## FLOPETROL

DIVISION	:	NSD
BASE	=	NWB
REPORT	N°:	83/2301/36

## Well Testing Report

Client :	STATOIL	RIG:	ROSS ISLE
Field :	34/10 ALPHA	Well -	34/10-16 DST NO. 1
Zone :	ETIVE	Date :	09.09.83 - 12.09.83

FLOPETROL	Client <u>- STATOIL</u>	Section <u>= INDEX</u>
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FLOPETROL

Base : \_\_\_\_NWB

Client : \_\_\_\_\_\_STATOIL\_\_\_\_\_ Field : \_\_\_\_\_34/10\_ALPHA\_\_\_\_ Well : \_\_\_\_\_34/10-16 Section : Page

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#### - TEST PROCEDURE -

#### **OBJECTIVES**

TO ESTIMATE PRODUCTIVITY, OBTAIN FLUID SAMPLES, ETSIMATE PRESSURE AND TEMPERATURE, EVALUATE RESERVOIR PROPERTIES.

AFTER SCHLUMBERGER HAS PERFORATED 3397-3407 METERS, THE TEST STRING WAS RUN USING HALLIBURTON TEST TOOLS, FLOPETROL EZ-TREE, LUBRICATOR, FLOWHEAD AND SURFACE TESTING EQUIPMENT, ONE FLOPETROL SDP AND ONE SPERRY SUN MK III IN F-NIPPLE. TWO SPERRY SUN MKIII IN BUNDLE CARRIER. GAUGES RUN IN WITH TEST STRING.

AFTER ALL TEST EQUIPMENT HAD BEEN PRESSURE TESTED TO 6000 PSI, THE PACKER WAS SET AT 3383.09 M.

AFTER SEVERAL ATTEMPTS TO OPEN UP LPR-N, THE STRING WAS LIFTED, RESET AGAIN, AND IT WAS TRIED TO OPEN IT AGAIN. IT WAS OPENED AT 07:55 HRS ON THE 10.09.83 AND THE WELL WAS OPENED THROUGH A 48/64" FIXED CHOKE TO THE SURGE TANK FOR INITIAL FLOW AT 08:05 ON THE 10.09.83. A TOTAL OF 1.12 m<sup>3</sup> WATER CUSHION WAS FLOWED BACK BEFORE SHUTTING IN FOR INITIAL SHUT IN AT 08:08 HRS. THE WELL WAS OPENED FOR THE MAIN FLOW AT 09:12 HRS. GAS REACHED SURFACE AFTER 22 MIN. THE FLOW WAS DIVERTED THROUGH THE TEST SEPARATOR AFTER 220 MIN ON THIS CHOKE WHEN B.S.W. WAS DOWN RO 0%.

3 SETS OF PVT SAMPLES, DEAD OIL SAMPLES, AND WATER SAMPLES WERE OBTAINED BEFORE SHUTTING IN FOR FINAL BUILD UP. TOTAL MAIN FLOW WAS 667 MIN AND THE FINAL SHUT IN PERIOD WAS 656 MIN.

AFTER THE BUILD UP THE WELL WAS FLOWED ON 20/64" ADJUSTABLE CHOKE FOR 28 MIN AND THEN CHANGE TO 12/64" FIXED CHOKE FOR 26 MIN. THE WELL WAS THEN SHUT IN FOR 41 MIN, AND OPENED ON 28/64" FIXED CHOKE FOR 68 MIN TO FLOW OUT THE GAS PRIOR TO RUN BOTTOM HOLE SAMPLERS. THE WIRE LINE EQUIPMENT AND WIRE LINE STRING WITH 1 CCL-L, 1 TPT AND 2 BOTTOM HOLE SAMPLERS WERE RIGGED UP AND PRESSURE TESTED AND RUN IN HOLE. THE WELL WAS OPENED ON A 8/64" FIXED CHOKE FOR 35 MIN BUT ONLY GAS CAME TO SURFACE. THE ADJUSTABLE CHOKE WAS OPENED ON 12/64" FIXED + ADJUSTABLE 14/64" FOR 9 MIN. THEN THE ADJUSTABLE CHOKE WAS CLOSED AND THE WELL WAS FLOWED ON 8/64" FIXED CHOKE FOR 99 MIN, WHEN THE 2 BOTTOM HOLE SAMPLERS WERE TAKEN. WHEN WIRE LINE STRING WAS BACK ON SURFACE, KILLING PROCEDURES STARTED.

