

# FLOPETROL

DIVISION : NSD

BASE : NWB

REPORT N° : 83/2301/30

## Well Testing Report

RIG "ROSS ISLE"

Client :	STATOIL	DST NO. 3
Field :	GULLFAKS	Well : 34/10-7
Zone :	COOK SAND	Date : JULY 1983

# FLOPETROL

Client : STATOILSection : INDEXBase : NWBField : GULLFAKSPage : 1Well : 34/10-7Report N°: 83/2301/30

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- 7 \_ WELL TESTING DATA \_

N° DOP 101

Flopetrol chief operator

Name : ØYVIND SKAGEN

Client representative

Name : JON HANSTVEIDT

**- TEST PROCEDURE -**

## DST # 3

WELL WAS PERFORATED 1807-1821 METERS RKB. 2 FLOPETROL SDP AND SPERRY SUN BOTTOM HOLE GAUGES WERE RUN IN HOLE WITH TEST STRING IN F-NIPPLE AND DST HANGER. DST TOOLS ON TUBING WERE HALIBURTON'S. FLOPETROL EQUIPMENT WAS USED FROM BOP.

WELL WAS OPEN THROUGH 40/64" FIXED CHOKE TO SURGE TANK IN 3 MIN FOR INITIAL FLOW. AFTER 63 MIN INITIAL BUILD-UP, WELL WAS OPEN THROUGH 32/64" FIXED CHOKE FOR CLEAN UP AND MAIN FLOW. TOTALLY 8 HRS 18 MIN DURING STABLE FLOW 6 OIL AND 3 GAS PVT SAMPLES WERE TAKEN AT SEPARATOR. THEN THE WELL WAS SHUT IN FOR MAIN BUILD-UP IN 9 HRS 6 MINS.

WHILE FLOWING WELL ON 8/64" FIXED CHOKE, TWO BOTTOM HOLE SAMPLES WERE TAKEN.

WELL WAS KILLED AND BOTTOM HOLE GAUGES WERE TAKEN OUT WITH TEST STRING.

# FLOPETROL

Client : STATOIL

Section : **2**

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## — MAIN RESULTS —

Tested interval : COOK SAND      Perforations : 1807-1821 MTR RKB

Operation	Duration	Bottom hole pressure	Well head pressure	Oil prod. rate	Gas prod. rate	G.O.R.
Units	MIN	BARA	PSIG	M <sup>3</sup> /DAY	MSCM/DAY	SCM/M <sup>3</sup>
INITIAL FLOW ON 40/64" FIXED CHOKE	3	304.74	925			
INITIAL BUILD-UP	63	313.52	(DOWNHOLE SHUT IN)			
CLEAN UP ON 32/64" FIXED CHOKE	21	305.70	2195			
MAIN FLOW ON 32/64" FIXED CHOKE	477	307.76	2303	829.6	110.5	133
MAIN BUILD-UP	546	313.06	(DOWNHOLE SHUT IN)			
SAMPLE FLOW ON 8/64" FIXED CHOKE TO SURGE TANK	57	312.87		52.00		

Depth of bottom hole measurements : \_\_\_\_\_ Reference : RKB

Temperature : 71.5°C at 1798.22M depth

Separator gas gravity (air : 1) at choke size : .680 at 32/64" FIXED

STO gravity at choke size 32/64"FIXED .8299

BSW : 0 Water cut : 0

### REMARKS AND OTHER OPERATIONS

ALL READINGS ARE LAST RECORDED ON EVENTS.

BOTTOM HOLE PRESSURES AND TEMPERATURES FROM SDP 82014.

## - OPERATING AND MEASURING CONDITIONS -

### A - TYPE OF GAUGE -

#### BOTTOM HOLE :

Pressure : 2 x S.D.P., 2 x SPERRY SUNTemperature : 2 x S.D.P., 2 x SPERRY SUN

#### WELL HEAD :

Pressure : P.W.T. 0-10000, FOXBORO 0-5000 PSIG, SPERRY SUNTemperature : FOXBORO 0-200°F, SPERRY SUN

#### SEPARATOR :

Pressure : BARTON 0-1500 PSIG, 0-200" HWTemperature : BARTON

### B - PRODUCTION RATE CONDITIONS AND SOURCES -

#### OIL PRODUCTION RATE

- Tank  Floco  
 Meter  Rotron  
 Dump  Rotron  
 \_\_\_\_\_

#### Reference conditions

- Separator  
 Atmospheric  
 pressure 60°F

#### Shrinkage measurement

- With tank  
 With shrinkage  
 tester

#### GAS PRODUCTION RATE

- Orifice meter  
 \_\_\_\_\_

#### Standard conditions

14.698 PSI  
59°F

#### WATER PRODUCTION RATE

- Tank  
 Meter  
 \_\_\_\_\_

### C - WELL DATA -

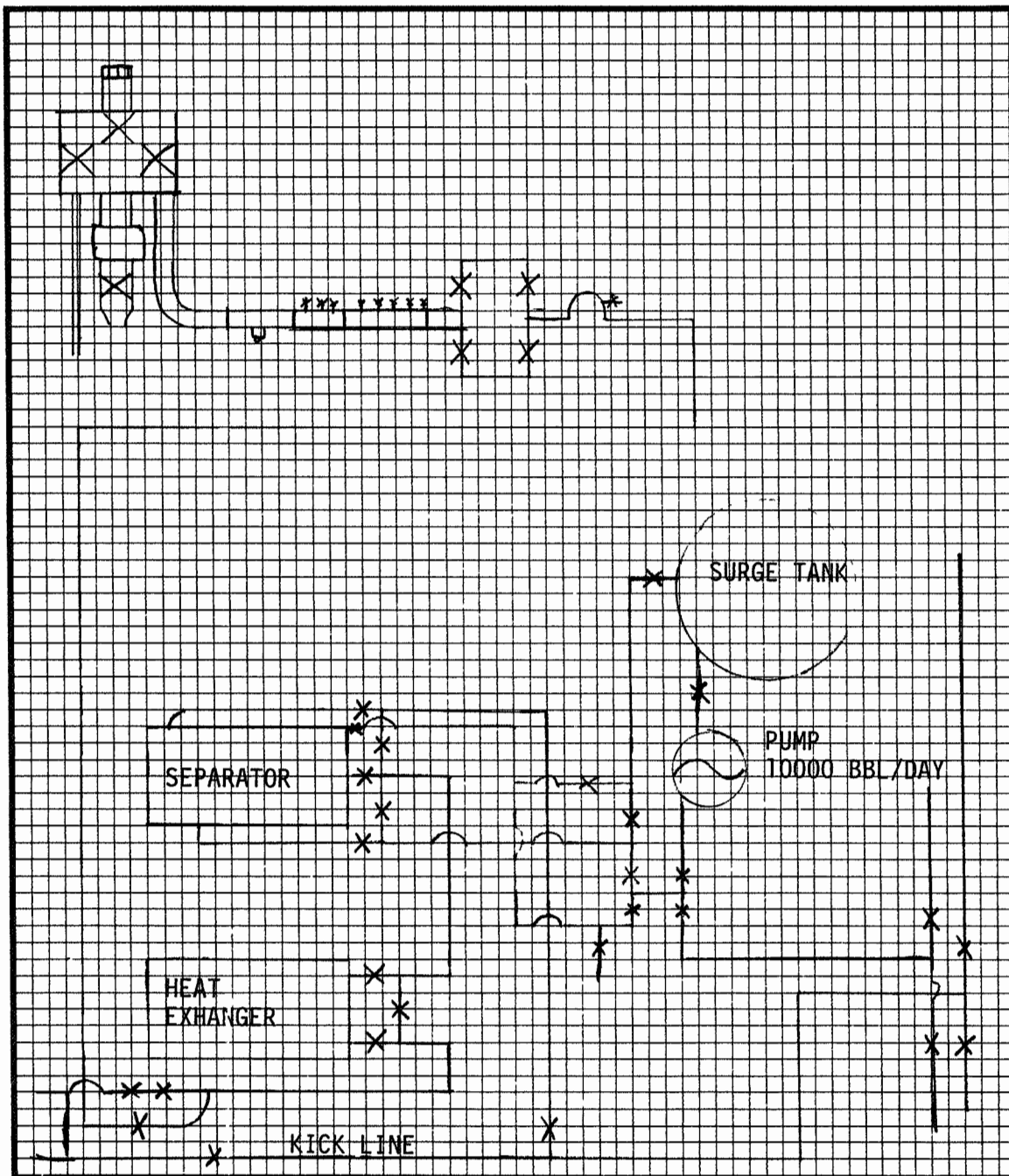
#### WELL STATE DURING SURVEY :

Well producing through : tubing / ~~drill pipe~~ / casing  
 Main casing size 7" set at WELLHEAD Total well depth \_\_\_\_\_  
 Tubing size 3 1/2" set at \_\_\_\_\_ Packer R.T.T.S set at 1777.88 M  
Perforations :  
 - Zone \_\_\_\_\_ From 1807 mtr to 1821 mtr From \_\_\_\_\_ to \_\_\_\_\_  
 - Zone \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_  
 -

#### WELL STATE BEFORE TEST : NEW WELL

- Well closed since \_\_\_\_\_  
 Well flowing since \_\_\_\_\_ Producing zone \_\_\_\_\_  
 Choke size \_\_\_\_\_

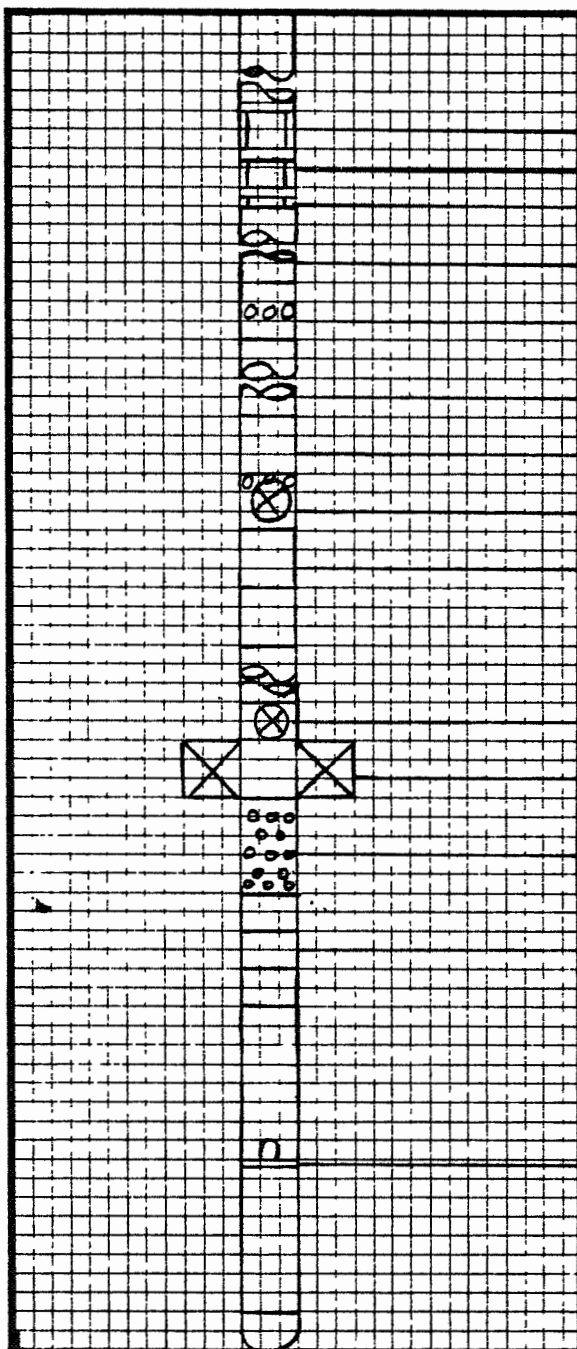
## SURFACE EQUIPMENT LAYOUT



REMARKS :

