



FMT/RFT PRESSURE FORM

MW (ppg/s.g.)	Visc	n	WL	WELL: 6607/5-1
14.8-14.9	41	9.7	6.5	DATE: 02.09.87
YP				Run no: 5d Hole size: 8 1/2"
				T.D: 3817m RKB

LOGGING COMPANY: Dresser Atlas

Pressures are psig/

WITNESSED BY: J.H. Hendrich

GAUGE: strain
H.P.

Seat no.	DEPTH		IHP (psi)	Time packer set	Min. Fl. Pr. (Approx psi)	FSIP (psi)	Time	EMW (ppg/s.g.)	FHP (psi/Time)	COMMENTS
	(mKB)	(mss)								
1	2975.2	2948.2	7672	16:05	5500	7366	16:17	14.6	7645/16:20	Initially plugged. Valid?
2	3086.0	3059.0	7954	16:42	7400	7539	16:45	14.4	7945/16:46	Valid Very good permeability
3	3168.1		8144	17:13 17:20	7400 6900		17:16 17:25		8124/17:26	Plugged/seal failure? Reset - seal failure.
4	3168.3		8118	17:27	3000		17:35		8111/17:37	Tight
5	3167.9		8106	17:38	7500		17:44		8101/17:45	Seal failure.
6	3169.0		8101	18:46	1000	(7980)	18:00		8083/18:02	Tight, supercharged.
7	3311.4		8502	18:48	4100		18:50		8500/18:51	Tight
8	3311.7		8495	18:53	3700		18:57		8488/18:58	Tight
9	3393.9		8716	19:12	100		19:14		8562/19:30	Very tight. (Stuck tool)
10	2975.0	2948.0	7600	20:25	6800	7337	20:26	14.6	7600/20:53	Attempted sample - seal failure on 1 gal.

Cement Materials

<u>Material</u>	<u>Quantity</u>	<u>Unit Cost(USD)</u>	<u>Total Cost(USD)</u>
Cement (Class G)	588	253.68/MT	149,180
D-77 (CaCl ₂)	1362	3.29/Gal	4,480
D-47 (Defoamer)	98	38.24/Gal	3,750
D-75	1041	5.51/Gal	5,736
D-81	504	15.66/Gal	7,900
D-801	12	37.00/Gal	450
30" Float Shoe	1		1,969
20" Centralizer	15	84.00/Ea	1,260
20" Subsea Dart & Plug	1		1,700
20" Float Collar	1		1,530
20" Float Shoe	1		1,590
13-3/8" Float Shoe	1		589
13-3/8" Float Collar	1		619
13-3/8" Centralizers	39	30.00/Ea	1,170
13-3/8" Stop Rings	10	10.00/Ea	100
13-3/8" SSR Plug			2,355
9-5/8" Float Shoe	1		600
9-5/8" Float Collar	1		600
9-5/8" Centralizer	12	42.00/Ea	504
9-5/8" SSR Plug			2,040
9-5/8" Stop Ring			100
Threadkote 706	8	50.00/Ea	400
Howco Weld	4	25.00/Ea	100
13-3/8" Cement Retainer	1		6,120
9-5/8" Cement Retainer	1		3,700

Mud Materials

<u>Material</u>		<u>Quantity</u>	<u>Unit Cost (USD)</u>	<u>Total Cost (USD)</u>
Barite	ton	2148	91.20	195,850
Bentonite	ton	46	235.30	10,820
Bicarbonate	50 kg	153	29.40	4,500
Causticized Lignite	25 kg	20	9.60	190
Defoamer	25 liter	81	41.20	3,340
KCl	50 kg	7440	15.90	118,160
KCl	25 kg	15685	7.90	124,560
KOH	50 kg	98	7.40	720
NaOH	25 kg	26	14.30	370
Starch	25 kg	1376	26.50	36,420
Drispac Reg	25 kg	290	46.30	13,430
Drispac SL	25 kg	400	46.30	18,520
Drispac SL	25 kg	41	92.60	3,800
Lignosulfonate	25 kg	52	7.40	380
Lignosulfonate	25 kg	129	14.70	1,900
XC-polymer	25 kg	340	291.20	99,000
			Total	631,960

MATERIAL CONSUMPTION

WELL 6607/5-1

	DEPTH	BARITE	BENTONITE	LIGNO SULFONATE	CAUSTIC	SODA ASH	KCL	XC POLYMER	PROPOL	SL/REG	M.O.B.	STARCH	KOH	O ₂ SCAVENGER	BEFORMER	BLOXIG	COST OF MUD	CEMENT	D75/081	DRL WATER	POT. WATER	RIG FUEL	D77/D47	HELICOPTER FUEL	REMARKS
UNIT	M	MT	MT	25 KG	25 KG	50 KG	50 KG	25 KG	25 KG	25 KG	25 KG	50 KG	25 LTA		USD	MT	GAL	BBL	BBL	BBL	BBL	GAL	LTR		
DATE																									
JUN 6																						113			
JUN 7																						-		842	
JUN 8		118	14	7	12	2											14,155		962	226	491				
JUN 9	600																-		7		31				
JUN 10	715	15															1,367		25	208	69				
JUN 11	715		17		2												4,028		1176	220	57		319		
JUN 12	715																-		50	308	57				
JUN 13	715		4														941		384	258	69				
JUN 14	715				2												28	43	384	258	101				
JUN 15	715		11		2												2,616		38	170	19	557/15			
JUN 16	715																-		13	164	50				
SUB-TOTAL		133	46	7	18	2											23,135		3039	1812	1057	557/15	1,161		
CUMULATIVE		133	46	7	18	2											23,135	43	3039	1812	1057	557/15	1,161		

MATERIAL CONSUMPTION

WELL 6607/5-1

UNIT	DEPTH	BARITE (BX)	BENTONITE	LIGNO-SULFONATE	CAUSTIC	SODA ASH	KCL	KC POLYMER	PROPOL	SL/REG	M.O.B.	STARCH	KOH	O ₂ SCUMBLER	DEFORMER	DIOCLIDE	COST OF MUD	CEMENT	D75/081	DRL. WATER	POT. WATER	RIG FUEL	D77/D47	HELICOPTER FUEL	REMARKS
	M	MT	MT	25 KG	25 KG	50 KG	50 KG	25 KG	25 KG	25 KG	50 KG	25 LTR	25 LTR	25 LTR	25 LTR	25 LTR	USD	MT	GAL	BAR	BAR	BAR	GAL	LTR	
JUN 17	915	19															1,732			484	208	113			
JUN 18	915	7															638			1258	220	82		421	
JUN 17	915						3223	40/40									27,300	127	681/51	2868	214	63			
JUN 20	915	1					1000	40/20	160								14,956			491	333	69		246	
JUN 21	918						889	15/20	20								8,747			132	239	50			
JUN 22	918						144	5/1	10								1,686	29		1572	164	120			
JUN 23	1100						706	16									11,584			750	333	25			
JUN 24	1493						3918	21	30/30	11				9/			40,277	32		1553	-	25			
JUN 25	1588	11					700	11	30/25	94	2						15,483	45		773	81	82		3	
JUN 26	1588	13					258		10/18	15							4,728			151	114	88			
JUN 27	1748						500	12	1/15	60	2						13,733			1321		101		10	
SUB-TOTAL		51					11538	61	170/169	370	4			9/			143,086	233	681/51	11773	1706	818		680	
CUMULATIVE		184	46	7	18	2	11538	61	170/169	370	4			9/			166,221	276	681/51	14,812	3718	1875	552/15	1841	