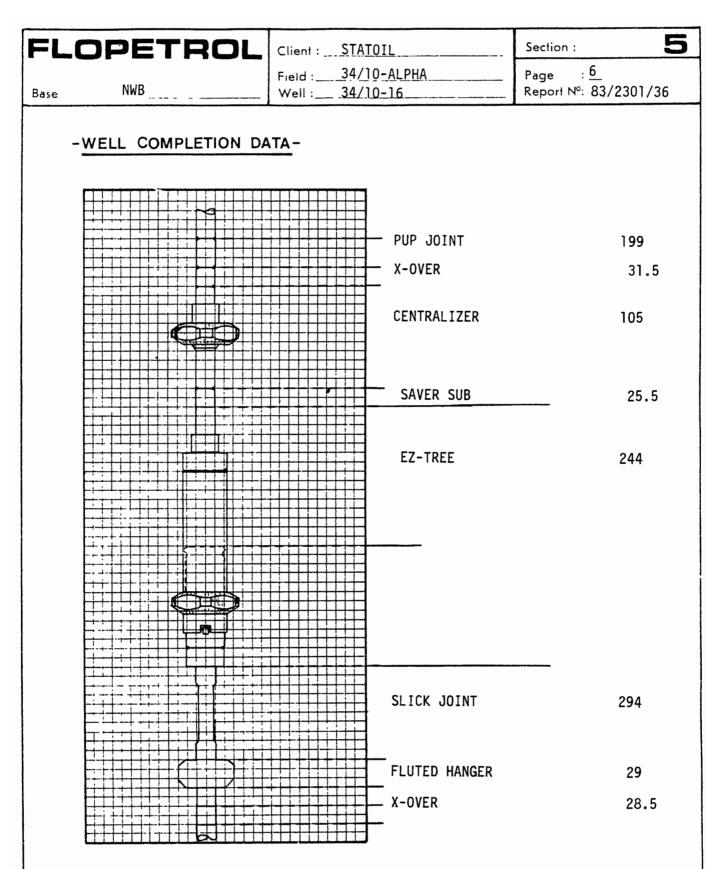
Section : 2 FLOPETROL Client : STATOIL Field : 34/10 ALPHA Well : 34/10-16 Page : 3 Base :\_\_\_\_\_NWB Report Nº:83/2301/36

#### \_ MAIN RESULTS \_

Tested interval:\_\_\_\_\_ETIVE \_\_\_\_\_Perforations:\_\_\_\_\_3397-3407m\_RKB

OPERATION	DURATION	BOTTOM HOLE PRESSURE	WELL HEAD PRESSURE	OIL PROD. RATE	GAS PROD.RATE	G.O.R
Units	MIN	BARS	BARS	м <sup>3</sup> /м	мѕм <sup>3</sup> /м	scm/m <sup>3</sup>
INITIAL FLOW 48/64" FIXED	3	348.1	38.9			
INITIAL BUILD UP	62	458.8	125.8			
MAIN FLOW 48/64" FIXED	667	306.7	106.5	955.4	182.8	191
MAIN BUILD UP	656	457.3	234.3			
SAMPLE FLOW 20/64" FIXED	30	430.1	204.5			
SAMPLE FLOW 12/64" FIXED	26	442.5	218.5			
SAMPLE FLOW 28/64" FIXED	68	390.1	175.9			
SAMPLE FLOW 8/64" FIXED	35	451.0	230.6			
SAMPLE FLOW 14/64" FIXED AND ADJ	9	440.0	225.8			
SAMPLE FLOW 8/64" FIXED	99	450.6	211.3	68.3	14.9	218
Depth of bo	l	measuremen	ts:	j4mRefere	MRKB	J
		at:340				
Separator g	jas gravit	y (air :1)	at choke siz	e :48/64'	FIXED .67	70
STO gravi			48/64"	:0.85	647 60/100	
BSW :	)		Water	- cut :		844914
REMARKS	AND OTH	ER OPERAT	IONS			
ALL MEASUREMEN	NTS ARE TH	OSE LAST REC	ORDED.			
* SPERRY SUN (	GAUGE.					