NOT TO SCALE

## - WELL COMPLETION DATA -



DEPTHS IN MTR FROM R.K.B.  
MEASUREMENT TO BOTTOM OF EACH ITEM

R.T.T.S. CIRC. VALVE 1698.76

APR-M CIRC. VALVE 1766.08

LPR VALVE 1772.42

R.T.T.S. PACKER 1778.29

PERFORATED ANCHOR 1781.84

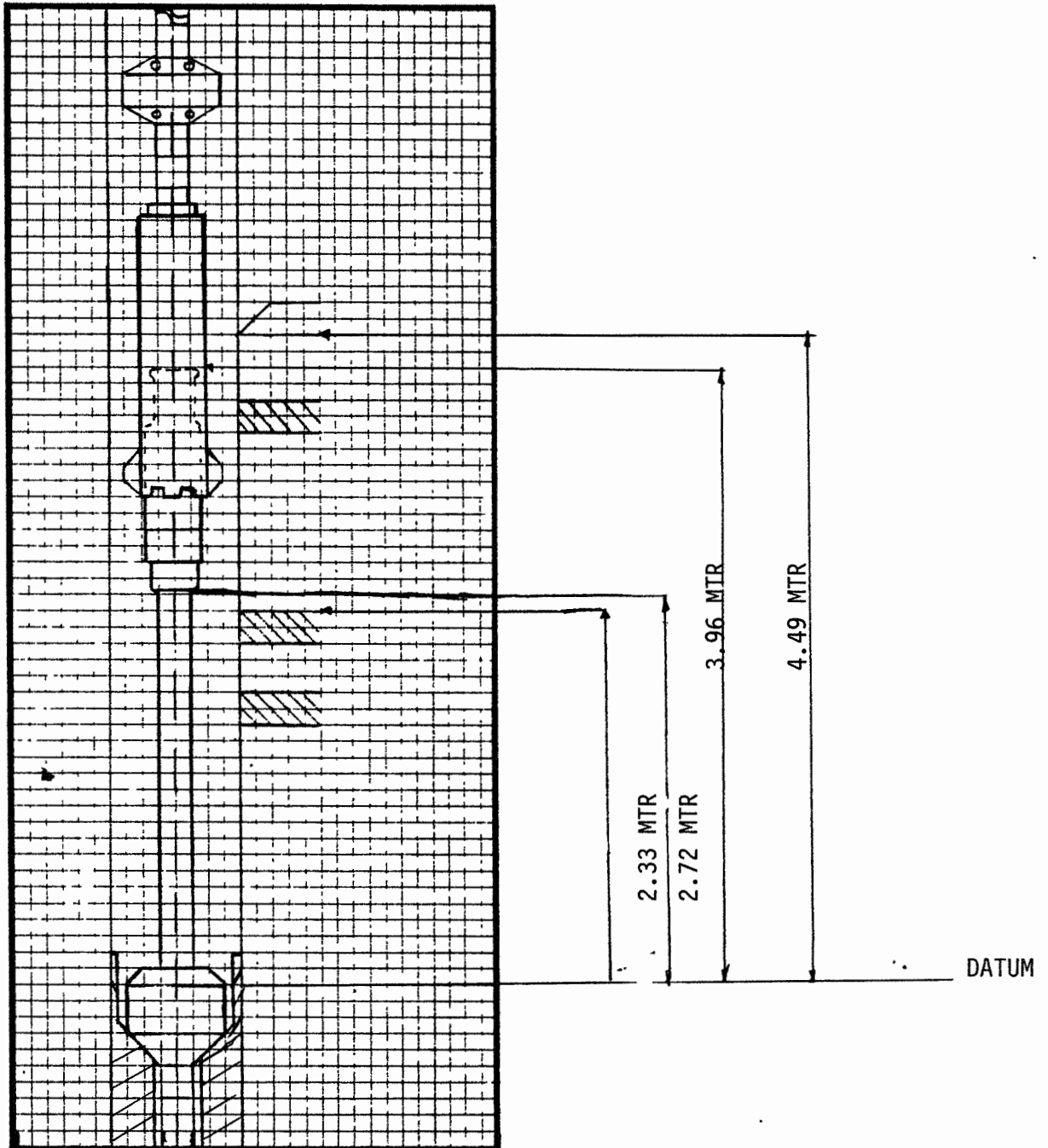
BAKER F-NIPPLE 1.75", 1782.30

DST HANGER 1791.96

### REMARKS :

DEPTHS IN METERS FROM RKB  
MEASUREMENTS TO BOTTOM OF EACH ITEM  
NOT TO SCALE

## - WELL COMPLETION DATA -



### REMARKS :

CLEARANCE BETWEEN TOP OFF M.P.RAMS AND COLLAR ON SLICK  
JOINT = 39 CM.

CLEARANCE FROM TOP OFF UNLATCH POINT TO BOTTOM OFF SHEAR RAMS = 24 CM.



# FLOPETROL

Client : STATOILSection : **6**Base : NWBField : GULLFAKSPage : 8Well : 34/10-7Report N°: 83/2301/3

## - SEQUENCE OF EVENTS -

DST NO, 3

DATE	TIME	OPERATION
04.07.83	12:00	PRESSURE TEST LUBRICATOR VALVE. BODY TEST - TOP AGAINST VALVE AND BOTTOM AGAINST VALVE.
	14:00	PRESSURE TEST CHOKE MANIFOLD TO 5000 PSI. BODY TEST. TEST AGAINST HIGH PRESSURE VALVES AND AGAINST LOW PRESSURE VALVES FROM DOWNSTREAM SIDE.
	16:00	PRESSURE TEST EZ-TREE. BODY TEST AND TEST AGAINST BALL AND FLAPPER VALVE.
	18:00	PRESSURE TEST FLOWHEAD WITH BOP, LUBRICATOR AND STUFFING BOX FITTED ON: BODY TEST; AGAINST MASTER VALVE FROM BELOW; AGAINST KILL VALVE, SWAB VALVE AND FLOW LINE VALVE. PRESSURE TEST FROM KILL VALVE SIDE AGAINST KILL VALVE AND PRESSURE TEST BOP AND LUBRICATOR AND STUFFING BOX AGAINST SWAB VALVE.
	NOTE:	ALL PRESSURE TESTING DETAILS DONE AS STATED IN STATOIL TEST PROGRAM.
	20:00	DO GENERAL MAINTENANCE.
	TO 24:00	
05.07.83	11:00	DO GENERAL MAINTENANCE.
	11:15	FLUSH LINES TO PRESSURE TEST SURFACE EQUIPMENT.
	11:28	PRESSURE TEST LINES AGAINST BURNER FOOT DIVIDER VALVES.
	11:38	PRESSURE TEST OK.
	12:30	PRESSURE TEST AGAINST VALVE 4-6-7 (SEE TEST SURFACE LAYOUT) 5000 PSI.
	13:00	PRESSURE TEST AGAINST VALVE 4-7-8, 3000 PSI.
	13:15	PRESSURE TEST AGAINST VALVE 4-6-8-9-10-11, 1500 PSI.
	13:40	PRESSURE TEST AGAINST VALVE 4-6-8-14-13-9-12-18-19-20 (LEAK).

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# FLOPETROL

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## \_ SEQUENCE OF EVENTS \_ (Continuation)

DATE	TIME	OPERATION
05.07.83	13:55	PRESSURE TEST AGAINST VALVE 4-6-8-14-13-9-12-24-25-19-20.
		STILL LEAKING. DO PRESSURE TESTING SEQUENCE TO ELIMINATE
		LEAKING VALVE. 2 VALVES LEAKING (GAS BYPASS AND 6" RIG
		GAS VALVE).
	17:00	REPAIR GAS BYPASS.
	19:50	PRESSURE TEST AGAINST SEPARATOR 4-6-8-9-10-11, 1200 PSI.
		OK.
	21:00	WIRE LINE WINCH ARRIVES ON BOARD. CHECK THROUGH AND TRY
		ENGINE. SDP # 82016 AND # 82014 ARE PREPARED TO RUN IN
		HOLE. BOTTOM HOLE SAMPLER # ; # , #
		ARE PREPARED.
06.07.83	00:00	DO GENERAL MAINTENANCE.
	19:00	SCHLUMBERGER PERFORATE 1ST RUN.
	21:00	SCHLUMBERGER PERFORATE 2ND RUN.
	22:00	SCHLUMBERGER PERFORATE 3RD RUN. TOTAL PERFORATED INT:
		1807-1821 METERS.
	20:34	CONNECT SDP # 82014 (IN DST HANGER).
	20:54	CONNECT SDP # 82016 (IN F NIPPLE).
07.07.83	03:50	PICK UP EZ-TREE.
	03:55	EZ-TREE IN ELEVATOR.
	03:59	EZ-TREE ON STRING.
	04:10	FUNCTION TEST EZ-TREE. OK.
	04:19	RIH WITH EZ-TREE.
	04:55	LUBRICATOR VALVE ON ELEVATOR.
	04:57	LUBRICATOR VALVE ON STRING.
	04:58	FUNCTION TEST LUBRICATOR VALVE.
	05:00	LUBRICATOR VALVE RIH.
	05:15	PRESSURE TEST STRING.
	05:58	FLOWHEAD ON ELEVATOR.

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# FLOPETROL

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\_ SEQUENCE OF EVENTS \_ ( Continuation )

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DATE	TIME	OPERATION
07.07.83	06:27	FLOWHEAD ON TEST STRING. SWAB AND MASTER VALVE CLOSED.
		KILL VALVE OPEN.
	06:36	LAND EZ-TREE IN WEAR BUSHING. RIG UP SURFACE EQUIPMENT.
	07:53	OPEN FAIL SAFE VALVE.
	07:57	FLUSH LINES.
	08:05	CLOSE KILL VALVE AND OPEN MASTER.
	08:07	PRESSURE TEST AGAINST KILL VALVE FOR 10 MIN AT 5000 PSI.
		OK.
	08:36	CLOSE MASTER VALVE AND OPEN KILL.
	08:45	PRESSURE TEST AGAINST SWAB, FAILSAFE AND MASTER VALVE FOR
		10 MIN AT 5000 PSI. OK.
	08:58	OPEN MASTER VALVE.
	09:00	PRESSURE TEST DRILLPIPE TESTER VALVE FOR 10 MIN AT 5000
		PSI. OK. KEEP PRESSURE.
	09:12	CLOSE EZ-TREE AND BLEED OFF TO 500 PSI ABOVE FOR 10 MIN.
		OK.
	09:25	PUMP TO EQUALISE PRESSURE AND OPEN EZ-TREE. KEEP
		PRESSURE.
	09:29	CLOSE LUBRICATOR VALVE AND BLEED DOWN TO 500 PSI ABOVE
		FOR 10 MIN. OK.
	09:43	PRESSURE TO EQUALIZE. OPEN LUBRICATOR.
	09:46	CLOSE MASTER VALVE.
	09:52	OPEN FAILSAFE.
	09:55	PRESSURE TEST AGAINST HEATER INLET AND CHOKE MANIFOLD
		FIXED SIDE TO 5000 PSI FOR 10 MIN. OK.
	10:10	PRESSURE TEST AGAINST ADJUSTABLE SIDE TO 5000 PSI FOR
		10 MIN.
	10:23	TEST EMERGENCY SHUT DOWN SYSTEM. OK.
	10:41	OPEN MASTER. CLOSE KILL VALVE.
	11:00	SET PACKER AT 1777.88 MTR.

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# FLOPETROL

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## \_ SEQUENCE OF EVENTS \_ (Continuation)

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DATE	TIME	OPERATION
07.07.83	11:03	CLOSE FAILSAFE AND PRESSURE TEST AGAINST LPR VALVE.
	11:16	CLOSE KILL VALVE.
	11:38	OPEN LPR.
	11:48	OPEN WELL ON 40/64" FIXED CHOKE.
	11:51	SHUT IN WELL AT LPR VALVE AND CHOKE MANIFOLD FOR INITIAL
		BUILD UP. TOTAL PRODUCTION IN 3 MIN = 2.4 m <sup>3</sup> .
	12:54	OPEN LPR.
	12:59	OPEN WELL ON 32/64" FIXED CHOKE.
	13:12	GAS AT SURFACE.
	13:19	OIL AT SURFACE.
	13:55	SWITCH FLOW THROUGH SEPARATOR.
	14:30	START CALCULATIONS.
	15:50	TANK FACTOR = 0.9209.
	16:30	FLARE OFF. OIL FROM SURGE TANK.
	18:28	TAKE FIRST SET OF SAMPLES: OIL WITH MERCURY # 82121021,
		OIL WITH WATER # 83021216, GAS # A-14662.
	19:25	TAKE 2ND SET OF SAMPLES: OIL WITH Hg: # 8212715, OIL
		WITH WATER # 8302802, GAS # A-14669.
	20:21	TAKE 3RD SET OF SAMPLES: OIL WITH Hg # 83021222, OIL WITH
		H <sub>2</sub> O # 83021321, GAS # A-14419.
	20:55	TAKE METER FACTOR + SHRINKAGE FACTOR = 0.8610.
	21:12	SHUT IN WELL AT CHOKE MANIFOLD AND LPR.
	21:13	BY-PASS SEPARATOR.
	21:15	FILL 6 JARS AND 3 JERRY CANS AND 1 BBL WITH SEPARATOR AND
		SURGE TANK OIL.
	22:00	START RIGGING UP WIRE LINE TO RUN BOTTOM HOLE SAMPLERS.
08.07.83	06:18	OPEN LPR-N.
	06:29	OPEN AT CHOKE MANIFOLD THROUGH 8/64" FIXED CHOKE ON
		HEATER TO SURGE TANK.
	07:26	SHUT IN LUBRICATOR VALVE.