MATERIAL CONSUMPTION

WELL 6607/5-1

UNIT	DEPTH	BARITE (BX)	BENTONITE	LIGNO-SULFONATE	CAUSTIC	SODA ASH BICARB	KCL	Xc POLYMER	PROPOL SL/REG	MOD. STARCH	KOH	O ₂ SCAVENGER	DEFOMER	BIOCLIDE	COST OF MUD	CEMENT	D75/D81	DRIL. WATER	POT. WATER	RIG FUEL	D77/D47	HELICOPTER FUEL	REMARKS	
DATE	M	MT	MT	25 KG	25 KG	50 KG	25 KG	25 KG	25 KG	50 KG	25 LTR	25 LTR	25 LTR	25 LTR	USD	MT	GAL	BBL	BBL	BBL	GAL	LTR		
JUN 28	1817	12				517	20					2/		15,211			927		119					
29	1976					346	13	1/5	60	4				11,593			428		119		50			
30	2058	1				240	20			10				5,792			255		113					
JULY 1	2058	33												3,009			351		119		171			
2	2058	34								2				3,115			427		132		1			
3	2058					1/4								412	49		597		88		5			
4	2058													-			333		88		316			
5	2058													-			107		57		5			
6	2058													-			63		50		486			
7	2058													-			673		88					
8	2058			5								1/		78			459	182	176		304			
SUB-TOTAL		80	-	5	-	1/4	1103	53	7/5	60	16	-	3/-	39,210	49	681/51	5280	182	1149		1338			
CUMULATIVE		264	46	12	18	3/4	1264	114	170/181	430	20	-	12/-	205,431	325	681/51	2092	3900	3024	552/15	3179			

MATERIAL CONS APTION

WELL 6607/5-1

	DEPTH	BARITE (BX)	BENTONITE	LIGNO-SULFONATE	CAUSTIC	SODA ASH BICARB	KCL	KC POLYMER	PROPOL	SL/RES MOD.	STARCH	KOH	O ₂ SCAVENGER DEFORMER BIOCID	COST OF MUD	CEMENT	D75/281	DRL WATER	POT. WATER	RIG FUEL	D77/547	HELICOPTER FUEL	REMARKS
UNIT	M	MT	MT	25 KG	25 KG	50 KG	50 KG	25 KG	25 KG	25 KG	50 KG	25 LTR	25 LTR	USD	MT	GAL	BBL	BBL	BBL	GAL	LTR	
DATE																						
July 9	2058	96				1/18	414	1	3 1/2	23	64		1/	20,432			1465	176	95			
10	2058	46				1/8	470	8	2 1/4	19	58			17,751			2044	176	101			
11	2058	4				1/13	1015	39	1 1/10	10	48		1/	30,462			1226	164	119		341	
12	2058						960	12	1/15	15	60	4		20,100			508	175	88			
13	2058						346	9			20	8		8,720			220	163	76			
14	2058						660				20	2		18,888			836	214	88		305	
15	2100						15				25			1138			164	214	88		11	
16	2100						425	3						7623			729	182	82		317	
17	2100	5						10	2 1/6					4572			113	200	63		3	
18	2100					1/5								147	67	360/245	183	189	69	1/55		13 3/8"
July 19	2100					1/11								323			19	258	69		3	
SUB-TOTAL		151	-	-	-	1/55	4305	82	86/73	295	14	-	2/-	130156	67	360/245	7532	2111	938	1/55	980	
CUMULATIVE		415	46	12	18	2/69	16946	196	256/257	725	34	-	14/-	335587	392	1041/246	27624	6011	3962	552/70	4159	

MATERIAL CONS. IPTION

(17) (11)

40 1/4" WELL 6607/S-1

	DEPTH	BARITE (BX)	BENTONITE	LIGNO. SULFONATE	CAUSTIC	SODIA ASH	BICARB	KCL	XC POLYMER	PB POL	SL/REG	MOD STARCH	KOH	Q	SCAVENGER	DEPAMER	Biocide	COST OF MUD	CEMENT	D75/DBI	DRL. WATER	POT. WATER	RIG FUEL	D77/D47	HELICOPTER FUEL	REMARKS
UNIT	M	MT	MT	25 KG	25 KG	50 KG	50 KG	25 KG	25 KG	25 KG	50 KG	25 LTR	25 LTR	25 LTR	25 LTR	25 LTR	25 LTR	USD	MT	GAL	BBL	BBL	BBL	GAL	LTR	
DATE																										
July 20	2296	134				/20	350		23/	20								20547			227	163	82			
July 21	2500	18							19/	40								3163			440	214	94			
July 22	2597	4					150	2			4							3358			346		63		854	
July 23	2702	67							9/	36	8							7524			139		126		189	
July 24	2702	29																-0-			119		94		2	
July 25	2702	51																7294	19	1/5	893		101	1/3	365	
July 26	2702	7					500	4	5/	20								9866			296		63		2	
July 27	2702	39		10		1/10												367	20	1/20	440		31	1/5	2	
July 28	2702	31		35		1/20			4/	20								17048			987		164			kick off cement plug e = 2137
July 29	2702	46					400	10	10/	40								15527			1050		138			
July 30	2702	149						6										9675			409		94		4	
SUB-TOTAL		575	-	45	-	1/50	1400	22	61/-	176	12	-	-	-	-	-	-	94364	39	1/35	5346	377	1050	1/8	1418	
CUMULATIVE		726	46	57	18	2/19	18346	218	317/251	901	46	-	14/-	-	-	-	-	429956	431	1041/31	32970	6388	5012	552/14	5577	

MATERIAL CON. OPTION

WELL 6607/5-1

	DEPTH	BARITE	BENTONITE	LIGNO SULFONATE	CAUSTIC	SOOR ASH	BICARB	KCL	XC Polymer	Propol 54 / Reg	Mod. Starch	KOH	O ₂ Scumex per Dr. Warner	Biolob	COST OF MUD	CEMENT	075 / 081	DRL. WATER	POT. WATER	RIG FUEL	5.77 / D-47	HELICOPTER FUEL	REMARKS
UNIT	m	MT	MT	25 KG	25 KG	50 KG	50 KG	25 KG	25 KG	25 KG	50 KG	25 liter	25 liter	USD	MT	gal	BDL	BDL	BDL	Gal	LTR		
DATE																							
July 31	2702	61					1000	26	20/-	105					32058			437		107		4	
Aug 1	2702	72						15							11002			597		101		4	
Aug 2	2702	37					150	13	19/-	40					9122			490		88		4	
Aug 3	2702	44						2							6976			906		75		4	
Aug 4	2702	26					500	10	20/-	80					16267			604		88		4	
Aug 5	2726						150		5/-	20	2				3158			503	194	38		4	
Aug 6	2755	6				7/8		2		15	4				1791			472	170	207			
Aug 7	2775	59							5/-	20	4				6169			453	201	107		4	
Aug 8	2812	8					150				4				3141			478	132	113			
Aug 9	2872	14									30	4			2100			428	196	95		484	
Aug 10	2897	9													820			264	195	88		4	
SUB-TOTAL		336	-	-	-	7/8	1950	68	60/-	310	18	-	-	-	92604	-	-	6132	1088	1107	-	516	
CUMULATIVE		1062	46	57	18	2/127	20216	286	377/357	1211	64	-	14/-	-	522560	431	1041/331	39102	7476	6119	552/74	6013	

