2.51e6	3.51e6	9.16e5	2.65e6	1.88e6	1.11e6	6.42e5	3.56e5	2.34e5	1.59e5	1.15e5	1.03e5	8.76e4
6406/1-1	COCH		4735.34	11969	2.07e6	2.89e6	9.20e5	2.26e6	1.80e6	1.15e6	7.81e5	5.50e5	4.34e5	3.45e5	2.70e5	2.47e5	2.02e5
6406/1-1	COCH		4742.67	11972	1.96e6	2.91e6	8.40e5	2.18e6	1.51e6	9.34e5	5.42e5	3.01e5	1.95e5	1.33e5	9.24e4	8.38e4	7.06e4
6406/1-1	COCH		4749.68	11974	1.87e6	2.60e6	7.30e5	1.91e6	1.40e6	9.49e5	6.06e5	3.89e5	2.89e5	2.21e5	1.68e5	1.52e5	1.24e5
6406/1-1	COCH		4753.82	11976	1.92e6	2.90e6	7.20e5	2.10e6	1.46e6	8.98e5	5.01e5	2.77e5	1.67e5	1.10e5	8.10e4	6.49e4	5.66e4
6406/1-1	COCH		4756.60	11978	2.04e6	2.69e6	9.75e5	2.19e6	1.90e6	1.41e6	1.14e6	9.29e5	8.24e5	6.93e5	5.62e5	4.77e5	3.91e5
6406/1-1	COCH		4761.15	11980	2.73e6	3.74e6	1.49e6	3.32e6	3.02e6	2.50e6	2.20e6	1.86e6	1.70e6	1.44e6	1.12e6	1.00e6	8.04e5
6406/1-1	COCH		4766.93	11981	2.49e6	3.47e6	1.44e6	3.04e6	2.93e6	2.39e6	2.17e6	1.87e6	1.71e6	1.46e6	1.17e6	1.02e6	8.31e5
6406/1-1	COCH		4779.37	11984	2.70e6	3.75e6	1.39e6	3.02e6	2.53e6	2.05e6	1.71e6	1.42e6	1.29e6	1.08e6	8.57e5	7.49e5	6.15e5
6406/1-1	COCH		4782.15	11985	1.79e6	2.48e6	7.96e5	1.98e6	1.72e6	1.26e6	1.02e6	8.23e5	7.39e5	6.31e5	4.97e5	4.36e5	3.60e5
6406/1-1	COCH		4791.34	11987	2.11e6	3.08e6	8.14e5	2.27e6	1.61e6	9.50e5	5.32e5	2.96e5	1.77e5	1.09e5	7.74e4	7.40e4	6.22e4
6406/1-1	DC		4800	11916	2.24e6	3.24e6	8.29e5	2.67e6	1.85e6	1.12e6	6.28e5	3.10e5	1.55e5	6.89e4	3.59e4	2.76e4	1.85e4
6406/1-1	DC		4836	11923	1.88e6	2.79e6	6.17e5	2.14e6	1.66e6	9.52e5	5.33e5	2.65e5	1.31e5	6.21e4	2.24e4	2.51e4	1.40e4
6406/1-1	DC		4968	11937	1.46e6	2.22e6	4.80e5	1.71e6	1.18e6	6.49e5	3.42e5	1.65e5	7.82e4	3.27e4	1.43e4	1.17e4	7.53e3
6406/1-1	DC		5040	11947	1.30e6	1.96e6	4.63e5	1.49e6	1.12e6	6.16e5	3.38e5	1.67e5	7.92e4	3.78e4	1.49e4	1.60e4	8.64e3



Table 8. continued, GC of saturated compounds (amounts in ng/g)

Well	Sample type	Sample name	Lower Depth	APT ID	n-C29	n-C30	n-C31	n-C32	n-C33	n-C34	n-C35	n-C36
6406/1-1	Mud		4675	11952	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
6406/1-1	Oil	01-261	4679.80	11988	1.14e6	8.07e5	5.56e5	3.48e5	2.15e5	2.38e5	1.25e5	4.73e4
6406/1-1	COCH		4680.74	11956	2.04e5	1.53e5	1.61e5	8.02e4	6.51e4	5.52e4	2.69e4	1.45e4
6406/1-1	COCH		4684.11	11957	1.64e5	1.32e5	1.36e5	6.81e4	5.50e4	4.23e4	2.50e4	1.53e4
6406/1-1	COCH		4689.25	11959	1.32e5	1.03e5	1.09e5	5.82e4	4.61e4	3.40e4	1.96e4	1.18e4
6406/1-1	COCH		4705.68	11962	1.39e5	1.10e5	1.04e5	6.28e4	4.56e4	4.46e4	2.12e4	1.19e4
6406/1-1	COCH		4710.70	11963	4.32e4	3.17e4	6.45e4	1.96e4	2.11e4	1.29e4	5.42e3	2.09e3
6406/1-1	COCH		4717.84	11966	1.88e5	1.50e5	1.38e5	8.52e4	5.47e4	6.27e4	3.21e4	1.80e4
6406/1-1	COCH		4726.37	11967	7.39e4	5.18e4	7.20e4	2.97e4	2.55e4	1.95e4	8.20e3	5.08e3
6406/1-1	COCH		4735.34	11969	1.72e5	1.37e5	1.28e5	7.78e4	5.35e4	4.92e4	2.74e4	1.37e4
6406/1-1	COCH		4742.67	11972	5.93e4	3.92e4	6.45e4	2.60e4	2.25e4	1.38e4	6.09e3	2.73e3
6406/1-1	COCH		4749.68	11974	1.05e5	8.35e4	9.01e4	4.96e4	3.78e4	2.98e4	1.62e4	9.46e3
6406/1-1	COCH		4753.82	11976	5.46e4	3.23e4	5.49e4	1.89e4	1.96e4	1.21e4	4.39e3	1.84e3
6406/1-1	COCH		4756.60	11978	3.25e5	2.57e5	2.24e5	1.41e5	1.06e5	1.06e5	5.71e4	2.99e4
6406/1-1	COCH		4761.15	11980	6.56e5	5.33e5	4.26e5	2.88e5	1.99e5	1.99e5	1.23e5	7.30e4
6406/1-1	COCH		4766.93	11981	6.70e5	5.31e5	4.20e5	2.95e5	1.90e5	2.27e5	1.18e5	6.71e4
6406/1-1	COCH		4779.37	11984	5.26e5	3.91e5	3.17e5	2.12e5	1.46e5	1.85e5	1.03e5	5.39e4
6406/1-1	COCH		4782.15	11985	2.89e5	2.35e5	2.01e5	1.27e5	9.14e4	1.10e5	5.57e4	3.22e4
6406/1-1	COCH		4791.34	11987	5.38e4	3.63e4	6.46e4	2.31e4	2.11e4	1.35e4	7.50e3	4.20e3
6406/1-1	DC		4800	11916	1.39e4	8.10e3	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
6406/1-1	DC		4836	11923	1.15e4	6.21e3	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
6406/1-1	DC		4968	11937	6.58e3	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
6406/1-1	DC		5040	11947	8.46e3	3.46e3	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0