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DATE	TIME	OPERATION
08.07.83	07:42	OPEN SWAB VALVE.
	07:49	BHS IN LUBRICATOR.
	07:52	CLOSE WIRELINE BOP AND CHOKE MANIFOLD.
	07:56	OPEN KILL VALVE. PRESSURE TEST TO 3000 PSIG.
	08:03	OPEN WIRELINE BOP.
	08:10	PRESSURE TEST GOOD. CLOSE KILL VALVE.
	08:11	OPEN LUBRICATOR VALVE. RUN IN HOLE TO CATCH SAMPLES.
		BHS No. 19 SET AT 11:10 HRS, BHS No. 44 SET AT 11:13 HRS.
	08:27	OPEN WELL AT CHOKE MANIFOLD. FLOW THROUGH 8/64" FIXED
		CHOKE ON HEATER TO SURGE TANK.
	09:00	SAMPLERS ON DEPTH 1760 METERS
	11:10	BH SAMPLER NO. 19 FIRED.
	11:13	BH SAMPLER NO. 44 FIRED.
	11:30	SHUT IN WELL AT CHOKE MANIFOLD.
	11:33	START POOH WITH SAMPLERS.
	12:07	SAMPLERS IN LUBRICATOR.
	12:08	CLOSE LUBRICATOR VALVE. BLEED OFF PRESSURE.
	12:14	DISCONNECT WIRELINE LUBRICATOR.
	12:18	BHS OUT OF LUBRICATOR AND CHECKED. OK.
	12:35	CLOSE MASTER VALVE.
	12:37	OPEN KILL VALVE.
	12:40	FLUSH LINES TO SURGE TANK.
	12:50	CLOSE HYDRAULIC FAILSAFE VALVE.
	12:54	OPEN MASTER VALVE AND EQUALIZE ACROSS LUBRICATOR VALVE.
	12:57	OPEN LUBRICATOR VALVE, START BULLHEADING. RIG DOWN
		SURFACE EQUIPMENT.
	16:30	UNSEAT PACKER.
	16:35	BULLHEAD ANNULAR.
	17:00	START PULLING STRING.
	17:30	FLOWHEAD OFF STRING.

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<b>FLOPETROL</b>	Client : <u>STATOIL</u>	<b>- WELL TESTING DATA SHEET -</b>	Section : <b>7</b>
Base : <u>NWB</u>	Field : <u>GULLFAKS</u>		Page : <u>14</u>
	Well : <u>34/10-7</u>		Report N° : <u>83/2301/30</u>

DATE - TIME		PRESSURE AND TEMPERATURE MEASUREMENTS							PROD RATES AND FLUID PROPERTIES					GOR			
07.07.83		BOTTOM HOLE		WELL HEAD			SEPARATOR		OIL OR CONDENSATE			GAS					
Time	Cumul	Temp	Pressure	Tg temp	Tg press	Cg press	Temp	Press	Rate	Gravity	BSW	Rate	Gravity				
HRS/MIN	MIN	°C	BAR	°F	PSIG		°F	PSIG	M <sup>3</sup> /DAY	SG/60	%	mm <sup>3</sup> /day	Air = 1	M <sup>3</sup> /M <sup>3</sup>	CO <sub>2</sub>	Units	
11:38	0	64.5	341.08		1800												
11:39	1				1837												
11:40	2				1840												
11:41	3				1840												
11:42	4				1840												
11:43	5				1840												
11:44	6				1840												
11:45	7				1840												
11:46	8				1840												
11:47	9				1840												
11:48	10/0	64.7	312.61	62	1840				OPEN ON CHOKE MANIFOLD FOR INITIAL FLOW ON 40/64" FIXED CHOKE.								
11:49	1	64.6	310.40		740												
11:50	2	64.4	303.17		900												
11:51	3/0	64.6	304.74		925				SHUT IN WELL AT CHOKE MANIFOLD AND LPR VALVE.								

<p><u>LIQUID FLOW RATE MEASURING CONDITIONS :</u></p> <p style="text-align: center;">14.698 PSI AT 59°F</p>	<p>TESTED INTERVAL : <u>COOK SAND 1807-1821 MTR</u></p> <p>DEPTH REFERENCE : <u>RKB</u></p> <p style="text-align: right; font-size: small;">1700 22 MTR</p>
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## \_WELL TESTING DATA SHEET\_(Continuation)

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DATE - TIME		PRESSURE AND TEMPERATURE MEASUREMENTS							PROD RATES AND FLUID PROPERTIES					GOR				
07.07.83		BOTTOM HOLE		WELL HEAD			SEPARATOR		OIL OR CONDENSATE			GAS						
Time	Cumul	Temp	Pressure	Tg.temp	Tg.press	Cg.press.	Temp.	Press.	Rate	Gravity	BSW	Rate	Gravity	GOR		CO <sub>2</sub>	H <sub>2</sub> S	Units
HRS/MIN		°C	BAR	°F	PSIG		°F	PSIG	M <sup>3</sup> /DAY	SG/60	%	mm <sup>3</sup> /day	Air=1	M <sup>3</sup> /M <sup>3</sup>				
12:40																		
12:45	54	65.6	313.51		1877													
12:50	59	65.6	313.52		1875													
12:54	63/0	65.6	313.52		1935													
12:55	1	65.6	313.52		1939													
12:56	2	65.6	313.52	62	1940													
12:57	3	65.5	313.53	62	1942													
12:59	5/0	65.5	305.46	62	1275													
13:00	1	65.6	305.91	51	1330													
13:01	2	65.7	305.46	52	1395													
13:02	3	65.9	304.14	56	1525													
13:03	4	66.3	303.56	68	1950													
13:04	5	66.6	305.35	72	2160													
13:05	6	66.8	305.47	72	2200													
13:06	7	67.2	305.00	72	2230											0	0	
13:07	8	67.6	305.61	73	2180													
13:08	9	67.7	306.90	73	2540													
13:09	10	68.0	309.52	73	2540													

TRACES

# FLOPETROL

## \_WELL TESTING DATA SHEET\_(Continuation)

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DATE - TIME	PRESSURE AND TEMPERATURE MEASUREMENTS			WELL HEAD			SEPARATOR			PROD RATES AND FLUID PROPERTIES				GOR
	Cumul Time	Temp OC	Pressure BAR	Ig temp OF	Ig press PSIG	Cg press OF	Temp OF	Press. PSIG	Rate M <sup>3</sup> /DAY	Gravity SG/60	BSW %	Rate mm <sup>3</sup> /day	Gravity Air=1	
07.07.83														
HRS/MIN														
13:09														
13:10	11	68.2	309.46	73	2542									
13:11	12	68.3	309.48	73	2540									
13:12	13	68.6	309.47	73	2645									
13:13	14	68.7	311.16	73	2630									
13:14	15	68.8	310.85	73	2625									
13:15	16	69.0	309.85	73	2890									
13:16	17	69.0	310.20	73	2575									
13:17	18	69.2	310.08	73	2205									
13:18	19	69.3	306.63	73	2185									
13:19	20	69.3	305.38	73	2195									
13:20	21	69.5	305.70	73	2195									
13:21	22	69.5	305.67	74	2192									
13:22	23	69.9	305.63	76	2193									
13:23	24	69.8	305.68	78	2199									
13:24	25	69.9	305.95	80	2210									
13:25	26	70.1	306.61	81	2216									
13:26	27	70.0	306.77	82	2220									

GAS AT SURFACE. BURNER IGNITE.

OIL AT SURFACE

# FLOPETROL

## \_WELL TESTING DATA SHEET\_(Continuation)

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DATE - TIME	PRESSURE AND TEMPERATURE MEASUREMENTS			WELL HEAD			SEPARATOR			PROD. RATES AND FLUID PROPERTIES				GOR	
	BOTTOM HOLE	Temp		Ig temp	Cg press.	Temp.	Press.	Rate	Gravity	Rate	Gravity	Rate	Gravity		
Time	Pressure	OF	PSIG	OF	PSIG	OF	PSIG	M <sup>3</sup> /DAY	SG/60	%	mm <sup>3</sup> /day	Air=1	M <sup>3</sup> /M <sup>3</sup>	CO <sub>2</sub> H <sub>2</sub> S	Units
07.07.83															
13:26															
13:27	28	70.1	306.81	83	2221										
13:28	29	70.2	307.15	83	2222										
13:29	30	70.2	307.17	83	2226										
13:30	31	70.3	307.17	84	2228										
13:35	36	70.5	307.16	92	2246										
13:40	41	70.6	307.80	102	2253										
13:45	46	70.8	307.78	102	2264										
13:50	51	70.9	308.31	104	2265										
13:55	56	71.1	308.27	106	2269										
13:55	56														
14:00	61	71.2	308.27	108	2277										
14:10	71	71.5	308.09	109	2277										
14:20	81	71.8	308.09												
14:30	91	72.0	308.05	112	2282							.8302	0	110.9	0.670
14:45	106	72.3	307.90	114	2285							.8302	0	110.7	0.670
15:00	121	72.3	307.90	116	2287							.8302	0	111.7	0.676
15:15	136	72.5	307.90	118	2285							.8302	0	111.6	0.676

SWITCH FLOW THROUGH SEPARATOR

# FLOPETROL

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DATE - TIME		PRESSURE AND TEMPERATURE MEASUREMENTS				SEPARATOR				PROD RATES AND FLUID PROPERTIES				GOR	
HRS/MIN	Cumul Time	BOTTOM HOLE		WELL HEAD		TEMP.		PRESS.		OIL OR CONDENSATE		GAS		M <sup>3</sup> /M <sup>3</sup>	Units
		Temp °C	Pressure BAR	Ig temp OF	Ig press PSIG	Cg press OF	PSIG	Rate M <sup>3</sup> /DAY	Gravity SG/60	BSW %	Rate mm <sup>3</sup> /day	Rate Gravity	CO <sub>2</sub> H <sub>2</sub> S		
15:15															
15:30	151	72.6	307.88	118	2287	108	385	853.8	.8302	0	112.2	.676	131		
15:45	166	72.6	307.85	118	2287	112	385	846.2	.8302	0	111.8	.681	132		
16:00	181	72.6	307.90	119	2288	112	385	836.5	.8302	0	111.8	.681	134	0	0
16:15	196	72.6	307.87	120	2294	112	385	839.3	.8302	0	111.6	.681	133		
16:30	211	72.9	307.82	120	2294	112	385	837.9	.8302	0	111.5	.681	133		
16:45	226	72.8	307.81	121	2295	114	385	840.7	.8311	0	111.2	.681	132	0	0
17:00	241	72.7	308.09	122	2297	115	385	860.1	.8311	0	111.2	.680	129		
17:15	256	72.7	308.04	123	2300	116	385	833.8	.8311	0	111.2	.680	133		
17:30	271	73.0	308.04	123	2300	116	385	835.1	.8306	0	111.2	.680	133		
17:45	286	72.7	308.01	123	2302	117	385	832.4	.8306	0	111.2	.680	134	0	0
18:00	301	72.9	308.01	123	2302	117	385	832.4	.8306	0	111.2	.680	134		
18:15	316	72.8	308.08	123	2303	117	385	832.4	.8306	0	111.2	.680	134		
18:30	331	72.8	308.05	123	2303	117	385	850.4	.8288	0	111.2	.680	131	0	0
19:00	361	72.9	307.98	124	2303	117	385	823.4	.8288	0	110.5	.680	134		
19:30	391	72.9	307.88	125	2303	117	385	830.3	.8288	0	110.5	.680	133		
20:00	421	73.0	307.84	125	2303	117	385	829.5	.8288	0	110.5	.680	133	0	0
20:30	451	73.0	307.84	125	2303	118	385	828.9	.8288	0	110.5	.680	133		