MATERIAL CONSUMPTION

WELL 6607/5-1

PAGE 7 OF 9

	DEPTH	BARITE	BENTONITE	LIGNO SULFONATE	CAUSTIC	SODA ASH BICARB	KCL	XC POLYMER	Propyl SL / REG	MODIFIED STARCH	KOH	O ₂ SCAVENGER	DEFORMER	BLUENGE	COST OF MUD	CEMENT	D75 / DBI	DRL. WATER	POT. WATER	RIG FUEL	D77 / 1.77	HELICOPTER FUEL	REMARKS
UNIT	m	MT	MT	25 KG	25 KG	50 KG	50 KG	25 KG	25 KG	25 KG	50 KG	25 LTR	25 LTR	25 LTR	USD	MT	GAL	BBL	BBL	BBL	GAL	LTR	
DATE																							
AUG 11	2897														-0-			252	220	94		4	
AUG 12	2897	26				/12		4/4	7						3279		660	88	93		68		
13	2897							6/6	33						1429	40	/85	591	138	75	/12		
14	2897					/9	50						3/		1182		75	170	157		6		
15	2897	16				/26			10						2488		13	163	50				
16	2975	24					7	9/2							4782		465	208	63				
17	2983	37						/3							3512		535	145	82		7		
18	3133	16						/19							2338		522	201	100				
19	3248	22					2	/7	2						2927		534	176	113				
20	3293	11													1002		434	113	88				
AUG 21	3395	74					5	10/	68	2		1/			10522		1427	233	145				
SUB-TOTAL		226	-	-	-	7/47	50	14	19/42	108	4	-	4/-		33461	40	7/85	5508	1855	1060	7/12	85	
CUMULATIVE		1288	46	57	18	2/174	20346	300	396/299	1319	68		18/-		556021	461	1041/416	44610	9331	7179	552/90	6178	

MATERIAL CONSUMPTION

WELL 6607/5-1

UNIT	DEPTH	BARITE		BENTONITE	LIGNO-SULFONATE		CAUSTIC	SODA ASH		KCL	XC POLYMER	PROP. SL / REG	MODIFIED STARCH	KOH	O ₂ SLAVENGER	DEFAMER	BINDER	COST OF MUD	CEMENT	D75 / D81	DRL. WATER	POT. WATER	RIG FUEL	D77 / D47	HELICOPTER FUEL	REMARKS
	m	MT	MT	25 KG	25 KG	50 KG	50 KG	25 KG	25 KG	25 KG	50 KG	25 LTR	25 KG	25 LTR	25 KG	25 LTR	USD	MT	GAL	BBL	BBL	BBL	GAL	LTR		
AUG 22	3406	31												1				2883			515	94	50			
23	3423	57												1				5204			698	170	57			
24	3470	21												1				1922			755	189	101			
25	3541	151			7			5	18/					1				16165			931	214	113			
26	3631	50												2				4574			956	232	101			
27	3693	92							15/					2				10686			-	258	75			
28	3774	69		42										10	1/			6715			818	170	82			
29	3816	22		86					2/	7	8							2666			1220	176	145		2	
30	3817	33		38														3374			667	226	44			
31	3817	-																-			578	163	69			
SEPT 1	3817	3																274			805	195	44			
SUB-TOTAL		526	-	166	7	-	-	5	34/-	7	26			1/				54463	-	-	7943	2087	881	-	2	
CUMULATIVE		1814	46	223	25	2/174	20346	305	430/299	1316	94			-	19/-			610484	461	1041/416	52553	11418	8060	552/90	6180	

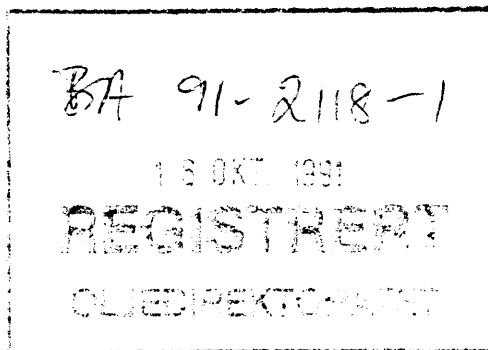
MATERIAL CONSUMPTION

WELL 6607/5-1

	DEPTH	BARITE	BENTONITE	LIGNO SULFONATE	CAUSTIC	SODA ASH BISULF	KCL	XC POLYMER	Propyl SL / REG	MODIFIED STARCH	KOH	O ₂ SCAVENGER DEFRAMER	BIRUDE	COST OF MUD	CEMENT	D75 / DBI	DRL WATER	POT. WATER	RIG FUEL	D77 / D47	HELICOPTER FUEL	REMARKS
UNIT	m	MT	MT	25 KG	25 KG	50 KG	50 KG	25 KG	25 KG	50 KG	25 LTR	25 LTR	USD	MT	GAL	BBL	BBL	BBL	GAL	LTR		
DATE																						
SEPT 2	3817	16											1635			837	221	44		174		CAUSTIC LIQUID CONSUMED.
3	PBD 3600							/1					46	12		233	214	50				
4	2806	12											1094	29		793	195	94		3		
5	2787 PBD	20											1824		81	1320	144	208				12 GAL D801
6	2787 PBD	3											288			598	214	94		3		
7	1942 PBD	20											1823	11	4	786	207	88				
8	1617 PBD												-			704	245	81				
9	445 PBD												-	75		698	264	372	810/8			
10	445 PBD												-			113	81	182				
11	445 PBD												-				41					KK @ 2030 hrs
SUB-TOTAL		71						/1					6710	127	-/88	6082	1826	1213	810/8	180		
CUMULATIVE		1885	46	223	25	2/114	20346	305	430/300	1316	94	-	19/-	617,194	588	1041/509	58635	13244	9273	1362/74	6360	20 SK LIQUID 12 GAL D801

Prepared for

HYDRO



**SHOWS LOWER CRETACEOUS,
WELL 6607/5 - 1 (ESSO)**

GEOCHEM

MAY 1990

REPORT NO. 3237

TABLE 1
ORGANIC CARBON RESULTS AND GROSS LITHOLOGIC DESCRIPTIONS

JOB 3237				
GEOCHEM SAMPLE NUMBER	DEPTH/ IDENTITY	GROSS LITHOLOGIC DESCRIPTION	G S A COLOUR CODE	TOTAL ORGANIC CARBON (Wt. %)