Table 9. GC of aromatic compounds (peak area)

Well	Sample type	Sample name	Lower Depth	APT ID	2-MN	1-MN	P	3-MP	2-MP	9-MP	1-MP
6406/1-1	Oil	01-261	4679.80	11988	314130	128847	46531	41659	45176	28761	15962



Table 10. Pyrolysis GC (peak area)

Well	Lower Depth	APT ID	%C1 (UCM)	%C2-C5 (UCM)	%C6-C14 (UCM)	%C15+ (UCM)	%C1 (X-UCM)	%C2-C5 (X-UCM)	%C6-C14 (X-UCM)	%C15+ (X-UCM)	C1	C2-C5	C6-C14	C15+	C6-C14 (UCM)	C15+ (UCM)	n-Heptane
6406/1-1	4596	11905A	3.67	17.00	48.32	31.02	5.73	26.53	53.25	14.49	8.89e5	4.12e6	8.27e6	2.25e6	1.17e7	7.52e6	2.10e5
6406/1-1	4818	11921B	6.45	15.60	49.41	28.54	10.05	24.31	52.78	12.86	1.37e6	3.31e6	7.19e6	1.75e6	1.05e7	6.06e6	1.87e5
6406/1-1	4878	11929A	4.68	16.14	46.26	32.91	7.72	26.63	51.71	13.95	8.45e5	2.91e6	5.66e6	1.53e6	8.35e6	5.94e6	1.65e5
6406/1-1	4911	11930B	4.41	15.51	51.18	28.90	6.70	23.54	55.28	14.49	1.40e6	4.91e6	1.15e7	3.02e6	1.62e7	9.16e6	3.10e5
6406/1-1	4941	11934A	2.06	16.03	53.23	28.68	3.29	25.59	57.42	13.70	3.63e5	2.83e6	6.34e6	1.51e6	9.38e6	5.06e6	1.80e5
6406/1-1	5007	11940B	0.00	20.74	57.08	22.18	0.00	33.56	59.44	7.01	0.00e0	2.00e6	3.54e6	4.17e5	5.50e6	2.14e6	9.07e4

Table 10. continued, Pyrolysis GC (peak area)

Well	Lower Depth	APT ID	Tol	n-Octane	m-p-Xyl	Weight (mg)	Comment
6406/1-1	4596	11905A	2.15e5	1.51e5	1.19e5	8.5	pre extr
6406/1-1	4818	11921B	2.18e5	1.36e5	1.05e5	9.7	Pre extr
6406/1-1	4878	11929A	1.71e5	1.17e5	7.71e4	8.3	Pre extr
6406/1-1	4911	11930B	3.10e5	2.32e5	1.53e5	11.6	Pre extr
6406/1-1	4941	11934A	1.77e5	1.29e5	7.41e4	8.6	Pre extr
6406/1-1	5007	11940B	1.05e5	5.80e4	3.52e4	9.6	Pre extr



Table 11. GCMS SIR of saturated compounds (peak height)

Well	Sample type	Sample name	Lower Depth	APT ID	177		191										
					25nor28αβ	25nor30αβ	20/3	21/3	23/3	24/3	25/3R	25/3S	24/4	26/3R	26/3S	28/3R	28/3S
6406/1-1	Mud		4675	11952	0.00e0	0.00e0	1.28e5	9.05e4	4.22e4	2.04e4	0.00e0	0.00e0	3.28e4	1.24e4	1.14e4	0.00e0	0.00e0
6406/1-1	Oil	01-261	4679.80	11988	0.00e0	0.00e0	5.88e4	5.14e4	5.45e4	6.08e4	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
6406/1-1	COCH		4680.74	11956	0.00e0	7.70e4	8.59e5	7.05e5	4.81e5	1.89e5	6.93e4	7.17e4	2.89e5	8.12e4	8.60e4	6.28e4	4.17e4
6406/1-1	COCH		4717.84	11966	0.00e0	3.12e4	2.77e5	2.13e5	1.63e5	8.45e4	3.18e4	2.79e4	1.00e5	3.67e4	3.28e4	2.47e4	2.35e4
6406/1-1	COCH		4766.93	11981	7.51e4	3.17e4	2.81e5	2.76e5	2.52e5	1.85e5	7.91e4	6.96e4	9.65e4	8.17e4	7.46e4	8.00e4	6.17e4
6406/1-1	DC		4800	11916	2.14e4	5.64e4	6.86e5	5.90e5	3.33e5	1.38e5	5.45e4	4.88e4	2.19e5	7.33e4	6.47e4	4.27e4	3.42e4
6406/1-1	DC		4968	11937	1.58e4	3.66e4	4.70e5	3.69e5	1.96e5	7.89e4	3.55e4	3.23e4	1.23e5	3.86e4	3.62e4	2.57e4	2.01e4