# FLOPETROL

## \_WELL TESTING DATA SHEET\_(Continuation)

Page : 25  
Report N°: 83/2301/30

Section : **7**

DATE - TIME		PRESSURE AND TEMPERATURE MEASUREMENTS							PROD RATES AND FLUID PROPERTIES					GOR			
08.07.83		BOTTOM HOLE		WELL HEAD			SEPARATOR		OIL OR CONDENSATE			GAS					
Time	Cumul	Temp	Pressure	Tg temp	Tg press	Cg press.	Temp.	Press	Rate	Gravity	BSW	Rate	Gravity				
HRS/MIN		°C	BAR	°F	PSIG		°F	PSIG	M <sup>3</sup> /DAY	SG/60	%	mm <sup>3</sup> /day	Air=1	M <sup>3</sup> /M <sup>3</sup>	CO <sub>2</sub>	H <sub>2</sub> S	Units
08:11																	
08:25		70.4	313.07		2690												
08:27	0	70.4	313.80														
08:30	3	70.3	312.95	60	2692												
08:35	8	70.5	312.96	60	2693				64.58	.823	0						
08:40	13	70.7	312.93	60	2694												
08:45	18	70.8	312.92	60	2695				54.09	.823	0						
08:50	23	70.9	312.91	60	2695												
08:55	28	70.1	312.93	60	2696												
09:00	33	71.2	312.94	60	2697				45.79	.823	0						
09:05	38	71.2	312.93	60	2697												
09:10	43	71.3	312.92	60	2697												
09:15	48	71.4	312.93	60	2700				45.79	.823	0						
09:20	53	71.6	312.92	60	2700												
09:25	58	71.7	312.92	60	2702												
09:30	63	71.7	312.93	61	2702				47.78	.823	0						
09:45	78	71.8	312.96	62	2702				47.86	.823	0						
10:00	93	71.9	312.96	62	2702				50.57	.823	0						

OPEN WELL AT CHOKE MANIFOLD. FLOW THROUGH 8/64" FIXED CHOKE ON HEATER

SAMPLERS ON DEPTH.



# FLOPETROL

## \_WELL TESTING DATA SHEET\_(Continuation)

Page :27  
Report N°:83/2301/30

Section : **7**

DATE - TIME		PRESSURE AND TEMPERATURE MEASUREMENTS							PROD RATES AND FLUID PROPERTIES					GOR			
08.07.83		BOTTOM HOLE		WELL HEAD			SEPARATOR		OIL OR CONDENSATE			GAS					
Time	Cumul	Temp	Pressure	Tg temp	Tg press	Cg press.	Temp	Press.	Rate	Gravity	BSW	Rate	Gravity				
HRS/MIN		°C	BAR	°F	PSIG		°F	PSIG	M <sup>3</sup> /DAY	SG/60	%	mm <sup>3</sup> /day	Air=1	M <sup>3</sup> /M <sup>3</sup>	CO <sub>2</sub>	H <sub>2</sub> S	Units
11:39																	
11:40	10	72.0	313.06	62	2707												
11:45	15	71.9	313.11	62	2707												
11:50	20	71.9	313.09	62	2707												
11:55	25	71.7	313.10	63	2705												
12:00	30	71.6	313.12	63	2704												
12:05	35	71.5	313.12	63	2704												
12:07	37/0	71.5	313.10														
12:08																	
12:14																	
12:18																	
12:35																	
12:40																	
12:50																	
12:54																	
12:57																	
12:59																	

SAMPLERS AT SURFACE.  
 CLOSE LUBRICATOR VALVE. BLEED OFF PRESSURE.  
 TAKE OFF LUBRICATOR AND RETRIEVE SAMPLERS.  
 SAMPLERS OUT OF HOLE. BOTH WORKED.  
 CLOSE MASTER VALVE. OPEN KILL VALVE.  
 FLUSH LINES TO SURGE TANK.  
 CLOSE FAILSAFE.  
 OPEN MASTER VALVE AND PUMP TO 2650 PSI.  
 OPEN LUBRICATOR VALVE.  
 KILL THE WELL BY BULLHEADING.

# FLOPETROL

DIVISION : NSD  
BASE : NWB  
REPORT N°: 83/2301/30

## Well Testing Report Annexes —

Client : STATOIL  
Field : GULLFAKS      Well : 34/10-7  
Zone : COOK SAND      Date : 07.07.83 - 08.07.83

## INDEX of ANNEXES

- 1** - BOTTOM HOLE PRESSURE AND TEMPERATURE MEASUREMENT -
  - 1.1 - B. H. guge calibration -
  - 1.2 - B. H. pressure calculation -
  - 1.3 - B. H. temperature calculation -
  
- 2** - LIQUID PRODUCTION RATE MEASUREMENT -
  - 2.1 - Measurements with tank -
  - 2.2 - Measurements with meter -
  
- 3** - GAS PRODUCTION RATE MEASUREMENT -
  
- 4** - SAMPLING SHEETS -
  - 4.1 - Bottom hole sampling -
  - 4.2 - Surface sampling -
  
- 5** - CHARTS AND MISCELLANEOUS -

**-LIQUID PRODUCTION RATE MEASUREMENT -****2.1 - MEASUREMENT WITH TANK -**

$$V_o = V \times K \times (1 - BSW)$$

$V_o$  : Net oil volume at 60° F and atmospheric pressure.

$V$  : Gross oil volume measured by tank gauging.

$K$  : Volume correction factor to be applied between the tank temperature during gauging and 60° F.

BSW : Basic sediments and water.

**2.2 - MEASUREMENT WITH METER -**

a) Shrinkage factor is measured by shrinkage tester.

$$V_o = V_s \times f \times (1 - Shr) \times K \times (1 - BSW)$$

$V_o$  : Net oil volume at 60° F and atmospheric pressure.

$V_s$  : Gross oil volume measured by meter under separator conditions.

$f$  : Meter correction factor =  $\frac{\text{Volume measured in tank}}{\text{Volume measured by meter}}$

$Shr$  : Percentage of oil volume reduction between separator and tank conditions, reported to oil volume at separator conditions.

$K$  : Volume correction factor to be applied between the finale temperature during shrinkage measurement and 60° F.

BSW : Basic sediments and water.

b) Shrinkage factor is measured with tank.

$$V_o = V_s \times (1 - Shr') \times K \times (1 - BSW)$$

$V_o$ ,  $V_s$ ,  $K$  and  $BSW$  : Same meaning as in a).

$(1 - Shr')$  : Shrinkage factor including meter correction factor.

Date - Time		Gauge graduation CM	Tank volume		STO Gravity			K	BSW %	Net volume of STO V <sub>o</sub> M <sup>3</sup>	Net STO product. rate M <sup>3</sup> /day	Cumulative production M <sup>3</sup>	Units
Time HRS/MIN	Interval MIN		Volume V M <sup>3</sup>	Temp. °C	Gravity	Temp.	Grav. 60°F SG						
<b>FLOPETROL</b> Client : <u>STATOIL</u> - OIL PRODUCTION RATE - Field : <u>GULLFAKS</u> - MEASUREMENT WITH TANK - Well : <u>34/10-7</u>													
Base : <u>NWB</u>		Section : Annex <b>2.1</b>											
		Page : <u>30</u>											
		Report N° : <u>83/2301/30</u>											
06:29		13											
06:45		29	0.448	22			.823	.9940	0	0.445	40.05	0.445	
06:55	10	40.5	0.32	22			.823	.9940	0	0.320	46.09	0.765	
07:05	10	53	0.35	24			.823	.9930	0	0.348	50.05	1.113	
07:15	10	66	0.36	25			.823	.9920	0	0.361	52.00	1.474	
07:25	10	79	0.36	25			.823	.9920	0	0.361	52.00	1.835	
07:26	1	SHUT IN AT LUBRICATOR VALVE.											
08:27	1	OPEN UP WELL THROUGH 8/64" FIXED CHOKE ON HEATER.											
08:27	0	10.5		32			.823	.9856	0				
08:35	8	23.5	0.364	32			.823	.9856	0	0.359	64.58	2.194	
08:45	10	35	0.686	32			.823	.9856	0	0.676	54.09	2.870	
09:00	15	52	0.476	32			.823	.9856	0	0.477	45.79	3.347	
09:15	15	69	0.476	32			.823	.9856	0	0.477	45.79	3.824	
09:30	15	87	0.504	30			.823	.9876	0	0.498	47.78	4.322	
TANK GRADUATION 28 L/CM							Tested interval : <u>COOK SAND</u>						
							Perforations : <u>1807 - 1821 MTRS</u>						





# FLOPETROL

Client : STATOIL  
 Field : GULLFAKS  
 Well : 34/10-7

Base : NWB

- OIL PRODUCTION RATE -  
 - MEASUREMENT WITH METER -

Section : Annex **2.2**  
 Page : 32  
 Report No. : 83/2301/30

Date - time Interval	Meter reading	Vs	BSW	V <sup>o</sup> *	1 - Shr		Oil Gravity		K	Net volume of STO: Vo	Net STO product. rate	Cumulative production	
					Factor	Temp.	Gravity	Temp.					Grav. 60°F
HR/MIN	MIN	BBLS	%	BBLS	OF	SG	OF	SG		BBLS	M <sup>3</sup> /day	M <sup>3</sup>	Units
12:59													
13:19													
13:55													
14:30	2748.5											37.0	
14:45	2810.2	61.7	0	61.7	0.92	0.825	75	.8302	1.000	56.8	866.4	46.0	
15:00	2871.5	61.3	0	61.3	0.92	0.825	75	.8302	1.000	56.4	860.8	55.0	
15:15	2932.6	61.1	0	61.1	0.92	0.825	75	.8302	1.000	56.2	858.0	63.9	
15:30	2993.4	60.8	0	60.8	0.92	0.825	75	.8302	1.000	55.9	853.8	72.8	
15:45	3054.4	61.0	0	56.17	88	0.824	78	.8302	.9869	55.4	846.2	81.6	
16:00	3114.7	60.3	TRACE	55.53	88	0.824	78	.8302	.9869	54.8	836.5	90.3	
16:15	3175.2	60.5	TRACE	55.71	88	0.824	78	.8302	.9869	55.0	839.3	99.1	
16:30	3235.6	60.4	TRACE	55.62	88	0.824	78	.8302	.9869	54.9	837.9	107.8	
16:45	3296.2	60.6	TRACE	55.81	88	0.8235	82	.8311	.9870	55.1	840.7	116.6	
17:00	3358.2	62.0	TRACE	57.09	88	0.8235	82	.8311	.9870	56.4	860.1	125.5	

Shrinkage factor measured by Shrinkage tester  Tank   
 \* V<sup>o</sup> = Vs x f x (1 - BSW) = Net oil volume at separator conditions. f = 0.9209  
 Tested interval : COOK SAND  
 Perforations : 1807 - 1821 METERS



## - GAS PRODUCTION RATE MEASUREMENT by orifice meter -

Reference is made to the rules and coefficients given in AGA gas measurement Committee Report No.3 for orifice metering.

### a) EQUATIONS -

$$Q = C \sqrt{h_w \times P_f}$$

- Q** : Production rate at reference conditions.  
**C** : Orifice flow coefficient.  
**h<sub>w</sub>** : Differential pressure in inches of water.  
**P<sub>f</sub>** : Flowing pressure in psia.

$$C = F_u \times F_b \times F_g \times Y \times F_{tf} \times F_{pv}$$

- F<sub>u</sub>** : Unit conversion factor in desired reference conditions.  
**F<sub>b</sub>** : Basic orifice factor ( Q in Cu. ft / hour ).  
**F<sub>g</sub>** : Specific gravity factor.  
**Y** : Expansion factor  
**F<sub>tf</sub>** : Flowing temperature factor.  
**F<sub>pv</sub>** : Supercompressibility factor ( estimated ).

### Remarks

**F<sub>m</sub>**: Manometer factor is equal one since only bellows type meters are used.  
**F<sub>r</sub>** : Reynolds factor is considered to be one.