WELL: 6607/5-1

3237-001	3405.30m	A100% SILTSTONE - platy, mod hard, sl calc, lamellar bedding, medium grey	N5	
3237-002	3407.45m	A100% SILTSTONE - as 3237-001A, medium grey.	N5	
3237-003	3409.60m	A100% SILTSTONE - as 3237-001A, medium grey.	N5	
3237-004	3411.75m	A100% SILTSTONE - platy, mod hard, lamellar bedding, olive grey to light greenish grey.	5Y4/1 - 5GY8/1	
3237-005	3412.90m	A100% SILTSTONE - as 3237-004A, olive grey to light greenish grey.	5Y4/1 - 5GY8/1	
3237-006	3414.65m	A100% SILTSTONE - as 3237-004A, olive grey to light greenish grey.	5Y4/1 - 5GY8/1	
3237-007	3417.50m	A100% SILTSTONE - as 3237-004A, olive grey to light greenish grey.	5Y4/1 - 5GY8/1	
3237-008	3419.15m	A100% SILTSTONE - platy, mod hard, lamellar bedding, olive grey to light greenish grey.	5Y4/1 - 5GY8/1	
3237-009	3420.15m	A100% SILTSTONE - as 3237-008A, olive grey to light greenish grey.	5Y4/1 - 5GY8/1	
3237-010	3421.45m	A100% SILTSTONE - as 3237-008A, olive grey to light greenish grey.	5Y4/1 - 5GY8/1	
3237-011	3534-3537m	A 80% SANDY SILTSTONE - blocky, mod soft, mod calc, pale yellowish brown. B 15% CLAYSTONE - platy, mod hard, dark grey to medium dark grey. C 5% Sand.	10YR6/2 N3 N4	-
3237-012	3537-3540m	A 85% SANDY SILTSTONE - as 3237-011A, pale yellowish brown. B 8% CLAYSTONE - as 3237-011B, dark grey to medium dark grey. C 7% Sand.	10YR6/2 N3 N4	-
3237-013	3540-3543m	A 90% SANDY SILTSTONE - as 3237-011A, pale yellowish brown. B 10% CLAYSTONE - as 3237-011B, dark grey to medium dark grey.	10YR6/2 N3 N4	-
3237-014	3543-3546m	A 80% SANDY SILTSTONE - as 3237-011A, pale yellowish brown.	10YR6/2	

Abbreviations = arenaceous, argillaceous, calcareous, Cut, dolomite, Fluorescence, foraminifera fossiliferous, Lost Circulation Material, moderately, occasionally, slightly, very

TABLE 1
ORGANIC CARBON RESULTS AND GROSS LITHOLOGIC DESCRIPTIONS

JOB 3237				
GEOCHEM SAMPLE NUMBER	DEPTH/IDENTITY	GROSS LITHOLOGIC DESCRIPTION	G S A COLOUR CODE	TOTAL ORGANIC CARBON (Wt. %)
		B 20% CLAYSTONE - as 3237-011B, dark grey to medium dark grey.	N3 N4	-
3237-015	3546-3549m	A 95% SAND - fine grained, subangular, no F, no C, moderate yellowish brown. B 5% Siltstone.	10YR5/4	
3237-016	3549-3552m	A 95% SILTSTONE - platy, mod hard, mod calc, light olive grey. B 5% Sand.	5Y6/1	
3237-017	3552-3555m	A 80% SAND - as 3237-015A, moderate yellowish brown. B 20% SILTSTONE - as 3237-016A, light olive grey.	10YR5/4 5Y6/1	
3237-018	3555-3558m	A 98% SAND - as 3237-015A, moderate yellowish brown. B 2% Siltstone.	10YR5/4	
3237-019	3558-3561m	A 90% SANDY SILTSTONE - blocky, mod soft, mod calc, light olive grey. B 5% Sand. C 5% Claystone.	5Y6/1	
3237-020	3561-3564m	A 90% SANDY SILTSTONE - blocky, mod soft, mod calc, pale yellowish brown. B 5% Sand. C 5% Claystone.	10YR6/2	
3237-021	3564-3567m	A 95% SANDY SILTSTONE - as 3237-020A, pale yellowish brown. B 5% Sand, claystone.	10YR6/2	
3237-022	3567-3570m	A 95% SANDY SILTSTONE - as 3237-020A, pale yellowish brown. B 1% Sand, claystone.	10YR6/2	

Abbreviations = arenaceous, argillaceous, calcareous, Cut, dolomite, Fluorescence, foraminifera fossiliferous, Lost Circulation Material, moderately, occasionally, slightly, very

TABLE 2A
THERMAL BITUMEN COMPOSITION (NORM. %) AND ABUNDANCE

TOB 3237						
GEOCHEM SAMPLE NUMBER	DEPTH/ IDENTITY	% CX-C5	% C6-C14	% C15+	% nC17	ABUNDANCE (ppm)

WELL: 6607/5-1

3237-001	3405.30m	15.69	76.22	8.09	0.51	216
3237-002	3407.45m	10.08	65.09	24.83	4.12	342
3237-003	3409.60m	8.68	86.53	4.79	0.48	355
3237-004	3411.75m	13.64	80.89	5.47	0.51	308
3237-005	3412.90m	38.74	56.54	4.72	0.26	154
3237-006	3414.65m	16.73	77.18	6.09	0.60	452
3237-007	3417.50m	24.87	59.64	15.49	2.43	214
3237-008	3419.15m	14.28	72.39	13.33	1.96	498
3237-009	3420.15m	18.05	73.42	8.53	1.08	433
3237-010	3421.45m	35.15	55.58	9.28	0.48	244
3237-011	3534-3537m	17.63	70.42	11.94	1.01	487
3237-012	3537-3540m	29.67	59.74	10.59	0.78	587
3237-013	3540-3543m	24.05	60.12	15.84	1.53	366
3237-014	3543-3546m	7.85	74.73	17.42	1.35	213
3237-015	3546-3549m	30.34	63.24	6.42	0.46	652
3237-016	3549-3552m	5.52	86.27	8.21	0.77	455
3237-017	3552-3555m	34.04	51.92	14.03	1.21	332
3237-018	3555-3558m	18.39	71.70	9.90	0.96	308
3237-019	3558-3561m	11.05	79.54	9.41	1.34	378
3237-020	3561-3564m	37.65	53.42	8.92	1.07	512
3237-021	3564-3567m	36.44	53.29	10.27	0.70	332
3237-022	3567-3570m	40.50	56.00	3.50	0.39	319

TABLE 2B
THERMAL BITUMEN COMPOSITION (NORM. %) AND ABUNDANCE

JOB 3237						
GEOCHEM SAMPLE NUMBER	DEPTH/ IDENTITY	% CX-C6	% C7-C14	% C15+	% nC17	ABUNDANCE (ppm)

WELL: 6607/5-1

3237-001	3405.30m	25.04	66.87	8.09	0.51	216
3237-002	3407.45m	17.61	57.56	24.83	4.12	342
3237-003	3409.60m	14.68	80.53	4.79	0.48	355
3237-004	3411.75m	20.41	74.12	5.47	0.51	308
3237-005	3412.90m	44.67	50.61	4.72	0.26	154
3237-006	3414.65m	21.00	72.91	6.09	0.60	452
3237-007	3417.50m	32.43	52.08	15.49	2.43	214
3237-008	3419.15m	21.51	65.16	13.33	1.96	498
3237-009	3420.15m	24.49	66.97	8.53	1.08	433
3237-010	3421.45m	40.65	50.07	9.28	0.48	244
3237-011	3534-3537m	30.83	57.23	11.94	1.01	487
3237-012	3537-3540m	35.89	53.52	10.59	0.78	587
3237-013	3540-3543m	26.40	57.76	15.84	1.53	366
3237-014	3543-3546m	10.92	71.66	17.42	1.35	213
3237-015	3546-3549m	42.64	50.93	6.42	0.46	652
3237-016	3549-3552m	11.34	80.45	8.21	0.77	455
3237-017	3552-3555m	45.42	40.55	14.03	1.21	332
3237-018	3555-3558m	23.12	66.97	9.90	0.96	308
3237-019	3558-3561m	15.86	74.73	9.41	1.34	378
3237-020	3561-3564m	40.54	50.53	8.92	1.07	512
3237-021	3564-3567m	43.50	46.22	10.27	0.70	332
3237-022	3567-3570m	48.88	47.62	3.50	0.39	319