Table 11. continued, GCMS SIR of saturated compounds (peak height)

Well	Sample type	Sample name	Lower Depth	APT ID	191												
					29/3R	29/3S	27Ts	27Tm	30/3R	30/3S	28αβ	25nor30αβ	29αβ	29Ts	30d	29βα	30c
6406/1-1	Mud		4675	11952	0.00e0	0.00e0	1.35e4	1.33e5	0.00e0	0.00e0	0.00e0	0.00e0	3.87e5	1.65e4	0.00e0	4.41e4	0.00e0
6406/1-1	Oil	01-261	4679.80	11988	0.00e0	0.00e0	3.04e4	4.64e4	0.00e0	0.00e0	1.66e4	0.00e0	7.33e4	1.47e4	2.20e4	0.00e0	0.00e0
6406/1-1	COCH		4680.74	11956	3.56e4	4.56e4	1.24e5	1.25e6	4.09e4	5.55e4	5.15e4	8.74e4	3.88e6	1.08e5	2.78e4	4.67e5	0.00e0
6406/1-1	COCH		4717.84	11966	2.31e4	2.25e4	6.03e4	4.44e5	0.00e0	0.00e0	2.02e4	3.19e4	1.24e6	4.40e4	3.12e4	1.48e5	0.00e0
6406/1-1	COCH		4766.93	11981	8.88e4	9.44e4	1.24e5	3.59e5	6.34e4	6.88e4	3.66e4	4.53e4	9.98e5	7.57e4	1.21e5	1.31e5	0.00e0
6406/1-1	DC		4800	11916	2.45e4	2.50e4	1.10e5	1.14e6	3.27e4	4.24e4	4.57e4	7.30e4	3.39e6	1.09e5	3.04e4	3.86e5	0.00e0
6406/1-1	DC		4968	11937	1.40e4	1.53e4	6.40e4	6.00e5	0.00e0	0.00e0	2.82e4	4.08e4	1.84e6	7.04e4	2.19e4	1.98e5	0.00e0



Table 11. continued, GCMS SIR of saturated compounds (peak height)

m/e				191													
Well	Sample type	Sample name	Lower Depth	APT ID	30 $\alpha$ S	30 $\beta$ $\alpha$	31 $\alpha$ BS	31 $\alpha$ BR	30G	32 $\alpha$ BS	32 $\alpha$ BR	33 $\alpha$ BS	33 $\alpha$ BR	34 $\alpha$ BS	34 $\alpha$ BR	35 $\alpha$ BS	35 $\alpha$ BR
6406/1-1	Mud		4675	11952	5.86e5	1.42e5	8.40e4	6.22e4	1.77e5	3.23e4	2.30e4	1.98e4	1.66e4	1.00e4	8.57e3	0.00e0	0.00e0
6406/1-1	Oil	01-261	4679.80	11988	1.23e5	3.52e4	2.83e4	2.68e4	4.17e4	2.01e4	1.32e4	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
6406/1-1	COCH		4680.74	11956	6.06e6	1.63e6	1.01e6	7.71e5	1.95e6	4.17e5	3.11e5	2.47e5	1.84e5	1.13e5	8.31e4	7.17e4	5.14e4
6406/1-1	COCH		4717.84	11966	1.85e6	5.46e5	3.22e5	2.29e5	6.14e5	1.34e5	9.52e4	7.27e4	5.90e4	3.26e4	2.85e4	2.48e4	2.26e4
6406/1-1	COCH		4766.93	11981	1.49e6	4.35e5	2.69e5	2.00e5	4.92e5	1.12e5	9.27e4	6.69e4	5.04e4	3.60e4	2.62e4	0.00e0	0.00e0
6406/1-1	DC		4800	11916	5.46e6	1.25e6	7.93e5	6.19e5	1.57e6	3.14e5	2.30e5	1.68e5	1.23e5	7.21e4	5.35e4	4.20e4	3.46e4
6406/1-1	DC		4968	11937	2.75e6	6.28e5	4.10e5	3.03e5	8.29e5	1.64e5	1.16e5	8.30e4	6.17e4	3.48e4	2.95e4	2.68e4	1.52e4