TABLE OF F <sub>u</sub> FACTOR				
UNITS	REFERENCE CONDITIONS			
	60°F 14.73 psia	0°C 760mmHg*	15°C 760mmHg *	15°C 750mmHg *
Cu.ft / hour	1	0.9483	1.0004	1.0137
Cu.ft / day	24	22.760	24.009	24.329
m <sup>3</sup> / hour	0.02832	0.02685	0.02833	0.02870
m <sup>3</sup> / day	0.6796	0.6445	0.6799	0.6889

\* Mercury at 32°F

### b) METER DATA -

Meter type : DANIEL SR. Flange taps - P<sub>f</sub> taken down/up stream  
 Flow recorder type: ITT BARTON ID of meter tube : 5.761"

### c) SPECIFIC GRAVITY SOURCE -

Sampling point : GAS OUTLET SEPARATOR Gravimeter type: KIMRAY

### d) SUPERCOMPRESSIBILITY FACTOR F<sub>pv</sub> -

All coefficients are taken from AGA NX 19 manual for natural gas free of air, CO<sub>2</sub> and H<sub>2</sub>S. More accurate values could only be determined by laboratory measurement.

# FLOPETROL

Client : STATOIL

## - GAS PRODUCT. RATE MEASUREMENT -

Section : ANNEX 3

Field : GULLFAKS  
Well : 34/10-7

Page : 35  
Report N : 83/2301/30

Base : NWB

DATE - TIME Interval HRS/MIN	Flowing Temp OF	P <sub>f</sub> absolute psia	h <sub>w</sub> "of wat	$\sqrt{h_w \times P_f}$	Orifice diameter Inches	Gas gravity (air=1)	F <sub>b</sub>	F <sub>g</sub>	Y	F <sub>tf</sub>	F <sub>pv</sub>	C	Gas production rate Q MM <sup>3</sup> /DAY	Cumulative Production MM <sup>3</sup>
07.07.83														
12:59							OPEN WELL ON 32/64" FIXED CHOKE							
13:19							OIL AT SURFACE.							
13:55							SWITCH FLOW THROUGH SEPARATOR.						APPROX. FLOW	5.00
14:30	97	395	68	163.890	2.000	0.670	816.13	1.2217	1.0011	0.9662	1.0318	676	110.9	6.16
14:45	98	395	68	163.890	2.000	0.670	816.13	1.2217	1.0011	0.9653	1.0316	676	110.7	7.31
15:00	99	405	68	165.952	2.000	0.676	816.13	1.2163	1.0011	0.9645	1.0329	673	111.7	8.48
15:15	100	400	69	166.132	2.000	0.676	816.13	1.2163	1.0011	0.9636	1.0322	672	111.6	9.64
15:30	102	400	70	167.332	2.000	0.676	816.13	1.2163	1.0011	0.9619	1.0318	670	112.2	10.81
15:45	102	400	70	167.332	2.000	0.581	816.13	1.2118	1.0011	0.9619	1.0323	668	111.8	11.97
16:00	102	400	70	167.332	2.000	0.581	816.13	1.2118	1.0011	0.9619	1.0323	668	111.8	13.14
16:15	104	400	70	167.332	2.000	0.681	816.13	1.2118	1.0011	0.9602	1.0319	667	111.6	14.30
16:30	105	400	70	167.332	2.000	0.681	816.13	1.2118	1.0011	0.9594	1.0317	666	111.5	15.46
16:45	107	400	70	167.332	2.000	0.681	816.13	1.2118	1.0011	0.9577	1.0313	665	111.2	16.62
17:00	108	400	70	167.332	2.000	0.680	816.13	1.2127	1.0011	0.9560	1.0310	664	111.2	17.78
17:15	108	400	70	167.332	2.000	0.680	816.13	1.2127	1.0011	0.9560	1.0310	664	111.2	18.94

F<sub>u</sub> = 0.6799

Recorder ranges P<sub>f</sub> = 0-1500 PSIG  
h<sub>w</sub> = 0-200" H<sub>2</sub>O Temp = 0-300°F

TESTED INTERVAL : COOK SAND  
PERFORATIONS : 1807 - 1821 METERS



# FLOPETROL

Client : STATOIL

Section: ANNEX 4.1

Base : NWB

Field : GULLFAKS

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Well : 34/10-7

Report No: 83/2301/3

## BOTTOM HOLE SAMPLING

Date of sampling : 08.07.83 Service order : \_\_\_\_\_ Sampling No : 1  
Sample nature : OIL Sampling depth : \_\_\_\_\_

### A - RESERVOIR AND WELL CHARACTERISTICS

Producing zone : COOK SAND Perforations : 1807-1821M Sampling interval : SAME

Depth origin : RKB Tubing Dia : 3 1/2 Phd. Casing Dia : 9 5/8"  
Surface elevation : 225 mtr Shoe : \_\_\_\_\_ Shoe : \_\_\_\_\_

Bottom hole static conditions	Initial pressure : 313.04BAR at depth : 1788.67M date : 08.07.83
	Latest pressure measured : 312.97BAR at depth : 1788.67M date : 08.07.83
	Temperature : 71.36°C at depth : 1788.67M date : 08.07.83

### B - SAMPLING AND TRANSFER CHARACTERISTICS

Sampler Type and No : SCHLUMBERGER BHS 19 Capacity : 600 cc

Time at which sample was taken : 11:10  
Test duration | Running start : 07:49  
| Pulling end : 12:18
 Well shut in since : \_\_\_\_\_  
 Well flowing through choke : 12/64" Time elapsed since closing well : \_\_\_\_\_  
 Production duration through this choke : 2.47 HRS

Production cond during sampling or before closing	Bottom hole pressure: 312.97BAR	Well head pressure: 2701 PSI	Separator pressure: _____
	ft temp : 71.45°C	temp : 61°F	temp : _____
	Flow rates: NA SCFD	WLR : 0	Specific gravity Gas (air 1): NA
	46.66M) 3D BOPD	Prod GOR : NA	Oil : .823

Opening pressure of the first valve (if necessary) : \_\_\_\_\_

Estimated bubble point under bottom hole conditions :  
Temp : \_\_\_\_\_ Pressure : \_\_\_\_\_Transfer conditions:  By gravity  By pumping  
Temp : 68°F Pressure : AMBIENT  
Hg collected at transferring end : NA  
volume remaining in the shipping bottle : 8ccFinal conditions of shipping bottle after decompression :  
Temp : 68°F Pressure : 2380PSI  
Hg volume withdrawn for bottle decompression : 20cc

### C - IDENTIFICATION OF THE SAMPLE

Shipping bottle No : 22024 sent on : 09.07.83 by : STATOIL Shipping order No : \_\_\_\_\_  
Addressee : STATOIL

Coupled with

Bottom hole samples No

8151/16

Surface samples No

### D - REMARKS

Visa Chief operator

WELL WAS FLOWED TO TANK

A. Engebakken

No DOP 128

# FLOPETROL

Client : STATOILSection : **ANNEX 4.1**Base : NWBField : GULLFAKS  
Well : 34/10-7Page : 38  
Report N°: 83/2301/3

## - BOTTOM HOLE SAMPLING -

Date of sampling : 08.07.83 Service order : \_\_\_\_\_ Sampling No : 2  
Sample nature : OIL Sampling depth : \_\_\_\_\_Producing zone : A - RESERVOIR AND WELL CHARACTERISTICS -  
COOK SAND Perforations : 1807-1821M Sampling interval : SAMEDepth origin : RKB Tubing Dia : 3 1/2 Phd. Casing Dia : 9 5/8"  
Surface elevation : 225 mtr Shoe : \_\_\_\_\_ Shoe : \_\_\_\_\_

Bottom hole static conditions	Initial pressure	: <u>313.04BAR</u>	at depth:	<u>1788.67M</u>	date:	<u>08.07.83</u>
	Latest pressure measured	: <u>312.97BAR</u>	at depth:	<u>1788.67M</u>	date:	<u>08.07.83</u>
	Temperature	: <u>71.36°C</u>	at depth:	<u>1788.67M</u>	date:	<u>08.07.83</u>

## B - SAMPLING AND TRANSFER CHARACTERISTICS

Sampler Type and No . SCHLUMBERGER BHS 44 Capacity : 600 ccTime at which sample was taken : 11:13 Test duration | Running start : 07:49  
| Pulling end : 12:18
 Well shut in since : NEW WELL Time elapsed since closing well : \_\_\_\_\_  
 Well flowing through choke : 12/64" Production duration through this choke : 2.50 HRS

Production cond during sampling or before closing	Bottom hole pressure:	<u>312. BAR</u>	Well head pressure:	<u>2701 PSI</u>	Separator pressure:	<u>NA</u>
	_____ ft temp : <u>71.45°C</u>		temp : <u>61°F</u>		temp : <u>NA</u>	
	Flow rates:	<u>NA</u> SCFD	WLR :	<u>0</u>	Specific gravity	Gas (air 1): <u>NA</u>
		<u>46.66M<sup>3</sup>D</u> BOPD	Prod.GOR :	<u>NA</u>	Oil :	<u>.823</u>

Opening pressure of the first valve (if necessary) : NAEstimated bubble point under bottom hole conditions :  
Temp : 71°C Pressure : 3000 psiTransfer conditions.  By gravity  By pumping  
Temp : 68°F Pressure : AMBIENT Hg collected at transferring end : NA  
volume remaining in the shipping bottle : 8ccFinal conditions of shipping bottle after decompression : Hg volume withdrawn for bottle decompression :  
Temp : 63°F Pressure : 2360PSI 20cc

## C - IDENTIFICATION OF THE SAMPLE

Shipping bottle No : 8151/16 sent on : 09.07.83 by : STATOIL Shipping order No : \_\_\_\_\_  
Addressee : STATOIL

Coupled with

Bottom hole samples No

Surface samples No

	LIQUID	GAS
Bottom hole samples No	<u>22024</u>	
Surface samples No		

## D - REMARKS

Visa Chief operator

WELL WAS FLOWED TO TANK

A. Engebakken



# FLOPETROL

Client : STATOIL

Section: **ANNEX 42**

Base : NWB

Field : GULLEAKS

Page : 39

Well : 34/10-7

Report No: 2301/30

## - SURFACE SAMPLING -

Date of sampling : 07.07.83 Service order : \_\_\_\_\_ Sampling No : 1  
 Sample nature : OIL Sampling point : SEPARATOR SIGHT GLASS

### A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone : COOK SAND Perforations : 1807-1821 METERS Sampling interval : \_\_\_\_\_  
 Depth origin : RKB Tubing Dia : 3 1/2" CS Hd. Casing Dia : 7" LINER  
 Surface elevation : 225 METER Shoe : \_\_\_\_\_ Shoe : \_\_\_\_\_

Bottom hole static conditions	Initial pressure : _____ at depth : _____ date : _____
	Latest pressure measured : _____ at depth : _____ date : _____
	Temperature : _____ at depth : _____ date : _____

### B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken : 18:28 Time elapsed since stabilisation : 15:30

Bottom hole dynamic conditions	Choke size : <u>32/64"</u> Since : <u>12:59</u> Well head pressure : <u>2303 PSIG</u> Well head temp : <u>123°F</u>
	Bottom hole pressure : _____ at depth : _____ date : _____
	Bottom hole temp : _____ at depth : _____ date : _____

Flow measurement of sampled gas - Gravity (air 1) : 0.680 Factor Fpv =  $\frac{1}{\sqrt{Z}}$  : 1.0299  
 Values used for calculations :

Separator	Pressure : <u>385</u> PSIG	Rates - Gas : <u>111.2</u> MM <sup>3</sup> /D	GOR : <u>116.6</u> (separator cond)
	Temp : <u>108</u> °F	Oil (separator cond) : <u>935.7</u> M <sup>3</sup> /D	

Stock tank	Atmosphere : _____ mmHg - _____ °F	Oil at 60 °F : _____ BOPD
	Tank temperature : _____ °F	<input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> b

BSW : 0 % WLR : 0 %

Transferring fluid : MERCURY Transfer duration : 35 min.