	FLO	PETROL	Client :	STATOIL		Section	:	3
	Base :	NWB	Field : Well :_	<u>34/10 ALPH/</u> 34/10-16	Α	Page Report	: <u>4</u> N°: 83	/2201/26
				54710-10		neport	<u>دم</u> . • ١١	72301736
	-	OPERATING AND	MEASU	RING CON	DITION	<u>s_</u>		
		A <u>- TYPE OF (</u>	GAUGE _					
	вотто	<u>DM_HOLE</u> : Pressure : <u>FLOPETR</u> Temperature: <u>FLOPETR</u>		RRY SUN MK-:	III			
	<u>well</u>	HEAD : Pressure : <u>FOXBORO</u> Temperature : <u>FOXBORO</u>	<u>0-10000</u> 32-180°F	PSI DWT 50	D-10000 PS	I		
	<u>SEPAF</u>	RATOR : Pressure : <u>BARTON</u> Temperature : <u>BARTON</u> DIFFERENTIAL:		I				:
			RATE COND	ITIONS AND	SOURCES			
	<u>OIL P</u> I	RODUCTION RATE Tank To Floco Meter Dump X Rotron		<u>conditions</u> Separator Atmospheric pressure 6			ith ta	
	GAS	PRODUCTION RATE		<u>Standard</u> 15°C 760 r		<u>-</u>		
	WATE	R PRODUCTION RATE Tank Meter 						
		C <u>– WELL DA</u>	TA _					
	WELL	STATE DURING SUR	VEY :					
		Well producing throug Main casing size_95 Tubing size_5" VAM Perforations: _ Zone_ETIVE Fr _ Zone Fro	<u>/8"</u> set at set at om <u>3397m</u>	<u>3411.65</u> M	Total well Packer <u>338</u> From	<u></u> to	at	
_	WELL	STATE BEFORE TEST	:					
DOP 104		]Well closed since_ ]Well flowing since_	RE-ENTRY	Producing Choke si		VE 64" FIXED	СНОКЕ	
	1							



#### REMARKS

NOT TO SCALE

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## FLOPETROL Client: STATOIL

Section :

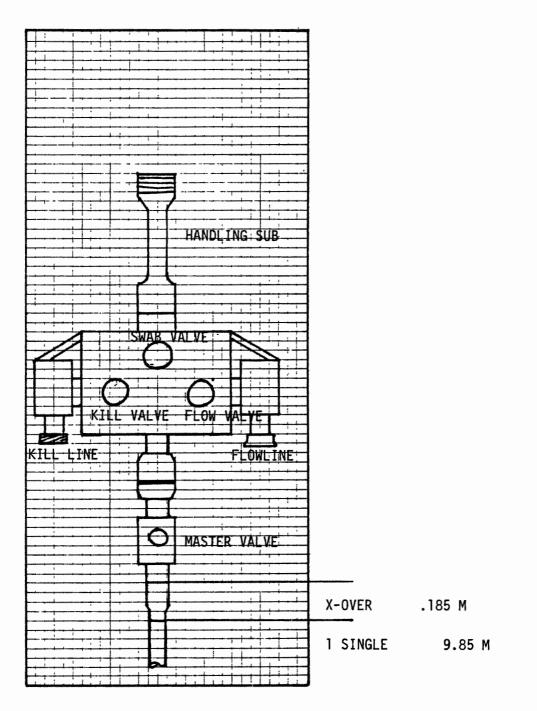
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#### -WELL COMPLETION DATA-