Table 11. continued, GCMS SIR of saturated compounds (peak height)

m/e				217													
Well	Sample type	Sample name	Lower Depth	APT ID	21 $\alpha$ $\alpha$	21 $\beta$ $\beta$	22 $\alpha$ $\alpha$	22 $\beta$ $\beta$	27 $\delta$ bS	27 $\delta$ bR	27 $\delta$ aR	27 $\delta$ aS	28 $\delta$ bS#1	28 $\delta$ bS#2	28 $\delta$ bR#1	28 $\delta$ bR#2	28 $\delta$ aR
6406/1-1	Mud		4675	11952	7.02e3	7.01e3	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0
6406/1-1	Oil	01-261	4679.80	11988	1.12e5	7.01e4	6.24e4	1.59e4	9.42e4	6.28e4	2.56e4	3.45e4	4.26e4	4.11e4	2.54e4	2.58e4	1.87e4
6406/1-1	COCH		4680.74	11956	8.84e4	8.50e4	4.13e4	4.58e4	9.16e4	5.52e4	2.14e4	3.03e4	4.01e4	3.59e4	2.07e4	3.45e4	2.13e4
6406/1-1	COCH		4717.84	11966	5.18e4	4.40e4	3.25e4	2.15e4	8.71e4	5.46e4	1.93e4	2.85e4	3.72e4	3.87e4	2.24e4	2.51e4	1.72e4
6406/1-1	COCH		4766.93	11981	2.80e5	2.16e5	1.91e5	7.18e4	4.03e5	2.46e5	8.86e4	1.17e5	1.80e5	1.80e5	1.03e5	1.20e5	7.80e4
6406/1-1	DC		4800	11916	4.49e4	3.48e4	1.58e4	2.87e4	7.55e4	4.19e4	1.55e4	2.00e4	2.97e4	2.74e4	1.57e4	2.43e4	1.43e4
6406/1-1	DC		4968	11937	2.65e4	2.53e4	1.18e4	1.79e4	4.11e4	2.52e4	1.19e4	1.06e4	1.57e4	1.49e4	8.04e3	1.20e4	8.96e3



Table 11. continued, GCMS SIR of saturated compounds (peak height)

m/e				217														
Well	Sample type	Sample name	Lower Depth	APT ID	27000S	27000R	27001S	27001R	27002S	27002R	27003S	27003R	27004S	27004R	27005S	27005R	27006S	27006R
6406/1-1	Mud		4675	11952	0.00e0	0.00e0	0.00e0	0.00e0	1.47e4	0.00e0	0.00e0	7.89e3	4.45e3	1.08e4	6.60e3	1.98e4	1.19e4	
6406/1-1	Oil	01-261	4679.80	11988	2.05e4	3.75e4	1.96e4	1.38e4	3.41e4	2.70e4	2.02e4	1.17e4	1.78e4	2.07e4	2.74e4	1.06e4	1.84e4	
6406/1-1	COCH		4680.74	11956	7.00e4	6.79e4	5.07e4	1.64e4	2.41e5	6.06e4	4.63e4	1.19e5	2.30e4	1.44e5	1.15e5	3.36e5	2.10e5	
6406/1-1	COCH		4717.84	11966	3.05e4	4.04e4	2.49e4	1.35e4	8.37e4	3.39e4	2.62e4	3.21e4	1.67e4	5.03e4	3.74e4	9.84e4	6.25e4	
6406/1-1	COCH		4766.93	11981	8.01e4	1.96e5	9.26e4	6.63e4	1.21e5	1.38e5	8.69e4	5.95e4	6.80e4	9.59e4	1.35e5	1.11e5	9.91e4	
6406/1-1	DC		4800	11916	5.39e4	3.97e4	4.26e4	9.75e3	1.73e5	4.47e4	2.90e4	8.25e4	1.52e4	1.08e5	7.24e4	2.32e5	1.40e5	
6406/1-1	DC		4968	11937	2.88e4	1.99e4	2.22e4	7.67e3	8.61e4	2.13e4	1.83e4	3.84e4	6.79e3	4.94e4	3.41e4	1.10e5	5.82e4	

Table 11. continued, GCMS SIR of saturated compounds (peak height)

m/e				217								218					
Well	Sample type	Sample name	Lower Depth	APT ID	29000R	29001S	29001R	29002S	29002R	29003S	29003R	29004S	29004R	29005S	29005R	29006S	29006R
6406/1-1	Mud		4675	11952	7.25e3	7.19e3	1.82e4	0.00e0	0.00e0	0.00e0	0.00e0	6.91e3	4.61e3	1.15e4	1.02e4	8.02e3	7.68e3
6406/1-1	Oil	01-261	4679.80	11988	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	2.18e4	1.78e4	1.56e4	1.93e4	1.93e4	1.91e4
6406/1-1	COCH		4680.74	11956	9.00e4	9.63e4	3.23e5	7.93e4	0.00e0	0.00e0	0.00e0	8.43e4	7.03e4	1.48e5	1.45e5	1.25e5	1.32e5
6406/1-1	COCH		4717.84	11966	3.04e4	3.18e4	8.76e4	2.40e4	0.00e0	0.00e0	0.00e0	3.53e4	2.94e4	4.68e4	4.84e4	4.11e4	4.36e4
6406/1-1	COCH		4766.93	11981	7.48e4	6.83e4	1.05e5	3.60e4	2.76e4	3.33e4	1.86e4	1.14e5	1.02e5	1.01e5	1.23e5	1.04e5	8.98e4
6406/1-1	DC		4800	11916	6.33e4	6.08e4	2.02e5	0.00e0	0.00e0	0.00e0	0.00e0	6.38e4	5.55e4	1.08e5	9.28e4	9.05e4	9.01e4
6406/1-1	DC		4968	11937	3.48e4	3.25e4	1.00e5	0.00e0	0.00e0	0.00e0	0.00e0	3.40e4	2.90e4	5.22e4	5.04e4	4.30e4	4.01e4

Table 11. continued, GCMS SIR of saturated compounds (peak height)