Final conditions of the shipping bottle : 20cc LEFT  
 Pressure : 165 PSIG Temp : 64°F

### C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : 82121021 sent on : \_\_\_\_\_ by : \_\_\_\_\_ Shipping order No : \_\_\_\_\_  
 Addressee : \_\_\_\_\_

Coupled with	LIQUID	GAS
Bottom hole samples No	_____	_____
Surface samples No	<u>83021216</u>	<u>A-14662</u>

### Measurement conditions.

Tank .  Meter .  Dump .  
 - Corrected with shrinkage tester.  - Corrected with tank .

### D - REMARKS -

Visa Chief Operator

SHRINKAGE ON TESTER = 4%  
 60cc GAS CAP  
 READINGS TAKEN 18:30

# FLOPETROL

Client : STATOILSection: ANNEX **42**Base : NWBField : GULLFAKSPage : 40Well : 34/10-7Report N° 83/2301/30

## - SURFACE SAMPLING -

Date of sampling : 07.07.83 Service order : \_\_\_\_\_ Sampling No : 2  
 Sample nature : OIL Sampling point : SEPARATOR SIGHT GLASS

### A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone : COOK SAND Perforations : 1807-1821 METER Sampling interval : \_\_\_\_\_  
 Depth origin : RKB Tubing Dia : 3 1/2" CS Hd. Casing Dia : 7" LINER  
 Surface elevation : 225 METER Shoe : \_\_\_\_\_ Shoe : \_\_\_\_\_

Bottom hole static conditions	Initial pressure : _____ at depth : _____ date : _____
	Latest pressure measured : _____ at depth : _____ date : _____
	Temperature : _____ at depth : _____ date : _____

### B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken : 18:28 Time elapsed since stabilisation : 15:30

Bottom hole dynamic conditions	Choke size : <u>32/64"</u> since : <u>12:59</u> Well head pressure : <u>2303 PSIG</u> Well head temp : <u>123°F</u>
	Bottom hole pressure : _____ at depth : _____ date : _____
	Bottom hole temp : _____ at depth : _____ date : _____

Flow measurement of sampled gas - Gravity (air 1) : 0.680 Factor  $F_{pv} = \frac{1}{\sqrt{Z}}$  : 1.0299  
 Values used for calculations : \_\_\_\_\_

 $F_b, F_g, Y, F_{ff}$ 

Separator	Pressure : <u>385 PSIG</u> Rates - Gas : <u>111.2 MM<sup>3</sup>/D</u> GOR : <u>116.6</u>
	Temp : <u>108 °F</u> Oil (separator cond) : <u>935.7 M<sup>3</sup>/D</u> BOPD <input checked="" type="checkbox"/> (separator cond)

Stock tank	Atmosphere : _____ mmHg. _____ °F Oil at 60 °F : _____ BOPD
	Tank temperature : _____ °F <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> b

BSW : 0 % WLR : 0 %Transferring fluid : WATER Transfer duration : 33 min.

Final conditions of the shipping bottle : 0cc W LEFT  
 Pressure : \_\_\_\_\_ Temp : 64°F

### C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : 83021216 sent on : \_\_\_\_\_ by : \_\_\_\_\_ Shipping order No : \_\_\_\_\_  
Addressee : \_\_\_\_\_

Coupled with

Bottom hole samples No

Surface samples No

	LIQUID	GAS
Bottom hole samples No	_____	_____
Surface samples No	<u>82121021</u>	<u>A-14662</u>

Measurement conditions

Tank .  Meter .  Dump .  
 - Corrected with shrinkage tester.  - Corrected with tank .

### D - REMARKS -

v sa Chief Operator

SHRINKAGE ON TESTER = 4%  
 NO WATER LEFT IN BOTTLE. 100cc GAS CAP  
 READINGS TAKEN 18:30

10 DOP 127

# FLOPETROL

 Client : STATOIL

 Section: **ANNEX 42**

 Base : NWB

 Field : GULLFAKS

Page : 41

 Well : 34/10-7

 Report N° 83/2301/30

## - SURFACE SAMPLING -

 Date of sampling : 07.07.83    Service order : \_\_\_\_\_    Sampling No : 3  
 Sample nature : GAS    Sampling point : TOP SEPARATOR GAS OUTLET

### A - RESERVOIR AND WELL CHARACTERISTICS -

 Producing zone : COOK SAND    Perforations : 1807-1821 METERS    Sampling interval : \_\_\_\_\_

 Depth origin : RKB    Tubing Dia : 3 1/2" CS Hd.    Casing Dia : 7" LINER  
 Surface elevation : 225 METER    Shoe : \_\_\_\_\_    Shoe : \_\_\_\_\_

Bottom hole static conditions	Initial pressure : _____ at depth : _____ date : _____	Latest pressure measured : _____ at depth : _____ date : _____
	Temperature : _____ at depth : _____ date : _____	

### B - MEASUREMENT AND SAMPLING CONDITIONS -

 Time at which sample was taken : 18:28    Time elapsed since stabilisation : 15:30

Bottom hole dynamic conditions	Choke size : <u>32/64"</u> since : <u>12:59</u>	Well head pressure : <u>2303 PSIG</u>	Well head temp : <u>123°F</u>
	Bottom hole pressure : _____ at depth : _____ date : _____	Bottom hole temp : _____ at depth : _____ date : _____	

 Flow measurement of sampled gas - Gravity (air 1) : 0.680    Factor  $F_{pv} = \frac{1}{\sqrt{Z}}$  : 1.0299  
 Values used for calculations :

Separator	Pressure : <u>385 PSIG</u>	Rates - Gas : <u>111.2 MM<sup>3</sup>/D</u>	GOR : <u>116.6</u>
	Temp : <u>108 °F</u>	Oil (separator cond) : <u>935.7 MM<sup>3</sup>/D</u>	(separator cond) <input checked="" type="checkbox"/> B

Stock tank	Atmosphere : _____ mmHg. _____ °F	Oil at 60 °F : _____ BOPD
	Tank temperature : _____ °F	<input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> b

BSW : \_\_\_\_\_ %    WLR : \_\_\_\_\_ %

 Transferring fluid : \_\_\_\_\_    Transfer duration : 35 min.

Final conditions of the shipping bottle : Pressure : <u>385 PSIG</u> Temp : <u>64°F</u>	
--	--

### C - IDENTIFICATION OF THE SAMPLE -

 Shipping bottle No : A-14662 sent on : \_\_\_\_\_ by : \_\_\_\_\_    Shipping order No : \_\_\_\_\_  
 Addressee : \_\_\_\_\_

Coupled with	LIQUID	GAS
Bottom hole samples No	_____	_____
Surface samples No	<u>82302126</u>	<u>82121021</u>

Measurement conditions,  Tank,  Meter,  Dump.  
 - Corrected with shrinkage tester.     - Corrected with tank.

### D - REMARKS -

Visé Chief Operator

READINGS TAKEN 18:30

# FLOPETROL

Client : STATOILSection: ANNEX **42**Base : NWBField : GULLEAKSPage : 42Well : 34/10-7Report No: 83/2301/30

## - SURFACE SAMPLING -

Date of sampling : 07.07.83 Service order : \_\_\_\_\_ Sampling No : 4  
Sample nature : OIL Sampling point : SEPARATOR SIGHT GLASS

### A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone : COOK SAND Perforations : 1807-1821 METER Sampling interval : \_\_\_\_\_Depth origin : RKB Tubing Dia : 3 1/2" CS Hd. Casing Dia : 7" LINER  
Surface elevation : 225 METER Shoe : \_\_\_\_\_ Shoe : \_\_\_\_\_

Bottom hole static conditions	Initial pressure : _____ at depth : _____ date : _____
	Latest pressure measured : _____ at depth : _____ date : _____
	Temperature : _____ at depth : _____ date : _____

### B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken : 19:25 Time elapsed since stabilisation : 15:30

Bottom hole dynamic conditions	Choke size : <u>32/64"</u> since : <u>12:59</u> Well head pressure : <u>2303 PSIG</u> Well head temp : <u>123°F</u>
	Bottom hole pressure : _____ at depth : _____ date : _____
	Bottom hole temp : _____ at depth : _____ date : _____

Flow measurement of sampled gas - Gravity (air 1) : 0.680 Factor Fpv =  $\frac{1}{\sqrt{Z}}$  : 1.0299  
Values used for calculations :

Separator	Pressure : <u>385 PSIG</u> Rates - Gas : <u>110.5 MM<sup>3</sup>/D</u> GOR : <u>121.1</u>
	Temp : <u>108 °F</u> Oil (separator cond) : <u>912.8M<sup>3</sup>/D</u> (separator cond)

Stock tank	Atmosphere : _____ mmHg. _____ °F Oil at 60 °F : _____ BOPD
	Tank temperature : _____ °F

BSW : \_\_\_\_\_ @/c WLR : 0 %Transferring fluid : MERCURY Transfer duration : 30 min.Final conditions of the shipping bottle : 20cc Hg LEFT.  
Pressure : 165PSIG Temp : 63°F

### C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : 8212715 sent on : \_\_\_\_\_ by : \_\_\_\_\_ Shipping order No : \_\_\_\_\_  
Addressee : \_\_\_\_\_

Coupled with	LIQUID	GAS
Bottom hole samples No	_____	_____
Surface samples No	<u>8302802</u>	<u>A-14669</u>

Measurement conditions,

 Tank .       Meter .       Damp .  
 Corrected with shrinkage tester.     Corrected with tank .

### D - REMARKS -

Signature of Operator

SHRINKAGE ON TESTER = 4%  
READINGS TAKEN 19:30  
60cc GAS CAP.

# FLOPETROL

Client : STATOILSection: **ANNEX 42**Base : NWBField : GULLFAKSPage : 43Well : 34/10-7Report N° 83/2301/30

## - SURFACE SAMPLING -

Date of sampling : 07.07.83 Service order : \_\_\_\_\_ Sampling No : 5  
Sample nature : OIL Sampling point : SEPARATOR SIGHT GLASS

### A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone : COOK SAND Perforations : 1807-1821 METER Sampling interval : \_\_\_\_\_Depth origin : RKB Tubing Dia : 3 1/2" CS Hd. Casing Dia : 7" LINER  
Surface elevation : 225 METER Shoe : \_\_\_\_\_ Shoe : \_\_\_\_\_

<u>Bottom hole static conditions</u>	Initial pressure : _____ at depth : _____ date : _____
	Latest pressure measured : _____ at depth : _____ date : _____
	Temperature : _____ at depth : _____ date : _____

### B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken : 19:25 Time elapsed since stabilisation : 15:30

<u>Bottom hole dynamic conditions</u>	Choke size : <u>32/64"</u> since : <u>12:59</u> Well head pressure : <u>2303 PSIG</u> Well head temp : <u>123°F</u>
	Bottom hole pressure : _____ at depth : _____ date : _____
	Bottom hole temp : _____ at depth : _____ date : _____

Flow measurement of sampled gas - Gravity (air 1) : 0.680 Factor  $F_{pv} = \frac{1}{\sqrt{Z}}$  : 1.0299  
Values used for calculations : $F_b, F_g, Y, F_{tf}$ 

<u>Separator</u>	Pressure : <u>385 PSIG</u> Rates - Gas : <u>110.5 MM<sup>3</sup>/D</u> GOR : <u>121.1</u>
	Temp : <u>108 °F</u> Oil (separator cond) : <u>912.8M<sup>3</sup>/D</u> BOPD <input checked="" type="checkbox"/> B 'separator cond)

<u>Stock tank</u>	Atmosphere : _____ mmHg - _____ °F Oil at 60 °F : _____ BOPD
	Tank temperature : _____ °F <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> B

BSW : \_\_\_\_\_ % WLR : 0 %Transferring fluid : WATER Transfer duration : 26 min.Final conditions of the shipping bottle : 0cc WATER LEFT.  
Pressure : \_\_\_\_\_ Temp : 63°F

### C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : 8302802 sent on : \_\_\_\_\_ by : \_\_\_\_\_ Shipping order No : \_\_\_\_\_  
Addressee : \_\_\_\_\_

<u>Coupled with</u>	LIQUID	GAS
<u>Bottom hole samples No</u>	_____	_____
<u>Surface samples No</u>	<u>8212715</u>	<u>A-14669</u>

### Measurement conditions

 Tank .  Meter .  D. imp .  
 Corrected with shrinkage tester .  Corrected with tank .

### D - REMARKS -

. sa Chief Operator

SHRINKAGE ON TESTER = 4%  
READINGS TAKEN 19:30  
NO WATER LEFT IN BOTTLE. 100cc GAS CAP.