TABLE 3
CONCENTRATION (PPM) OF EXTRACTED C₁₅₊ MATERIAL IN ROCK

JOB 3237	L I T H O	DEPTH/ IDENTITY	TOTAL EXTRACT	HYDROCARBONS			NON HYDROCARBONS			
				Saturates	Aromatics	TOTAL	Preciptd. Asphaltenes	Eluted NSO's	Non-Eluted NSO's	TOTAL

WELL: 6607/5-1

3237-001A	3405.30m	48	15	3	18	25	4	1	30
3237-002A	3407.45m	201	100	13	113	76	11	1	88
3237-003A	3409.60m	178	70	15	85	70	20	3	93
3237-004A	3411.75m	201	72	18	90	76	33	1	111
3237-005A	3412.90m	152	67	10	77	59	14	1	75
3237-006A	3414.65m	405	252	14	266	58	78	3	139
3237-007A	3417.50m	178	92	6	98	66	13	1	80
3237-008A	3419.15m	200	111	7	118	64	17	1	82
3237-009A	3420.15m	469	324	22	346	50	70	3	123
3237-010A	3421.45m	316	126	7	133	139	43	2	183
3237-011A	3534-3537m	797	483	38	521	175	97	3	276
3237-012A	3537-3540m	670	493	36	530	62	77	1	141
3237-013A	3540-3543m	403	250	20	270	72	60	1	133
3237-014A	3543-3546m	299	144	17	161	51	87	1	140
3237-015A	3546-3549m	755	485	35	520	157	75	3	235
3237-016A	3549-3552m	587	358	37	395	49	140	3	192
3237-017A/B	3552-3555m	315	146	15	161	72	80	2	154
3237-018A	3555-3558m	250	117	12	128	73	48	1	122
3237-019A	3558-3561m	692	342	35	377	174	139	2	315
3237-020A	3561-3564m	460	237	16	253	120	85	1	207
3237-021A	3564-3567m	335	178	13	191	77	65	2	144
3237-022A	3567-3570m	595	256	25	282	109	201	3	313

TABLE 4
COMPOSITION (NORMALISED %) OF C₁₅₊ MATERIAL

JOB 3237 GEOCHEM SAMPLE NUMBER	L I T H O	DEPTH/ IDENTITY	HYDROCARBONS		NON HYDROCARBONS		
			Saturates	Aromatics	Preciptd. Asphaltenes	Eluted NSO's	Non-Eluted NSO's

WELL: 6607/5-1

3237-001A	3405.30m	31.52	5.43	52.17	8.70	2.17
3237-002A	3407.45m	49.72	6.53	37.78	5.40	0.57
3237-003A	3409.60m	39.30	8.42	39.30	11.23	1.75
3237-004A	3411.75m	35.95	8.82	37.91	16.67	0.65
3237-005A	3412.90m	44.16	6.62	38.80	9.46	0.95
3237-006A	3414.65m	62.22	3.49	14.29	19.21	0.79
3237-007A	3417.50m	51.93	3.26	37.09	7.12	0.59
3237-008A	3419.15m	55.41	3.50	32.17	8.28	0.64
3237-009A	3420.15m	69.20	4.61	10.72	14.93	0.54
3237-010A	3421.45m	39.82	2.21	43.81	13.50	0.66
3237-011A	3534-3537m	60.61	4.79	22.02	12.22	0.36
3237-012A	3537-3540m	73.57	5.43	9.27	11.51	0.22
3237-013A	3540-3543m	61.97	5.01	17.81	14.84	0.37
3237-014A	3543-3546m	48.38	5.66	17.15	29.29	0.49
3237-015A	3546-3549m	64.28	4.63	20.79	9.93	0.37
3237-016A	3549-3552m	61.04	6.29	8.39	23.84	0.44
3237-017A/B	3552-3555m	46.48	4.63	22.96	25.37	0.56
3237-018A	3555-3558m	46.59	4.68	29.04	19.30	0.39
3237-019A	3558-3561m	49.34	5.11	25.17	20.12	0.27
3237-020A	3561-3564m	51.57	3.46	26.10	18.55	0.31
3237-021A	3564-3567m	53.09	4.01	22.84	19.44	0.62
3237-022A	3567-3570m	43.09	4.24	18.39	33.84	0.44

TABLE 5
SIGNIFICANT C₁₅₊ RATIOS

JOB 3237 GEOCHEM SAMPLE NUMBER	L I T H O	DEPTH/ IDENTITY	TOC (%)	mg/g TOC						HYDROCARBONS % TOTAL EXTRACT	SATURATES AROMATICS
				TOTAL EXTRACT	SATURATES	AROMATICS	TOTAL HYDROCARBONS	ELUTED NSO's	ASPHALTENES		
3237-001A		3405.30m	0.68	7.10	2.24	0.39	2.62	0.62	3.71	36.96	5.80
3237-002A		3407.45m	0.73	27.54	13.69	1.80	15.49	1.49	10.41	56.25	7.61
3237-003A		3409.60m	0.82	21.65	8.51	1.82	10.33	2.43	8.51	47.72	4.67
3237-004A		3411.75m	0.53	37.91	13.63	3.34	16.97	6.32	14.37	44.77	4.07
3237-005A		3412.90m	0.55	27.62	12.20	1.83	14.03	2.61	10.72	50.79	6.67
3237-006A		3414.65m	0.62	65.26	40.61	2.28	42.89	12.53	9.32	65.71	17.82
3237-007A		3417.50m	0.61	29.14	15.13	0.95	16.08	2.08	10.81	55.19	15.91
3237-008A		3419.15m	0.66	30.25	16.76	1.06	17.82	2.50	9.73	58.92	15.82
3237-009A		3420.15m	0.65	72.08	49.88	3.33	53.21	10.76	7.73	73.81	15.00
3237-010A		3421.45m	0.60	52.72	20.99	1.17	22.16	7.11	23.09	42.04	18.00
3237-011A		3534-3537m	0.66	120.78	73.21	5.78	79.00	14.76	26.59	65.40	12.66
3237-012A		3537-3540m	0.45	148.98	109.60	8.09	117.69	17.15	13.81	79.00	13.55
3237-013A		3540-3543m	0.51	79.11	49.02	3.96	52.98	11.74	14.09	66.98	12.37
3237-014A		3543-3546m	0.41	72.82	35.23	4.12	39.35	21.33	12.49	54.05	8.54
3237-015A		3546-3549m	0.35	215.72	138.67	9.98	148.65	21.43	44.85	68.91	13.89
3237-016A		3549-3552m	0.86	68.23	41.65	4.29	45.94	16.27	5.72	67.33	9.70
3237-017A/B		3552-3555m	0.37	85.05	39.53	3.94	43.47	21.58	19.53	51.11	10.04
3237-018A		3555-3558m	0.26	96.29	44.86	4.51	49.37	18.58	27.97	51.27	9.96
3237-019A		3558-3561m	0.64	108.19	53.38	5.53	58.91	21.77	27.23	54.45	9.65
3237-020A		3561-3564m	0.50	92.00	47.44	3.18	50.63	17.07	24.01	55.03	14.91
3237-021A		3564-3567m	0.36	93.07	49.41	3.73	53.14	18.10	21.26	57.10	13.23
3237-022A		3567-3570m	0.63	94.42	40.68	4.01	44.69	31.95	17.36	47.33	10.15