Well	Sample type	Sample name	Lower Depth	APT ID	218	
					30ppR	30ppS
6406/1-1	Mud		4675	11952	0.00e0	0.00e0
6406/1-1	Oil	01-261	4679.80	11988	0.00e0	0.00e0
6406/1-1	COCH		4680.74	11956	0.00e0	0.00e0
6406/1-1	COCH		4717.84	11966	7.02e3	7.85e3
6406/1-1	COCH		4766.93	11981	2.85e4	3.20e4
6406/1-1	DC		4800	11916	0.00e0	0.00e0
6406/1-1	DC		4968	11937	0.00e0	0.00e0

Table 12. GCMS SIR of saturated compounds (amounts in ng/g)

Well	Sample type	Sample name	Lower Depth	APT ID	177		191										
					25nor28cβ	25nor30cβ	20/3	21/3	23/3	24/3	25/3R	25/3S	24/4	26/3R	26/3S	28/3R	28/3S
6406/1-1	Oil	01-261	4679.80	11988	0.00e0	0.00e0	1.19e3	1.04e3	1.11e3	1.23e3	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0



Table 12. continued, GCMS SIR of saturated compounds (amounts in ng/g)

m/e				191													
Well	Sample type	Sample name	Lower Depth	APT ID	29/3R	29/3S	27Ts	27Tm	30/3R	30/3S	28αβ	25nor30αβ	29αβ	29Ts	30d	29βα	30G
6406/1-1	Oil	01-261	4679.80	11988	0.00e0	0.00e0	6.16e2	9.41e2	0.00e0	0.00e0	3.37e2	0.00e0	1.49e3	2.97e2	4.46e2	0.00e0	0.00e0

Table 12. continued, GCMS SIR of saturated compounds (amounts in ng/g)

m/e				191													
Well	Sample type	Sample name	Lower Depth	APT ID	30αβ	30βα	31αβS	31αβR	30G	32αβS	32αβR	33αβS	33αβR	34αβS	34αβR	35αβS	35αβR
6406/1-1	Oil	01-261	4679.80	11988	2.50e3	7.15e2	5.74e2	5.44e2	8.46e2	4.07e2	2.67e2	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0

Table 12. continued, GCMS SIR of saturated compounds (amounts in ng/g)

m/e				217													
Well	Sample type	Sample name	Lower Depth	APT ID	21αα	21ββ	22αα	22ββ	27dbS	27dbR	27daR	27daS	28dbS#1	28dbS#2	28dbR#1	28dbR#2	28daR
6406/1-1	Oil	01-261	4679.80	11988	2.27e3	1.42e3	1.26e3	3.23e2	1.91e3	1.27e3	5.19e2	6.99e2	8.64e2	8.33e2	5.16e2	5.24e2	3.79e2





Table 12. continued, GCMS SIR of saturated compounds (amounts in ng/g)

m/e				217													
Well	Sample type	Sample name	Lower Depth	APT ID	27000S	27000R+29000S	27000R	28000S	27000R	29000R	29000R	28000S	29000S	28000R	28000S	28000R	29000S
6406/1-1	Oil	01-261	4679.80	11988	4.15e2	7.60e2	3.97e2	2.80e2	6.93e2	5.47e2	4.09e2	2.37e2	3.61e2	4.21e2	5.56e2	2.15e2	3.73e2

Table 12. continued, GCMS SIR of saturated compounds (amounts in ng/g)

m/e				217								218					
Well	Sample type	Sample name	Lower Depth	APT ID	29000R	29000S	29000R	30000S	30000R	30000S	30000R	27000R	27000S	28000R	28000S	29000R	29000S
6406/1-1	Oil	01-261	4679.80	11988	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	4.42e2	3.62e2	3.17e2	3.92e2	3.92e2	3.87e2

Table 12. continued, GCMS SIR of saturated compounds (amounts in ng/g)

m/e				218		
Well	Sample type	Sample name	Lower Depth	APT ID	30000R	30000S
6406/1-1	Oil	01-261	4679.80	11988	0.00e0	0.00e0



Table 13. GCMS SIR of aromatic compounds (peak height)

m/e				142				156				170					
Well	Sample type	Sample name	Lower Depth	APT ID	2-MN	1-MN	2-EN	1-EN	2,6-DMN	2,7-DMN	1,3- + 1,7-DMN	1,6-DMN	2,3- + 1,4-DMN	1,5-DMN	1,2-DMN	1,8-DMN	1,3,7-TMN
6406/1-1	Oil	01-261	4679.80	11988	1.34e9	3.08e8	5.03e7	7.52e6	2.42e8	2.54e8	3.03e8	1.81e8	7.47e7	1.93e7	8.26e6	0.00e0	7.05e7

Table 13. continued, GCMS SIR of aromatic compounds (peak height)

m/e													178	192	192	206	
Well	Sample type	Sample name	Lower Depth	APT ID	1,3,6-TMN	1,3,5- + 1,4,6-TMN	2,3,6-TMN	1,2,7-TMN	1,6,7 + 1,2,6-TMN	1,2,4-TMN	1,2,5-TMN	P	3-MP	2-MP	9-MP	1-MP	2-EP+9-EP+3,6-DMP
6406/1-1	Oil	01-261	4679.80	11988	8.60e7	3.49e7	6.73e7	3.66e6	2.72e7	1.37e6	1.77e6	1.78e8	1.01e8	1.10e8	5.03e7	3.55e7	1.72e7

Table 13. continued, GCMS SIR of aromatic compounds (peak height)

m/e													219	184	198		
Well	Sample type	Sample name	Lower Depth	APT ID	1-EP	2,6- + 2,7- + 3,5-DMP	1,3- + 2,10- + 3,9- + 3,10-DMP	1,6- + 2,5- + 2,9-DMP	1,7-DMP	2,3-DMP	1,9- + 4,9- + 4,10-DMP	1,8-DMP	1,2-DMP	Refene	DBT	4-MDBT	(3+2)-MDBT
6406/1-1	Oil	01-261	4679.80	11988	3.95e7	2.06e7	5.33e7	2.40e7	1.79e7	1.29e7	5.28e6	2.34e6	6.86e5	2.41e5	1.21e7	2.92e7	1.17e7