# FLOPETROL

Client : STATOILSection: ANNEX **42**Base : NWBField : GULLFAKSPage : 44  
Report N83/2301/30Well : 34/10-7

## - SURFACE SAMPLING -

Date of sampling : 07.07.83 Service order : \_\_\_\_\_ Sampling No : 6  
Sample nature : GAS Sampling point : TOP SEPARATOR GAS OUTLET

### A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone : COOK SAND Perforations : 1807-1821 METER Sampling interval : \_\_\_\_\_  
Depth origin : RKB Tubing Dia : 3 1/2" CS Hd. Casing Dia : 7" LINER  
Surface elevation : 225 METER Shoe : \_\_\_\_\_ Shoe : \_\_\_\_\_

Bottom hole static conditions	Initial pressure : _____ at depth : _____ date : _____
	Latest pressure measured : _____ at depth : _____ date : _____
	Temperature : _____ at depth : _____ date : _____

### B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken : 19:25 Time elapsed since stabilisation : 15:30

Bottom hole dynamic conditions	Choke size : <u>32/64"</u> since : <u>12:59</u> Well head pressure : <u>2303 PSIG</u> Well head temp : <u>123°F</u>
	Bottom hole pressure : _____ at depth : _____ date : _____
	Bottom hole temp : _____ at depth : _____ date : _____

Flow measurement of sampled gas - Gravity (air 1) : 0.680 Factor  $F_{pv} = \frac{1}{\sqrt{Z}}$  : 1.0299  
Values used for calculations :

Separator	Pressure : <u>385 PSIG</u> Rates - Gas : <u>110.5 MM<sup>3</sup>/D</u> GOR : <u>121.1</u>
	Temp : <u>108 °F</u> Oil (separator cond) : <u>912.8M<sup>3</sup>/D</u> BOPB <input checked="" type="checkbox"/> separator cond )

Stock tank	Atmosphere : _____ mmHg - _____ °F Oil at 60 °F : _____ BOPD
	Tank temperature : _____ °F <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

BSW : \_\_\_\_\_ % WLR : \_\_\_\_\_ %

Transferring fluid : \_\_\_\_\_ Transfer duration : 30 min.Final conditions of the shipping bottle : \_\_\_\_\_  
Pressure : 385 PSIG Temp : 63°F

### C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : A-14669 sent on : \_\_\_\_\_ by : \_\_\_\_\_ Shipping order No : \_\_\_\_\_  
Addressee : \_\_\_\_\_

Coupled with

Bottom hole samples No

Surface samples No

	LIQUID	GAS
Bottom hole samples No	_____	_____
Surface samples No	<u>8302802</u>	<u>8212715</u>

Measurement conditions,

 Tank .  Meter .  D. mp .  
 - Corrected with shrinkage tester.  - Corrected with tank .

### D - REMARKS -

READINGS TAKEN 19:30

vs3 Chief Operator

# FLOPETROL

Client : STATOILSection: ANNEX **42**Base : NWBField : GULLEAKSPage : 45  
Report N° 83/2301/30Well : 34/10-7

## - SURFACE SAMPLING -

Date of sampling : 07.07.83 Service order : \_\_\_\_\_ Sampling No : 7  
Sample nature : OIL Sampling point : SEPARATOR SIGHT GLASS

### A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone : COOK SAND Perforations : 1807-1821 METERS Sampling interval : \_\_\_\_\_Depth origin : RKB Tubing Dia : 3 1/2" CS Hd. Casing Dia : 7" LINER  
Surface elevation : 225 METER Shoe : \_\_\_\_\_ Shoe : \_\_\_\_\_Bottom hole static conditions  
Initial pressure : \_\_\_\_\_ at depth : \_\_\_\_\_ date : \_\_\_\_\_  
Latest pressure measured : \_\_\_\_\_ at depth : \_\_\_\_\_ date : \_\_\_\_\_  
Temperature : \_\_\_\_\_ at depth : \_\_\_\_\_ date : \_\_\_\_\_

### B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken : 20:21 Time elapsed since stabilisation : 15:30Bottom hole dynamic conditions  
Choke size : 32/64" Time : 12:59 Well head pressure : 2303 PSIG Well head temp : 125°F  
Bottom hole pressure : \_\_\_\_\_ at depth : \_\_\_\_\_ date : \_\_\_\_\_  
Bottom hole temp : \_\_\_\_\_ at depth : \_\_\_\_\_ date : \_\_\_\_\_Flow measurement of sampled gas - Gravity (air 1) : 0.680 Factor  $F_{pv} = \frac{1}{\sqrt{Z}}$  : 1.0299  
Values used for calculations :Separator  
Pressure : 385 PSIG Rates - Gas : 110.5 MM<sup>3</sup>/D GOR : 121.2  
Temp : 108 °F Oil (separator cond) : 912.0 MM<sup>3</sup>/D (separator cond)Stock tank  
Atmosphere : \_\_\_\_\_ mmHg. \_\_\_\_\_ °F Oil at 60 °F : \_\_\_\_\_ BOPD  
Tank temperature : \_\_\_\_\_ °F

BSW : \_\_\_\_\_ % WLR : \_\_\_\_\_ %

Transferring fluid : MERCURY Transfer duration : 30 min.Final conditions of the shipping bottle : 30cc Hg LEFT.  
Pressure : 170 PSIG Temp : 63°F

### C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : 83021222 sent on : \_\_\_\_\_ by : \_\_\_\_\_ Shipping order No : \_\_\_\_\_  
Addressee : \_\_\_\_\_

Coupled with	LIQUID	GAS
Bottom hole samples No	_____	_____
Surface samples No	<u>83021321</u>	<u>A.14419</u>

Measurement conditions  
 Tank.  Meter.  Comp.  
 Corrected with shrinkage tester.  Corrected with tank.

### D - REMARKS -

READINGS TAKEN 20:30  
SHRINKAGE ON TESTER = 4%  
50cc GAS CAP\_\_\_\_\_  
Chief Operator

0 DOP 127

# FLOPETROL

Client : STATOILSection: ANNEX 42Base : NWBField : GULLFAKSWell : 34/10-7Page : 46Report N° 83/2301/30

## - SURFACE SAMPLING -

Date of sampling : 07.07.83 Service order : \_\_\_\_\_ Sampling No : 8  
 Sample nature : OIL Sampling point : SEPARATOR SIGHT GLASS

### A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone : COOK SAND Perforations : 1807-1821 METER Sampling interval : \_\_\_\_\_  
 Depth origin : RKB Tubing Dia : 3 1/2" CS Hd. Casing Dia : 7" LINER  
 Surface elevation : 225 METER Shoe : \_\_\_\_\_ Shoe : \_\_\_\_\_

Bottom hole static conditions  
 Initial pressure : \_\_\_\_\_ at depth : \_\_\_\_\_ date : \_\_\_\_\_  
 Latest pressure measured : \_\_\_\_\_ at depth : \_\_\_\_\_ date : \_\_\_\_\_  
 Temperature : \_\_\_\_\_ at depth : \_\_\_\_\_ date : \_\_\_\_\_

### B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken : 20:21 Time elapsed since stabilisation : 15:30

Bottom hole dynamic conditions  
 Choke size : 32/64" since : 12:50 Well head pressure : 2303 PSIG Well head temp : 125°F  
 Bottom hole pressure : \_\_\_\_\_ at depth : \_\_\_\_\_ date : \_\_\_\_\_  
 Bottom hole temp : \_\_\_\_\_ at depth : \_\_\_\_\_ date : \_\_\_\_\_

Flow measurement of sampled gas - Gravity (air 1) : 0.680 Factor Fpv =  $\frac{1}{\sqrt{Z}}$  : 1.0299  
 Values used for calculations :

 $F_b, F_g, Y, F_{tf}$ 

Separator  
 Pressure : 385 PSIG Rates - Gas : 110.5 MM<sup>3</sup>/D GOR : 121.2  
 Temp : 108 °F Oil (separator cond) : 912.0M<sup>3</sup>/D (separator cond)

Stock tank  
 Atmosphere : \_\_\_\_\_ mmHg. \_\_\_\_\_ °F Oil at 60 °F : \_\_\_\_\_ BOPD     
 Tank temperature : \_\_\_\_\_ °F

BSW : \_\_\_\_\_ % WLR : \_\_\_\_\_ %

Transferring fluid : WATER Transfer duration : 30 min.

Final conditions of the shipping bottle : 40cc WATER LEFT  
 Pressure : \_\_\_\_\_ Temp : 63°F

### C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : 83021321 sent on : \_\_\_\_\_ by : \_\_\_\_\_ Shipping order No : \_\_\_\_\_  
 Addressee : \_\_\_\_\_

Coupled with

Bottom hole samples No

Surface samples No

LIQUID	GAS
_____	_____
_____	_____
_____	_____
_____	_____
83021222	A-14419

Measurement conditions,

 Tank . Meter . Dump . Corrected with shrinkage tester. Corrected with tank .

### D - REMARKS -

v s s Chief Operator

READINGS TAKEN 20:30  
 SHRINKAGE ON TESTER = 4%  
 40cc WATER LEFT IN BOTTLE. NO GAS CAP.

10 DOP 127



# FLOPETROL

Client : STATOILSection: ANNEX 42Base : NWBField : GULLFAKSPage : 47Well : 34/10-7Report N° 83/2301/30

## - SURFACE SAMPLING -

Date of sampling : 07.07.83 Service order : \_\_\_\_\_ Sampling No : 9  
 Sample nature : GAS Sampling point : TOP SEPARATOR GAS OUTLET

### A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone : COOK SAND Perforations : 1807-1821 METER Sampling interval : \_\_\_\_\_  
 Depth origin : RKB Tubing Dia : 3 1/2" CS Hd. Casing Dia : 7" LINER  
 Surface elevation : 225 METER Shoe : \_\_\_\_\_ Shoe : \_\_\_\_\_

<u>Bottom hole static conditions</u>	Initial pressure : _____ at depth : _____ date : _____
	Latest pressure measured : _____ at depth : _____ date : _____
	Temperature : _____ at depth : _____ date : _____

### B - MEASUREMENT AND SAMPLING CONDITIONS -

Time at which sample was taken : 20:21 Time elapsed since stabilisation : 15:30

<u>Bottom hole dynamic conditions</u>	Choke size : <u>32/64"</u> since : <u>12:59</u> Well head pressure : <u>2303 PSIG</u> Well head temp : <u>125°F</u>
	Bottom hole pressure : _____ at depth : _____ date : _____
	Bottom hole temp : _____ at depth : _____ date : _____

Flow measurement of sampled gas - Gravity (air 1) : 0.680 Factor  $F_{pv} = \frac{1}{\sqrt{Z}}$  : 1.0299  
 Values used for calculations :

 $F_b, F_g, Y, F_{tf}$ 

<u>Separator</u>	Pressure : <u>385 PSIG</u> Rates - Gas : <u>110.5 MM<sup>3</sup>/D</u> GOR : <u>121.2</u>
	Temp : <u>108 °F</u> Oil (separator cond) : <u>912.0 MM<sup>3</sup>/D</u> (separator cond)

<u>Stock tank</u>	Atmosphere : _____ mmHg. _____ °F Oil at 60 °F : _____ BOPD
	Tank temperature : _____ °F

BSW : \_\_\_\_\_ % WLR : 0 %Transferring fluid : \_\_\_\_\_ Transfer duration : 30 min.