#### REMARKS

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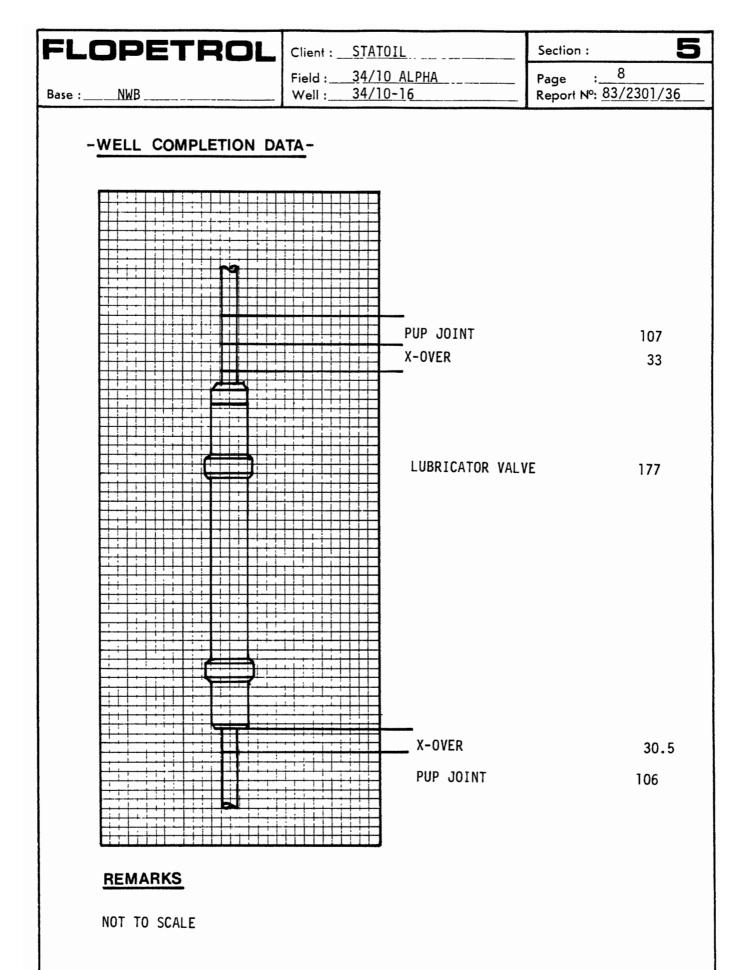
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NOT TO SCALE



Nº: DOP 106

FLOPETROL Client : \_\_\_\_\_\_

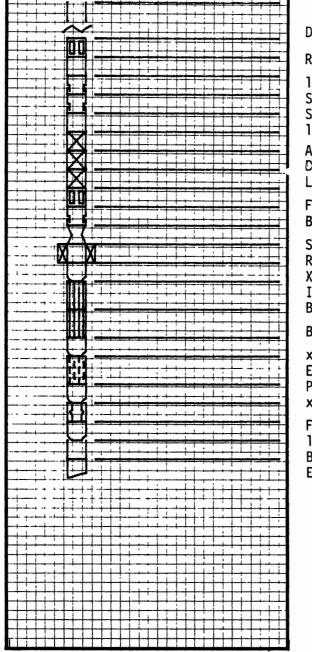
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\_ WELL COMPLETION DATA \_