Table 13. continued, GCMS SIR of aromatic compounds (peak height)

Well	Sample type	Sample name	Lower Depth	APT ID	198	253											
					1-MDBT	C21MA	C22MA	bSC27MA	bSC27DMA	bRC27MA+b RC27DMA	aSC27MA	bSC28MA+bS C28DMA+aR C27DMA	aSC27DMA	aRC27MA	aSC28MA	bRC28MA+b RC28DMA	bSC29MA+bS C29DMA
6406/1-1	Oil	01-261	4679.80	11988	7.04e5	2.05e4	1.40e4	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0

Table 13. continued, GCMS SIR of aromatic compounds (peak height)

Well	Sample type	Sample name	Lower Depth	APT ID	253		231							154	168			
					aSC29MA	aRC28MA+b RC29MA+bR C29DMA	aRC29MA	C20TA	C21TA	SC26TA	RC26TA+SC2 7TA	SC28TA	RC27TA	RC28TA	B	2-MB	3-MB	4-MB
6406/1-1	Oil	01-261	4679.80	11988	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	0.00e0	2.28e8	8.49e6	2.50e8	1.03e8

Table 14. Isotopes of fractions,  $\delta^{13}\text{C}$  (‰ PDB)

Well	Sample type	Sample name	Lower Depth	APT ID	Oil/EOM	Sat	Aro	Pol
6406/1-1	Mud		4675	11952		-28.3	-29.3	
6406/1-1	Oil	01-261	4679.80	11988	-28.6	-29.1	-26.6	-28.6
6406/1-1	COCH		4766.93	11981		-28.9	-28.2	



Table 15. Gas Composition

Well	Sample type	Sample name	Lower Depth	APT ID	C1%	C2%	C3%	iC4%	nC4%	iC5%	nC5%	CO <sub>2</sub> %	Sum C1-C5	Wefn	iC4/nC4	C1 δ <sup>13</sup> C	C2 δ <sup>13</sup> C
6406/1-1	Gas	MDT2C	4680	12894	86.90	5.80	1.90	0.40	0.50	0.20	0.10	4.20	95.80	9.0	0.80	-44.0	-29.6

Table 15. continued, Gas Composition

Well	Sample type	Sample name	Lower Depth	APT ID	C3 δ <sup>13</sup> C	iC4 δ <sup>13</sup> C	nC4 δ <sup>13</sup> C	iC5 δ <sup>13</sup> C	nC5 δ <sup>13</sup> C	CO <sub>2</sub> δ <sup>13</sup> C	CO <sub>2</sub> δ <sup>18</sup> O
6406/1-1	Gas	MDT2C	4680	12894	-27.3	-28.4	-27.3			-13.1	-13.6



Table 16. Visual Kerogen Description

Well	Sample type	Lower Depth	APT ID	FA(%)	HA(%)	AL(%)	HE(%)	WO(%)	CO(%)	SCI	Comment
6406/1-1	DC	1530	11888	0	75	5	10	0	10	2-3	
6406/1-1	DC	1730	11889	0	75	0	5	5	15	2-3	
6406/1-1	DC	1930	11890	0	85	0	5	0	10	8-9	reworked
6406/1-1	DC	2130	11891	0	65	5	10	0	20	8-9	reworked
6406/1-1	DC	2330	11892	0	80	0	15	0	5	8-10	reworked
6406/1-1	DC	2530	11893	0	80	0	15	0	5	8-10	reworked
6406/1-1	DC	2730	11894	5	60	5	10	0	20	8-10	reworked
6406/1-1	DC	2930	11895	5	65	5	10	0	15	8-10	reworked
6406/1-1	DC	3130	11896	0	75	5	10	0	10	8-10	reworked
6406/1-1	DC	3330	11897	5	70	0	15	0	10	7-9	reworked?
6406/1-1	DC	3519	11898	0	75	5	10	0	10	7-9	reworked?
6406/1-1	DC	3730	11899	0	90	0	10	0	0	7-9	reworked?
6406/1-1	DC	3930	11900	5	65	0	25	0	5	8-10	
6406/1-1	DC	4130	11901	5	60	25	10	0	0	8-10	
6406/1-1	DC	4330	11902	5	65	5	15	0	10	8-10	
6406/1-1	DC	4530	11903	0	45	5	10	0	40	8-10	
6406/1-1	DC	4653	11913	0	80	0	20	0	0	6-9	
6406/1-1	DC	4812	11919	0	75	0	5	0	20	8-10	
6406/1-1	DC	4878	11929	0	70	0	5	0	25	8-10	
6406/1-1	DC	4914	11931	0	75	5	15	0	5	8-10	
6406/1-1	DC	5010	11941	0	90	0	5	0	5	8-10	
6406/1-1	DC	5052	11949	0	95	0	5	0	0	8-10	