Final conditions of the shipping bottle :  
 Pressure : 385 PSIG Temp : 63°F

### C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No : A-14419 sent on : \_\_\_\_\_ by : \_\_\_\_\_ Shipping order No : \_\_\_\_\_  
Addressee : \_\_\_\_\_

Coupled with	LIQUID	GAS
Bottom hole samples No	_____	_____
Surface samples No	<u>83021222</u>	<u>83021321</u>

### Measurement conditions.

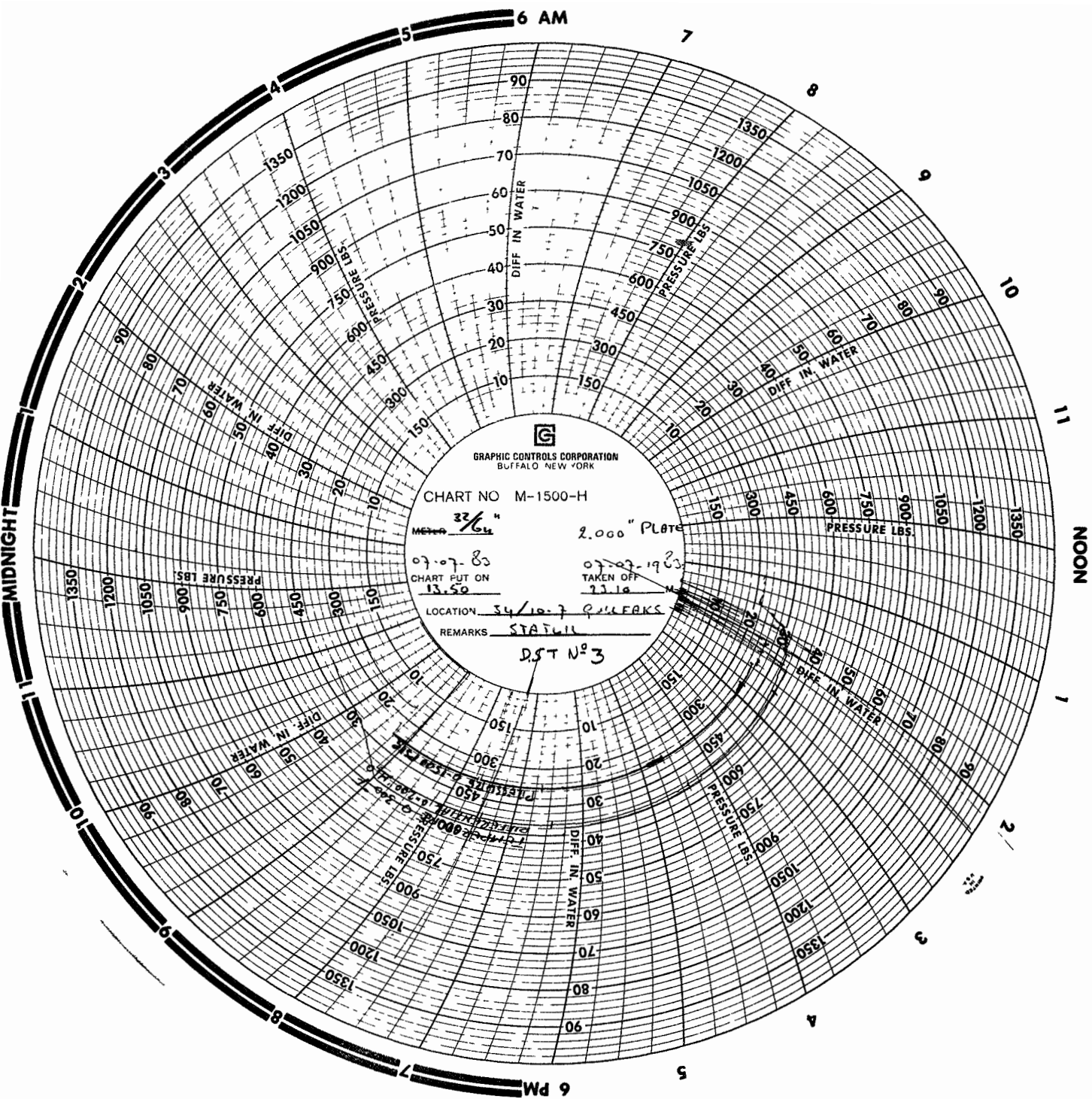
A - Tank .  B - Meter .  C - Dump .  
 a - Corrected with shrinkage tester.  b - Corrected with tank .

### D - REMARKS -

Vsa C-e Operator

READINGS TAKEN 20:30

10 DOP 127



6 PM

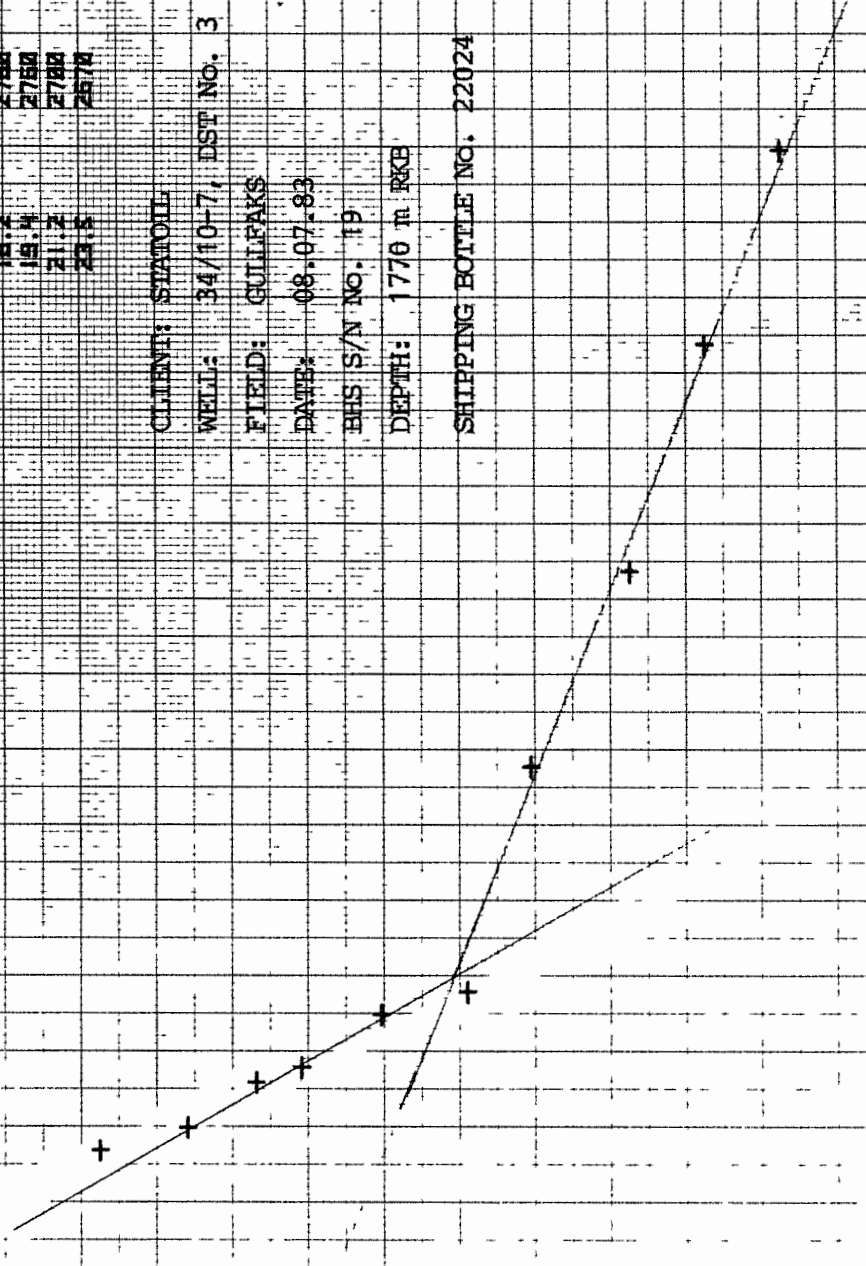
NOON

6 AM

BUBBLE POINT PLOT

P.S.I.B.  
 CC NO. 42000  
 5.5 3740  
 7.5 3440  
 9.5 3100  
 12.1 2800  
 13.8 2650  
 16.1 2700  
 18.2 2700  
 19.4 2700  
 21.2 2700  
 23.5 2570

CLIENT: STAROIL  
 WELL: 34/10-7, DST No. 3  
 FIELD: GULLEPAKS  
 DATE: 08-07-83  
 BHS S/N NO. 19  
 DEPTH: 1770 m RKB  
 SHIPPING BOTTLE NO. 22024



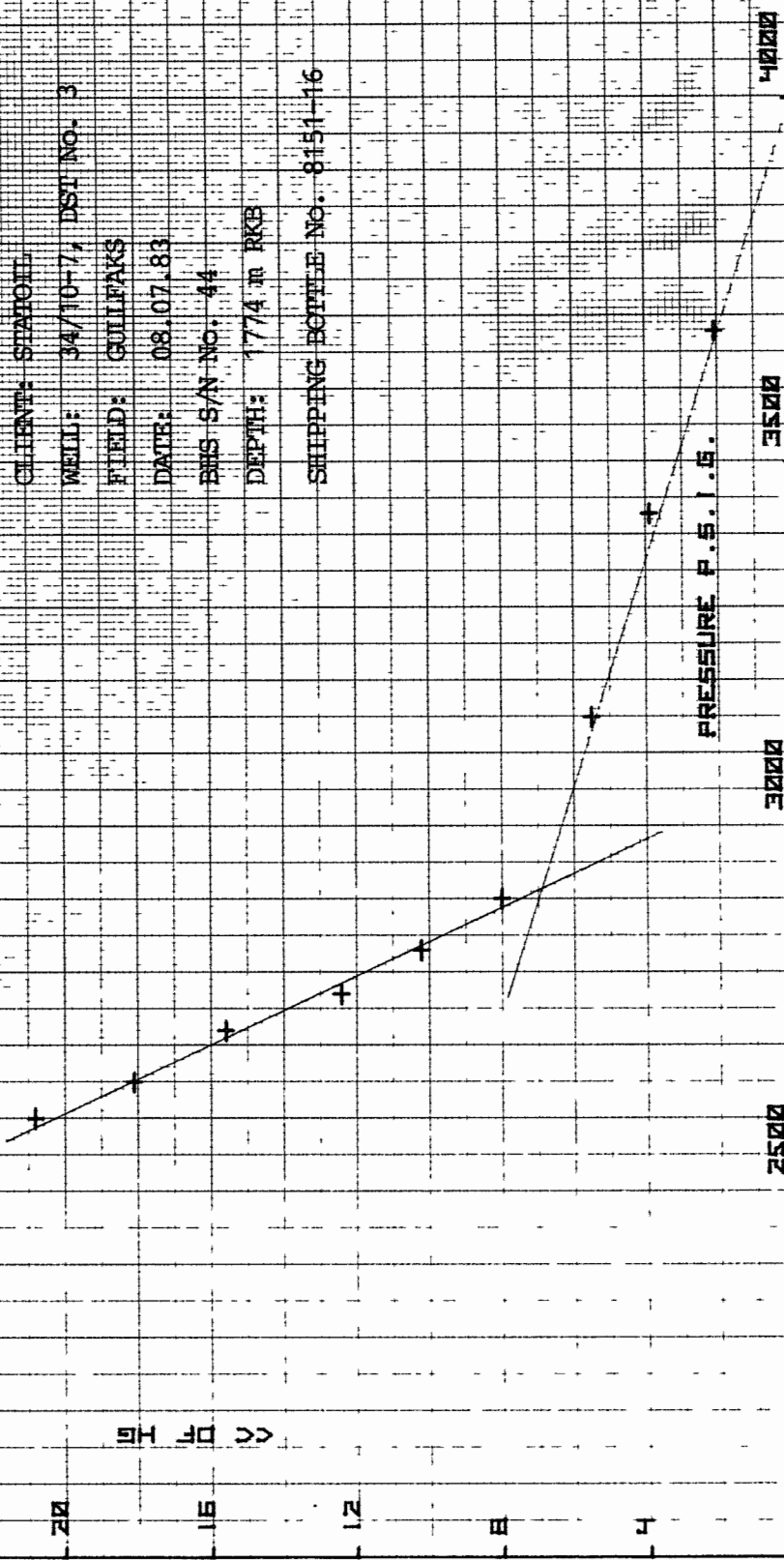
PRESSURE P.S.I.B.

DEPTH m RKB

BUBBLE POINT PLOT

CC	P.S.I.G.
10000	10000
25000	25000
30000	30000
35000	35000
40000	40000
45000	45000
50000	50000
55000	55000
60000	60000
65000	65000
70000	70000
75000	75000
80000	80000
85000	85000
90000	90000
95000	95000
100000	100000

CLIENT: STAROIL  
 WELL: 34/10-7; DST NO. 3  
 FIELD: GULFAKS  
 DATE: 08.07.83  
 EMS S/N No. 44  
 DEPTH: 1774 m RKB  
 SHIPPING BOTTLE No. 8151-16



HP 1000