DEPTH M



DRILL COLLAR	3302.48
RTTS CIRC. VALVE	3303.58
1 STD DRILL COLLAR SLIP JOINT SLIP JOINT 1 STAND DRILL COLLAR	3332.07 3336.09 3340.11 3368.60
APR-M VALVE DRILL PIPE TESTER VALVE LPR-N TÆSTER VALVE	3370 <b>.89</b> 3372.24 3377.23
FULL FLO HYDRAULIC BY-PASS BIG JOHN JAR	3379.25 3380.83
SAFETY JOINT RTTS PACKER X-OVER 2 7/8" EUE BOX x 3 1/2"	3381.71 3383.09
IF PIN BUNDLE CARRIER	3383.34 3387.67
BUNDLE CARRIER	3391.97
x-OVER 3 1/2" IF BOX x 2 7/8" EUE PIN PERFORATED 2 7/8" EUE TUBING J x-over 2 7/8" EUE BOX x 2 3/8	3392.20 o.3392.2
F-NIPPLE 2 3/8" EUE DOK X 2 0/0 EUE PIN 1 JOINT 2 7/8" EUE TUBING BULL PLUG WITH CROSS 2 7/8"	3481:87 3411.50
EUE BOX	3411.65

#### **REMARKS** :

NOT TO SCALE

Base : NWB

N. DOP 107

FLOPETROL

### Client <u>statoil</u> Field <u>34/10-16</u> ALPHA Well <u>34/10-16</u>

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## \_ SEQUENCE OF EVENTS \_

DATE	TIME	OPERATION
03.09.83		D. BARDIN, G. LOTHE, P. GULBRANDSEN; S. BREZINA,
		K. VARGEVIK TRAVELLED TO ROSS ISLE.
	10:00	REPAIR LAB CABIN WHOSE DOOR WAS OFF AND THE INSIDE WAS
		UPSIDE-DOWN. RIG UP IGNITION SYSTEM ON BURNERS.
	13:00 to	CHECK BOTTOM HOLE SAMPLERS. MAKE UP EZ-TREE AND FUNCTION
	18:30	TEST. MAKE UP LUB VALVE. RIG UP SAFETY VALVE ON
		SEPARATOR. CHECK E.L.S. UNIT.
04.09.83	06:00 to	CARRY ON CHECKING B.H.S.
	12:00	PRESSURE TEST EZ-TREE TO 6000 PSI, BODY, VALVE AND GLYCOL
		INJECTION. PRESSURE TEST CHOKE MANIFOLD, BODY TO 6000
		PSI, UPSTREAM VALVES TO 6000 PSI, 3000, 2000 AND 1000
		PSI. DOWNSTREAM VALVES TO 5000 PSI, 2000, AND 1000 PSI.
	12:00 to	PRESSURE TEST LUB VALVE TO 6000 PSI, BODY AND VALVE.
	20:00	PRESSURE TEST FLOWHEAD AND WIRE LINE B.O.P. AND
		LUBRICATOR SECTIONS TO 6000 PSI. VALVES ALL TESTED TO
		6000 PSI. PRESSURE TEST BURNER HEADS TO 1000 PSI.
		PRESSURE TEST OIL AND GAS DIVERTERS TO 1000 PSI.
		PRESSURE TEST OIL MANIFOLD TO 1000 PSI. PRESSURE TEST
		SEPARATOR TO 1200 PSI AND INLET TO 1400 PSI. PRESSURE
		TEST HEATER TO 3000 PSI, INLET AND BLIND CHOKE TO
		6000 PSI.
05.09.83		RIG UP PROPANE AND CHECK BURNERS. RIG UP DEGASSER FOR
		STEAM EXCHANGER. MAKE UP CHICKSANS AND PRESSURE TEST TO
		6000 PSI. CHECK CALIBRATION ON FOXBORO AND BARTON.
		REPAIRS ON SUNDYNE PUMP AND GLYCOL INJECTION PUMP. MAKE
		UP DATA HEADER. MAINTENANCE ON EZ-TREE.
		T. ÅSLAND, A. LØVDAL, O: SALTE, A. LUNDEN, S. LØVIK,
		H. GEHIN ARRIVED RIG.