Table 17. Vitrinite Reflectance

Well	Sample type	Lower Depth	APT ID	Lithology	%Ro	Std. Dev.	No. of meats.	Quality rating	Overall quality
6406/1-1	DC	1530	11888	clyst/slst	0.23	0.04	19	ooo-oo	M
6406/1-1	DC	1730	11889	clyst/slst	0.19	0.02	9	-ooo-o	P/M
6406/1-1	DC	1930	11890	clyst/slst	0.18	0.01	2	-o---o	P
6406/1-1	DC	2130	11891	clyst/slst	0.18	0.02	2	-o---o	P
6406/1-1	DC	2330	11892	clyst/slst	barren				
6406/1-1	DC	2530	11893	clyst/slst	0.46	0.04	3	-o---o	P
6406/1-1	DC	2730	11894	clyst/slst	barren				
6406/1-1	DC	2930	11895	clyst/slst	0.42	0.05	7	-±---o	P
6406/1-1	DC	3130	11896	clyst/slst	0.52	0.10	7	-±o--o	P
6406/1-1	DC	3330	11897	clyst/slst	0.61	0.09	14	-oo--o	P/M
6406/1-1	DC	3519	11898	clyst/slst	0.68	0.09	7	-±o--o	P
6406/1-1	DC	3730	11899	clyst/slst	0.78	0.04	6	-oo--o	P
6406/1-1	DC	3930	11900	clyst/slst	0.83	0.09	4	-±o--o	P
6406/1-1	DC	4130	11901	clyst/slst	0.88	0.06	15	-oo--o	M
6406/1-1	DC	4330	11902	clyst/slst	0.90	0.07	7	-o---o	P
6406/1-1	DC	4530	11903	clyst/slst	1.05	0.09	14	-oo--o	M
6406/1-1	DC	4653	11913	clyst/slst	barren				
6406/1-1	COCH	4680.74	11956	sst	barren				
6406/1-1	COCH	4717.47	11965	sh	1.07	0.12	25	oooo+	M/G
6406/1-1	COCH	4756.3	11977	clyst/coal	1.02	0.03	21	oooooo	G
6406/1-1	DC	4812	11919	clyst/sst	1.11	0.08	2	-±---o	P
6406/1-1	DC	4878	11929	sst/clyst	barren				
6406/1-1	DC	4914	11931	clyst/sst	barren				
6406/1-1	DC	5010	11941	sst/clyst	barren				
6406/1-1	DC	5052	11949	clyst/sst	1.24	0.05	5	-±±--o	P

**The sample quality is characterised by six items as follows:**

1 abundance of vitrinite, 2 identification of vitrinite, 3 type of vitrinite, 4 particle size, 5 particle surface quality, 6 abundance of pyrite

Each item is characterised by one of the following codes

+ may give a too high vitrinite reflectance value

0 has no effect on the resulting vitrinite reflectance value

- may give a too low vitrinite reflectance value

An ideal sample is characterised as follows 000000

Legend to overall quality	
Good quality	G
Moderate quality	M
Poor quality	P
Not vitrinite	X
Mud additive	A



## Experimental Procedures

All procedures follow NIGOGA, 4<sup>th</sup> Edition. Below are brief descriptions of procedures/analytical conditions.

### Sample preparation

Cuttings samples are washed in water to remove mud. When oil based mud is used, soap (Zalo) is added to the sample and the sample is washed thoroughly in warm water to remove mud and soap.

### Extraction

A Soxtec Tecator instrument is used. Thimbles are pre extracted in dichloromethane with 7% (vol/vol) methanol, 10 min boiling and 20 min rinsing. The crushed sample is weighed accurately in the pre extracted thimbles and boiled for 1 hour and rinsed for 2 hours in approximately 80 cc of dichloromethane with 7% (vol/vol) methanol. Copper blades activated in concentrated hydrochloric acid are added to the extraction cups to cause free sulphur to react with the copper. An aliquot of 10% of the extract is transferred to a pre weighed bottle and evaporated to dryness. The amount of extractable organic matter is calculated from the weight of this 10% aliquot.

### Deasphalting

The extract is evaporated almost to dryness before a small amount of dichloromethane (3 times the amount of EOM) is added. Then pentane is added in excess (40 times the volume of EOM and dichloromethane). The solution is stored for at least 12 hours in a dark place before the solution is filtered or centrifuged and the weight of the asphaltenes measured.

### MPLC

The MPLC is constructed as described by Radke et al. (1980). The system includes two HPLC pumps, sample injector, sample collector, RI-detector, UV-detector and two packed columns. The pre column is filled with Kieselgel 100, which is heated at 600 °C for 2 hours to deactivate it. The main column is a LiChroprep Si60, which is heated at 120 °C for 2 hours to make it water free.

Approximately 30 mg of deasphalted oil or EOM diluted in 1 ml hexane is injected and separated into a saturated, an aromatic and a polar fraction.

### TOC and Rock-Eval

A Rock-Eval 6 instrument is used. The analysis is performed in two steps, pyrolysis and oxidation, when TOC is measured. Jet-Rock 1 was run as every tenth sample and checked against the acceptable range given in NIGOGA.

#### *Temperature programme*

Pyrolysis: 300 °C (3 min.) - 25 °C/min. - 650 °C (0 min.)

Oxidation: 400 °C (3 min.) - 25 °C/min. - 850 °C (5 min.)

### **Iatroscan**

An Iatroscan MK-5 (TLC/FID Analyser) instrument is used. 2 µl of extract or diluted oil is spotted on Chromarod S-III rods before elution in hexane (25 min), toluene (8 min) and dichloromethane with 7 % methanol (vol/vol). The solvent is allowed to evaporate before the rods are placed into the next elution chamber. Before running the rods in the analyser, the rods are heated for 90 sec. in a heating chamber at 60 °C.

### **GC of EOM/saturated fraction**

A HP5890 II instrument is used. The column is a CP-Sil-5 CB-MS, length 25 m, i.d. 0.25 mm, film thickness 0.25 µm. C12D26, C20D42, C24D50 and C30D62 are used as internal standards.