WELL: 6607/5-1

TABLE 6
C₁₅₊ CHROMATOGRAPHY WEIGHTS (gms)

JOB 3237	L I T H O	DEPTH/ IDENTITY	ROCK EXTRACTED	TOTAL EXTRACT	PRECIPTD. ASPHALTENES	NC5	SATURATES	AROMATICS	ELUTED NSO's	NON-ELUTED NSO's
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WELL: 6607/5-1

3237-001A		3405.30m	19.0500	0.00092	0.00048	0.00044	0.00029	0.00005	0.00008	0.00002
3237-002A		3407.45m	17.5100	0.00352	0.00133	0.00219	0.00175	0.00023	0.00019	0.00002
3237-003A		3409.60m	16.0500	0.00285	0.00112	0.00173	0.00112	0.00024	0.00032	0.00005
3237-004A		3411.75m	15.2300	0.00306	0.00116	0.00190	0.00110	0.00027	0.00051	0.00002
3237-005A		3412.90m	20.8700	0.00317	0.00123	0.00194	0.00140	0.00021	0.00030	0.00003
3237-006A		3414.65m	15.5700	0.00630	0.00090	0.00540	0.00392	0.00022	0.00121	0.00005
3237-007A		3417.50m	18.9600	0.00337	0.00125	0.00212	0.00175	0.00011	0.00024	0.00002
3237-008A		3419.15m	15.7300	0.00314	0.00101	0.00213	0.00174	0.00011	0.00026	0.00002
3237-009A		3420.15m	15.7300	0.00737	0.00079	0.00658	0.00510	0.00034	0.00110	0.00004
3237-010A		3421.45m	14.2900	0.00452	0.00198	0.00254	0.00180	0.00010	0.00061	0.00003
3237-011A		3534-3537m	17.5500	0.01399	0.00308	0.01091	0.00848	0.00067	0.00171	0.00005
3237-012A		3537-3540m	20.6000	0.01381	0.00128	0.01253	0.01016	0.00075	0.00159	0.00003
3237-013A		3540-3543m	13.3600	0.00539	0.00096	0.00443	0.00334	0.00027	0.00080	0.00002
3237-014A		3543-3546m	20.7000	0.00618	0.00106	0.00518	0.00299	0.00035	0.00181	0.00003
3237-015A		3546-3549m	21.4700	0.01621	0.00337	0.01284	0.01042	0.00075	0.00161	0.00006
3237-016A		3549-3552m	15.4400	0.00906	0.00076	0.00830	0.00553	0.00057	0.00216	0.00004
3237-017A/B		3552-3555m	17.1600	0.00540	0.00124	0.00416	0.00251	0.00025	0.00137	0.00003
3237-018A		3555-3558m	20.4900	0.00513	0.00149	0.00364	0.00239	0.00024	0.00099	0.00002
3237-019A		3558-3561m	21.7500	0.01506	0.00379	0.01127	0.00743	0.00077	0.00303	0.00004
3237-020A		3561-3564m	20.7400	0.00954	0.00249	0.00705	0.00492	0.00033	0.00177	0.00003
3237-021A		3564-3567m	19.3400	0.00648	0.00148	0.00500	0.00344	0.00026	0.00126	0.00004
3237-022A		3567-3570m	15.4500	0.00919	0.00169	0.00750	0.00396	0.00039	0.00311	0.00004

TABLE 7
COMPOSITION (NORMALISED %) OF C₁₅₊ SATURATE (PARAFFIN - NAPHTHENE) HYDROCARBONS

GEOCHEM SAMPLE NUMBER	001A	002A	003A	004A	005A	006A
DEPTH	3405.3m	3407.45m	3409.6m	3411.75m	3412.9m	3414.65m
SAMPLE TYPE						
nC15	0.60	9.12	16.97	22.36	16.43	6.67
nC16	0.52	7.49	18.99	15.21	24.58	7.18
nC17	0.63	6.47	14.10	12.63	16.78	6.65
nC18	0.96	6.01	8.37	10.01	8.98	6.29
nC19	1.09	5.74	4.22	7.22	4.34	7.40
nC20	1.58	6.22	2.61	6.09	3.06	7.79
nC21	2.41	5.41	2.17	4.88	2.88	8.00
nC22	3.64	5.62	1.98	3.71	2.25	7.85
nC23	5.05	6.08	2.39	3.03	2.01	7.76
nC24	7.70	6.37	3.12	2.42	2.03	6.64
nC25	9.46	6.90	3.95	2.10	1.97	6.29
nC26	10.53	6.41	4.26	2.06	1.97	4.70
nC27	10.39	5.69	3.95	1.86	2.37	4.44
nC28	8.86	4.82	3.97	1.45	2.27	3.49
nC29	8.51	4.32	3.43	1.57	1.99	2.88
nC30	7.71	2.81	2.17	0.93	1.40	1.73
nC31	6.36	1.87	1.54	1.05	1.68	1.70
nC32	5.65	1.25	0.81	0.48	0.81	0.76
nC33	3.88	0.70	0.59	0.52	0.97	0.92
nC34	2.78	0.46	0.31	0.24	0.71	0.52
nC35	1.70	0.23	0.09	0.16	0.49	0.34
Paraffin	18.77	32.55	47.52	23.68	10.35	26.48
Isoprenoid	0.16	2.40	8.86	3.46	3.26	2.43
Naphthene	81.07	65.05	43.62	72.86	86.39	71.09
CPI 1 Index	1.03	1.01	0.99	1.03	1.04	1.07
CPI 2 Index	1.03	1.07	1.05	1.15	1.14	1.18
CPI 3 Index	1.07	1.01	0.96	1.06	1.12	1.08
Prist/Phytane	0.69	3.04	3.28	3.03	2.54	2.64
Prist/nC17	0.31	0.32	0.30	0.30	0.49	0.57
Phytane/nC18	0.30	0.11	0.15	0.13	0.36	0.23

Job Number : 3237

$$C.P.I. 1 = \frac{1}{2} \left[\frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{20} + C_{22} + C_{24} + C_{26}} + \frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{22} + C_{24} + C_{26} + C_{28}} \right]$$

$$C.P.I. 2 = \frac{1}{2} \left[\frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{24} + C_{26} + C_{28} + C_{30}} + \frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{26} + C_{28} + C_{30} + C_{32}} \right]$$

$$C.P.I. 3 = \frac{2 \times (C_{27})}{C_{26} + C_{28}}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE 7
COMPOSITION (NORMALISED %) OF C₁₅₊ SATURATE (PARAFFIN - NAPHTHENE) HYDROCARBONS