# \_ SEQUENCE OF EVENTS \_(Continuation)

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OPERATION TIME DATE METER FACTORS ON SEPERATOR. 2" FLOCO OIL = 1.0179, 06.09.83 3" ROTRON OIL = 0.9938, 2" FLOCO WATER = 0.9794. PREPARE BOTTOM HOLE SAMPLERS FOR RUN IN HOLE. EVACUATED 11 GAS BOTTLES. CHECKED OUT ELS WINCH, MAKE UP ROPE SOCKET. CHECK T.P.T.'s. RIG UP SURFACE SAMPLING KIT. 07.09.83 08:30 PICK UP EZ-TREE FOR DUMMY RUN. 09:24 UNLATCH EZ-TREE LATCH EZ-TREE. 09:28 EZ-TREE TORQUED UP. R.I.H. 09:33 10:41 PICK UP LUB VALVE FOR DUMMY RUN. 11:00 LUB VALVE TORQUED UP. R.I.H. CLOSE RAMS. TEST AGAINST SLICK JOINT. 11:20 11:25 P.O.O.H. 11:30 LUB VALVE ON DERRICK. EZ-TREE AT SURFACE, FLUSHED AND SET BACK IN DERRICK. 12:00 13:30 PICK UP FLOWHEAD AND TORQUED UP X-OVERS. 14:00 LAY DOWN FLOWHEAD ON PIPE DECK. GENERAL MAINTENANCE. PRESSURE TEST SINGLE ON FLOWHEAD TO 6000 PSI. CHECK UP 08.09.83 07:30 BACK UP GAUGE. GENERAL MAINTENANCE. 09.09.83 06:15 SCHLUMBERGER PERFORATED AT 3397-3407 m. CONNECT SDP No. 82016 WEITH 18 HRS DELAY AND 10 SEC. 07:22 SAMPLING RATE. SDP ON "F" NIPPLE. R.I.H. WITH STRING. 07:31 EZ-TREE ON STRING. 19:43 CHECK SHEAR PIN AND FUNCTION TEST EZ-TREE. 19:50 EZ-TREE THROUGH ROTARY WITH CLOSED VALVE. 20:03 FILL UP TUBING WITH WATER. OPEN EZ-TREE TO OBSERVE WATER 20:10 FALL. OK. R.I.H. WITH STRING. 20:12 20:30 LUB VALVE ON STRING.

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	_ SEQUENCE	OF EVENTS _( Continuation )	Page : <u>12</u> Report N <sup>*</sup> : <u>83/2301/3</u>	
DATE	τιΜΕ	OPERATION		
09.09.83	20:37	LUB VALVE THROUGH ROTARY AND R.I.H.		
	21:00	PRESSURE TEST STRING TO 420 BARS.		
	21:17	CLOSE EZ-TREE, BLEED OFF PRESSURE ABOVE	TO 33 BARS.	
		TEST OK. PRESSURE UP TO EQUALIZE.		
	21:33	OPEN EZ-TREE VALVE. BLEED OFF AND OBSEN	RVE THE RETURN.	
······	, , ,	45 LITERS		
	21:35	PUMP UP STRING TO 420 BAR.		
	21:45	CLOSE LUB VALVE, BLEED OFF TO 35 BAR AND	D OBSERVE PRESS.	
	22:00	TEST OK. EQUALIZE AND OPEN LUB VALVE TO	O BLEED OFF THE	
		WHOLE STRING. CLOSE LUB VALVE AND PRESSURE TEST FROM ABOVE TO 420, NOT		
	22:10			
		HOLDING.		
	22:20	OPEN LUB VALVE AND PRESSURE TEST THE WHO	OLE STRING. NOT	
		HOLDING PRESSURE.		
	22:30	OBSERVE LEAK AT DRILL FLOOR. DISCONNECT	T LINES.	
		DISCONNECT ONE SINGLE JOINT AND RIG UP	TEST LINE AGAIN.	
	23:04	PRESSURE TEST LUB VALVE FROM ABOVE TO 42	20 BARS.	
	23:14	PRESSURE TEST OK. BLEED OFF AND CONNECT A NEW SINGLE. START PICKING UP FLOWHEAD AND WEIGHT BEARING EQUIPMENT.		
	23:15			
		OPEN LUB VALVE.		
	23:30	HOOK UP B.O.P. ON FLOW HEAD.		
10.09.83	01:00	FLOWHEAD CONNECTED TO THE STRING. STAR	T TO RIG UP	
		SURFACE LINES AND CHOKE MANIFOLD.		
	02:40	FLUSH LINES WITH WATER.		
02:50		CLOSE KILL VALVE. PRESSURE AT KILL VALVE. LEAK.		
	03:06	PRESSURE AT KILL VALVE. 6000 PSI. LEAK	•	
	03:09	OPEN KILL VALVE, CLOSE MASTER VALVE, CL	OSED SWAB VALVE	
		AND FAILSAFE VALVE. START PRESSURE TES	Т.	