#### *Temperature programme*

50 °C (1 min.) - 4 °C/min. - 310 °C (25 min.)

### **GC of aromatic fraction**

A HP5890 instrument is used. The column is a CP-Sil-8 CB, length 50 m, i.d. 0.25 mm, film thickness 0.25 µm.

#### *Temperature programme*

50 °C (1 min.) - 4 °C/min. - 310 °C (25 min.)

### **PyGC**

A HP5890 II instrument with a MSSV injector and a FID is used. The column is a CP-Sil-5 CB-MS, length 25 m, i.d. 0.25 mm, film thickness 0.25 µm.

During the run the pyrolysis oven starts at 330 °C. The tube is then broken and the temperature increased to 600 °C at a rate of 25 °C/min. The pyrolysis products are collected in the cold trap for fourteen minutes.

#### *Temperature programme*

30 °C (15 min.) - 5 °C/min. - 310 °C (23 min.)

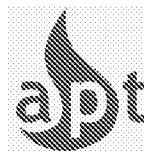
### **GCMS of saturated and aromatic fractions**

A Micromass ProSpec high resolution instrument is used. The instrument is tuned to a resolution of 3000 and data is acquired in Selected Ion Recording (SIR) mode. The column used is a 60 m CP-Sil-5 CB-MS with an i.d. of 0.25 mm and a film thickness 0.25 µm. d4-27ααR is used as internal standard when quantitative results are requested for the saturated compounds. The aromatic and aliphatic fractions may be analysed together or separately.

#### *Temperature programme*

50 °C (1 min.) - 20 °C/min. - 120 °C - 2 °C/min - 320 °C (20 min.)





### **Stable isotope analysis of gas compounds**

5-10 ml of the gas is sampled with a syringe and then separated into the different gas components by a Carlo Erba 4200 gas chromatograph. The hydrocarbon gas components are oxidised in separate CuO-ovens in order to prevent cross contamination. The combustion products CO<sub>2</sub> and H<sub>2</sub>O are frozen into collection vessels and separated.

The combustion water is reduced with zinc metal in sealed quartz tubes to prepare hydrogen for isotopic analysis. The isotopic measurements are performed on a Finnigan MAT 251 and a Finnigan Delta mass spectrometer.

The value for the NBS 22 standard is  $-29.77 \pm 0.06$  ‰ PDB. The analytical procedures are tested with a laboratory gas standard mixture. Based on repeated analysis of the gas standard, the reproducibility in the  $\delta^{13}\text{C}$  value is better than 0.5 ‰ PDB for all components. The reproducibility in the  $\delta\text{D}$  value is likewise better than 10 ‰.

### **Stable carbon isotope analysis of oil, EOM and kerogen**

The samples are dissolved in a known amount of dichloromethane, and 1-2 mg of the sample (or as much as possible) is then transferred to a glass container. The solvent is evaporated in an oven at 50 °C. CuO and some silver wires are added to the containers, which are then sealed by melting in a vacuum. The samples are then combusted in an oven at 550 °C for 1 hour (Sofer, 1980). The combustion products CO<sub>2</sub> and H<sub>2</sub>O are separated at -80°C before the isotopic ratio is determined on a Finnigan MAT 251 mass spectrometer.

A standard (NGS NSO-1, topped oil) is analysed for each 10<sup>th</sup> sample. The  $\delta^{13}\text{C}$  value obtained for this standard is  $-28.73$  ‰ PDB. The variation in the isotopic values for the standard by repeated analysis over a period of four years is  $\pm 0.16$  ‰.

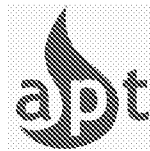
### **GC analysis of gas components**

Aliquots of 0.2 ml are sampled with a syringe for analysis on a Porabond Q column on a Carlo Erba HRGC 5300 equipped with a flame ionisation (FID) and a thermal conductivity (TCD) detector. The detection limit for the hydrocarbon gas components is 0.001 µl/ml, for CO<sub>2</sub> 0.05 µl/ml.

### **Vitrinite reflectance analysis**

The samples are prepared either as “whole rock” or are treated with hydrochloric and hydrofluoric acid prior to further preparation. The aim of the acid treatment is to avoid soft and expanding mineral phases in order to ensure good polishing quality. The whole rock or the kerogen resulting from the acid treatment is embedded in an epoxy resin to make briquettes, ground flat and polished using 0.25 micron diamond paste and magnesium oxide as the two final steps.

The analytical equipment used is a Zeiss MPM 03 photometer microscope equipped with an Epiplan-Neofluar 40/0.90 oil objective. The sensitive measuring spot is kept constant for all measurements at about 2.5 micron in diameter. The measurements are made through a green band pass filter (546 nm) and in oil immersion (refractive index 1.515 at 18 °C). The readings



are made without a polarizer and using a stationary stage. This procedure is called measurement of random reflectance (%Rm). The photometer is calibrated daily against a standard of known reflectance (%Rm = 0.588) and routinely (daily) checked against two other standards of significant different reflectances (%Rm = 0.879 and 1.696). A deviation from these values of less than  $\pm 0.01$  and  $\pm 0.02$  respectively is considered acceptable. The calibration is routinely checked during the course of measurements at least every hour, and a deviation of less than  $\pm 0.005$  is considered acceptable.

For each sample at least 20 points are measured if possible, and quality ratings are given to various important aspects, which may affect the measurements. These aspects are abundance of vitrinite, uncertainties in the identification of indigenous vitrinite, type of vitrinite, particle size, particle surface quality and abundance of pyrite.