GEOCHEM SAMPLE NUMBER	007A	008A	009A	010A	011A	012A
DEPTH	3417.5m	3419.15m	3420.15m	3421.45m	3534-3537m	3537-3540m
SAMPLE TYPE						
nC15	5.55	7.35	7.13	12.51	9.81	9.80
nC16	7.23	7.24	8.23	13.52	10.61	6.50
nC17	8.08	5.42	7.81	9.47	10.04	7.03
nC18	9.02	5.03	8.40	6.47	7.75	5.82
nC19	8.89	6.18	8.40	6.11	8.31	6.73
nC20	9.82	5.72	9.62	5.87	6.79	7.12
nC21	9.05	5.97	8.69	5.56	6.37	6.94
nC22	8.32	5.84	7.74	5.53	5.61	6.25
nC23	7.59	5.62	7.37	4.78	5.85	6.41
nC24	6.71	5.70	5.39	4.86	4.11	5.23
nC25	5.33	6.07	5.07	4.91	4.25	4.75
nC26	4.00	5.74	4.02	4.03	3.02	3.48
nC27	3.01	5.81	2.94	3.99	3.47	4.43
nC28	2.04	5.18	2.20	3.40	3.17	3.71
nC29	1.87	4.69	1.79	2.52	2.69	3.43
nC30	1.10	3.61	1.08	1.96	1.77	2.27
nC31	1.04	2.93	0.88	1.73	1.77	2.75
nC32	0.40	2.12	2.23	1.05	1.13	1.73
nC33	0.54	1.77	0.54	0.89	1.41	2.16
nC34	0.26	1.26	0.37	0.55	1.27	2.25
nC35	0.16	0.77	0.12	0.33	0.80	1.21
Paraffin	32.78	25.61	29.43	26.80	6.53	3.51
Isoprenoid	3.12	2.71	3.09	4.48	1.09	0.41
Naphthene	64.10	71.68	67.48	68.72	92.38	96.08
CPI 1 Index	1.03	1.03	1.07	1.01	1.14	1.11
CPI 2 Index	1.15	1.07	0.98	1.09	1.17	1.21
CPI 3 Index	1.00	1.06	0.95	1.07	1.12	1.23
Prist/Phytane	2.86	3.05	2.48	3.92	2.15	1.84
Prist/nC17	0.59	0.49	0.36	0.45	0.53	0.55
Phytane/nC18	0.19	0.17	0.13	0.17	0.32	0.36

Job Number : 3237

$$C.P.I. 1 = \frac{1}{2} \left[\frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{20} + C_{22} + C_{24} + C_{26}} + \frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{22} + C_{24} + C_{26} + C_{28}} \right]$$

$$C.P.I. 2 = \frac{1}{2} \left[\frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{24} + C_{26} + C_{28} + C_{30}} + \frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{26} + C_{28} + C_{30} + C_{32}} \right]$$

$$C.P.I. 3 = \frac{2 \times (C_{27})}{C_{26} + C_{28}}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE 7
COMPOSITION (NORMALISED %) OF C₁₅₊ SATURATE (PARAFFIN - NAPHTHENE) HYDROCARBONS

GEOCHEM SAMPLE NUMBER	013A	014A	015A	016A	017A/B	018A
DEPTH	3540- 3543m	3543- 3546m	3546- 3549m	3549- 3552m	3552- 3555m	3555- 3558m
SAMPLE TYPE						
nC15	11.61	11.32	11.71	11.75	7.50	11.10
nC16	10.79	10.26	9.60	9.81	7.93	9.32
nC17	8.48	8.75	8.38	8.65	10.06	8.81
nC18	7.79	8.84	7.90	7.67	9.14	7.42
nC19	7.34	7.13	8.19	6.84	9.34	7.34
nC20	7.17	7.22	6.20	6.92	8.36	6.91
nC21	7.37	6.78	5.56	6.09	7.99	7.90
nC22	6.81	6.07	4.58	5.76	7.67	6.55
nC23	5.74	5.75	4.12	5.18	6.54	6.59
nC24	4.30	4.69	2.85	4.37	4.44	5.33
nC25	3.81	3.80	2.79	3.95	3.72	3.85
nC26	3.10	3.51	2.26	3.12	3.00	3.51
nC27	3.33	3.57	3.16	3.39	2.97	3.08
nC28	2.90	2.83	2.94	6.76	2.39	2.82
nC29	2.54	2.42	3.93	2.62	2.02	2.61
nC30	1.53	1.71	3.98	1.56	1.33	1.52
nC31	1.47	1.74	3.20	1.35	1.30	1.50
nC32	1.11	0.94	2.59	1.29	1.15	1.05
nC33	1.30	1.30	2.00	1.27	1.35	1.09
nC34	0.91	1.00	2.72	1.14	0.86	1.03
nC35	0.59	0.38	1.34	0.52	0.95	0.67
Paraffin	6.26	8.29	3.20	9.76	6.81	6.92
Isoprenoid	0.98	1.30	0.39	1.78	1.16	0.95
Naphthene	92.76	90.41	96.41	88.46	92.03	92.13
CPI 1 Index	1.07	1.04	1.11	0.93	1.06	1.07
CPI 2 Index	1.12	1.09	1.10	0.80	1.08	1.04
CPI 3 Index	1.11	1.13	1.22	0.69	1.10	0.97
Prist/Phytane	1.97	2.30	1.83	3.20	2.33	2.05
Prist/nC17	0.58	0.61	0.62	0.78	0.59	0.53
Phytane/nC18	0.32	0.26	0.36	0.27	0.28	0.31

Job Number : 3237

$$C.P.I. 1 = \frac{1}{2} \left[\frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{20} + C_{22} + C_{24} + C_{26}} + \frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{22} + C_{24} + C_{26} + C_{28}} \right]$$

$$C.P.I. 2 = \frac{1}{2} \left[\frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{24} + C_{26} + C_{28} + C_{30}} + \frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{26} + C_{28} + C_{30} + C_{32}} \right]$$

$$C.P.I. 3 = \frac{2 \times (C_{27})}{C_{26} + C_{28}}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE 7
COMPOSITION (NORMALISED %) OF C₁₅₊ SATURATE (PARAFFIN - NAPHTHENE) HYDROCARBONS

GEOCHEM SAMPLE NUMBER	019A	020A	021A	022A
DEPTH	3558- 3561m	3561- 3564m	3564- 3567m	3567- 3570m
SAMPLE TYPE				
nC15	9.62	12.91	17.00	14.13
nC16	9.95	9.72	13.61	11.90
nC17	10.82	8.29	9.36	11.45
nC18	10.09	6.80	8.13	9.13
nC19	7.66	5.62	5.95	7.87
nC20	8.33	6.15	6.53	7.04
nC21	7.79	5.57	5.50	6.30
nC22	6.27	5.49	4.56	5.78
nC23	5.15	5.07	3.95	4.60
nC24	4.05	4.50	3.48	3.64
nC25	3.47	4.10	3.14	3.31
nC26	2.76	3.93	2.54	2.51
nC27	3.23	4.21	3.12	2.57
nC28	2.34	3.50	3.08	2.42
nC29	2.44	3.50	2.61	2.40
nC30	1.48	2.54	1.84	1.33
nC31	1.55	2.58	1.86	1.09
nC32	0.68	1.47	0.99	0.50
nC33	1.01	1.88	1.26	0.96
nC34	0.86	1.32	1.10	0.76
nC35	0.44	0.87	0.38	0.31
Paraffin	9.40	7.53	6.89	10.13
Isoprenoid	1.97	1.32	1.32	2.67
Naphthene	88.63	91.15	91.79	87.20
CPI 1 Index	1.10	1.02	1.03	1.03
CPI 2 Index	1.24	1.13	1.13	1.17
CPI 3 Index	1.27	1.13	1.11	1.04
Prist/Phytane	2.65	2.74	2.54	2.78
Prist/nC17	0.83	0.76	0.70	0.79
Phytane/nC18	0.33	0.34	0.31	0.36