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DATE	TIME	OPERATION		
10.09.83	03:12	CHICKSAN LEAK ON KILL LINE. REPAIR.		
	03:22	PRESSURE TEST AGAIN TO 6000 PSI. OK.		
		OPEN MASTER VALVE; CLOSE KILL VALVE.		
	, 	VALVE TO 6000 PSI. OK.		
	03:50	OPEN KILL VALVE. START TO PRESSURE T	EST STRING TO	
	·	6000 PSI.		
	04:07	PRESSURE TEST OK. CLOSED MASTER VALV	E AND OPEN FAILSAFE	
		VALVE. OPEN FIXED SIDE OF CHOKE MANI	FOLD. TEST AGAINST	
······································		INLET HEATER AND ADJUSTABLE SIDE VALV	ES ON CHOKE MANIFOLD	
		TO 5000 PSI.		
	04:23	CLOSE FIXED SIDE ON CHOKE MANIFOLD, O	PPEN ADJUSTABLE SIDE	
		AND PRESSURE TEST TO 5000 PSI.		
	04:37	CLOSE UPSTREAM VALVES ON CHOKE MANIFO	DLD, TEST TO 6000 PSI	
	04:51	PRESSURE TEST OK.		
04:54		OPEN MASTER VALVE.		
	04:57	CLOSE KILL VALVE.		
	06:14	PACKER SET.		
	06:32	PRESSURE UP ANNULUS TO OPEN LPR-N VAI	.ve.	
	06:39	BLEED OFF ANNULUS.		
	06:47	PRESSURE UP ANNULUS.		
	06:57	BLEED OFF ANNULUS.		
	07:00	PRESSURE UP ANNULUS.		
	07:03	ATTEMPT TO OPEN LPR-N VALVE.		
	07:14	OPEN CHOKE ON 48/64" FIXED TO SURGE T	CANK.	
07:15	07:15	CLOSE IN AT CHOKE MANIFOLD.		
	07:32	CLOSE LPR-N.		
	07:50	PICK UP STRING TO CHECK PACKER. LOW	ER DOWN STRING.	
	07:53	PRESSURE UP ANNULUS.	an a	
	07:55	LPR-N OPENED FOR INITIAL FLOW.		
	08:05	OPEN UP CHOKE MANIFOLD. CLOSE LPR-N	FOR INITIAL BUILD	