Job Number : 3237

$$C.P.I. 1 = \frac{1}{2} \left[\frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{20} + C_{22} + C_{24} + C_{26}} + \frac{C_{21} + C_{23} + C_{25} + C_{27}}{C_{22} + C_{24} + C_{26} + C_{28}} \right]$$

$$C.P.I. 2 = \frac{1}{2} \left[\frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{24} + C_{26} + C_{28} + C_{30}} + \frac{C_{25} + C_{27} + C_{29} + C_{31}}{C_{26} + C_{28} + C_{30} + C_{32}} \right]$$

$$C.P.I. 3 = \frac{2 \times (C_{27})}{C_{26} + C_{28}}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE 8
METHYLPHENANTHRENE INDICES (MPI)

JOB 3237	DEPTH/ IDENTITY	SAMPLE TYPE	MPI 1		Rcalc		MPI 2	
GEOCHEM SAMPLE NUMBER			AREA	HEIGHT	AREA	HEIGHT	AREA	HEIGHT

WELL: 6607/5-1

3237-001A	3405.30m		0.38	0.35			0.42	0.42
3237-002A	3407.45m		0.34	0.41			0.39	0.45
3237-003A	3409.60m		0.38	0.39			0.32	0.29
3237-004A	3411.75m		0.51	0.49			0.62	0.56
3237-005A	3412.90m		0.57	0.59			0.74	0.76
3237-006A	3414.65m		0.61	0.66			0.80	0.85
3237-007A	3417.50m		1.40	1.60			2.47	2.80
3237-008A	3419.15m		0.79	0.77			1.10	1.02
3237-009A	3420.15m		0.79	0.75			1.27	1.17
3237-010A	3421.45m		0.45	0.58			0.58	0.71
3237-011A	3534-3537m		0.75	0.79			1.02	1.00
3237-012A	3537-3540m		0.63	0.69			0.94	0.87
3237-013A	3540-3543m		0.64	0.75			0.76	0.87
3237-014A	3543-3546m		0.64	0.77			0.95	1.04
3237-015A	3546-3549m		0.58	0.57			0.68	0.67
3237-016A	3549-3552m		0.58	0.57			0.74	0.70
3237-017A/B	3552-3555m		0.47	0.47			0.55	0.56
3237-018A	3555-3558m		0.45	0.53			0.53	0.63
3237-019A	3558-3561m		0.56	0.57			0.75	0.70
3237-020A	3561-3564m		0.57	0.76			0.79	1.03
3237-021A	3564-3567m		0.68	0.64			0.96	0.77
3237-022A	3567-3570m		0.53	0.62			0.61	0.72

$$MPI 1 = \frac{1.5(2-MP + 3-MP)}{P + 1-MP + 9-MP}$$

$$MPI 2 = \frac{3(2-MP)}{P + 1-MP + 9-MP}$$

$$R_{calc} = \begin{cases} 0.60(MPI 1) + 0.40 & (\text{if } Ro < 1.35\%) \\ -0.60(MPI 1) + 2.30 & (\text{if } Ro > 1.35\%) \end{cases}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE 9
 CARBON ISOTOPE COMPOSITIONS (‰, PDB)

JOB 3237								
GEOCHEM SAMPLE NUMBER	DEPTH/ IDENTITY	TOTAL EXTRACT WHOLE OIL	SATURATES	AROMATICS	NSO	ASPHALTENES	KEROGEN	PYROLYSATE (S2)

WELL: 6607/5-1

3237-006A	3414.65m	-28.10	-28.38	-28.94 *	-29.24 *	-28.99		
3237-009A	3420.15m	-28.26	-28.82	-30.31 *	-29.36 *	-28.12		
3237-012A	3537-3540m	-27.48	-27.46	-27.78	-27.79	-27.47		
3237-015A	3546-3549m	-27.84	-27.71	-27.94	-27.68	-26.97		

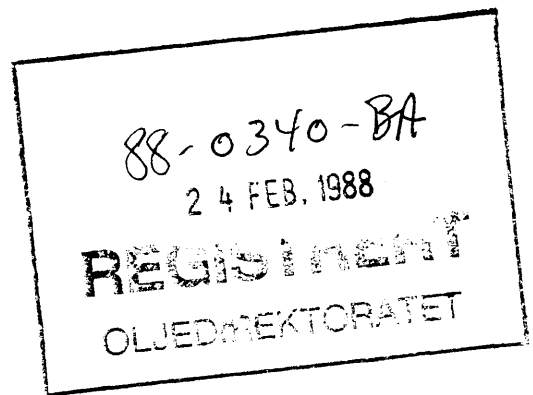
*Small sample, treat data with caution

U-549

Prepared for

ESSO NORGE A.S

3



GEOCHEMICAL EVALUATION OF THE SECTION BETWEEN 2000 METRES
AND 3800 METRES IN WELL 6607/5-1

GEOCHEM

JANUARY 1988



INTRODUCTION

This report presents a geochemical evaluation of the section between 2000 metres and 3800 metres in well 6607/5-1.

The analytical format was specified by the client and was designed to:-

- a) investigate the hydrocarbon potential of the sediments in terms of richness, maturity and potential for oil or gas
- b) detect and characterise shows of migrated hydrocarbons.

Detailed discussions of Organic Facies, Source Richness, Thermal Maturity, Show Detection and Show Characterisation are presented in the appropriate text chapters and have been integrated to form the Conclusions.

This project was authorised by S.H. Hanslien/Ø.A. Dahl-Stamnes, Esso Norge a.s.

ANALYTICAL

Fifty (50) canned ditch cuttings samples, composited over 10 metres, were received from the interval 2000-3800 metres in 6607/5-1. They were assigned the Geochem job number 1677.

The samples were screened using light hydrocarbon (C_1-C_7), organic carbon and Rock-eval pyrolysis analyses. Samples for further analysis were selected on the basis of the screen results following discussions with J. Johannesen.

The following analyses were performed in this study:

<u>ANALYSIS</u>	<u>NUMBER OF ANALYSES</u>
Lithologic descriptions	50
Total organic carbon	78
Rock-eval pyrolysis	52
Light hydrocarbons (C_1-C_7)	50
Detailed gasoline range (C_4-C_7)	10



<u>ANALYSIS</u>	<u>NUMBER OF ANALYSES</u>
Vitrinite reflectance	50
Kerogen type and spore colouration	50
C ₁₅₊ extraction and chromatography	10
Capillary GC, paraffin-naphthenes	10
Programmed pyrolysis-GC	10

The data are presented in tables 1 through 10 and graphically in figures 1 through 12. A brief description of the analytical techniques employed in this study is included in the back of the report.

GENERAL INFORMATION

Six (6) copies of this report have been forwarded to Ø.A. Dahl-Stamnes, Esso Norge a.s., Harstad. A copy of the data has also been retained by Geochem for future consultation with authorised Esso personnel.

The results of this study are proprietary to Esso Norge a.s.