FLO	PETF		Section :	
	_ SEQUENCE	OF EVENTS _( Continuation )	Page : <u>14</u> Report N <sup>:</sup> : <u>83/2301/3</u>	
DATE	TIME	OPERATION		
10.09.83		UP: FLOW BACK 1.12 m <sup>3</sup> CAUSTION.		
	09:11	OPEN LPR-N TO CHOKE MANIFOLD.		
	09:12	OPEN CHOKE MANIFOLD TO BURNERS ON 48/64	' POS. CHOKE.	
	09:34	GAS TO SURFACE.		
	11:30	SWITCH FLOW THROUGH HEATER.		
	12:10	CHANGE TO STARBOARD BURNER DUE TO PLUGG	LNG.	
	12:50	CHANGE TO PORT BURNER.		
)	12:52	FLOW THROUGH SEPARATOR.		
	13:30	SWITCH FLOW TO TANK FOR METER FACTOR.		
	13:40	SWITCH FLOW BACK TO PORT BURNER. NEW METER FACTOR: 0.9411. START TAKING 1ST SET PVT SAMPLING. OIL BOTTLE #83021001, GAS BOTTLE #A-14799. SWITCH FLOW TO SURGE TANK TO PUMP OUT TANK.		
	15:10			
	15:17			
	15:37			
16:02		SWITCH FLOW BACK TO BURNER.		
	16:51	START TAKING 2ND SET PVT SAMPLES. OIL BOTTLE #83021302, GAS BOTTLE #A-14754.		
18:53		START TAKING 3RD SET PVT SAMPLES. OIL BOTTLE #83021412,		
		GAS BOTTLE #A-14693.		
	19:25	START FILLING UP 2 JERRY CANS + 1 DRUM	WITH OIL AT	
		ATMOSPHERIC PRESSURE.		
	20:00	BYPASS SEPARATOR		
	20:04	SHUTN IN WELL AT CHOKE MANIFOLD + LPR-N	VALVE FOR FINAL	
		BUILD UP.		
11.09.83	07:00	OPEN CHOKE MANIFOLD TO 20/64" ADJUSTABL	E CHOKE.	
	07:02	OPEN LPR-N VALVE TO FLOW GAS OUT OF STR	ING PRIOR TO RUN	
		BOTTOM HOLE SAMPLERS.		
	07:30	CHANGE TO 12/64" FIXED CHOKE.		
	07:37	FLOW THROUGH SEPARATOR TOE ESTIMATE RAT	Ε.	
	07:56	BY-PASS SEPARATOR, CLOSE IN WELL AT CHO	KE MANIFOLD.	

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DATE	TIME	OPERATION	
1.09.83	08:00	CLOSE LUBRICATOR VALVE.	
		BLEED DOWN TEST STRING TO 500 PSI (3	5.5 BARA).
		OPEN KILL VALVE TO EQUALIZE PRESSURE	
	; , 	VALVE.	
	08:33	CLOSE KILL VALVE, OPEN LUBRICATOR VAL	LVE.
	08:37	OPEN WELL AT CHOKE MANIFOLD ON 28/64	" FIXED CHOKE TO
		OBTAIN HIGHER TEMPERATURE IN FLUID.	
09:4	09:46	CLOSE IN AT CHOKE MANIFOLD.	
	09:47	CLOSE LUBRICATOR VALVE.	
	09:48	BLEED OFF STRING TO 35.5 BARA (500 P	SI) TO CHECK
		LUBRICATOR VALVE.	
	09:58	OPEN SWAB VALVE. START TO RIG UP WIN	RE LINE.
	10:25	TOOL STRING MADE UP IN MOUSE HOLE.	
400	10:40	STRING IN LUBRICATOR.	
	10:45	STUFFING BOX ON.	
The rest of the second s	11:02	OPEN KILL VALVE. PRESSURE TEST LUBR	ICATOR.
	11:05	LEAK IN CHICKSAN FLOWLINE.	
	11:10	CHANGE 3" WECO SEAL.	
	11:17	PRESSURE TEST TO 6000 PSI.	
	11:42	BLEED OFF TO 3500 PSI IN LUBRICATOR.	
	11:43	CLOSED KILL VALVE. OPEN LUBRICATOR	VALVE.
	11:44	START R.I.H. WITH CCL-L, TPT AND TWO	BOTTOM HOLE
		SAMPLERS.	
	12:20	OPEN WELL AT CHOKE MANIFOLD ON 8/64"	POS. CHOKE, BUT ONLY
		GAS TO SURFACE.	
	12:55	OPEN ADJUSTABLE CHOKE TO 12/64" TO G	ET OIL FLOWING TO
		SURFACE, TOTAL APPROXIMATELY 14/64".	
	13:04	CLOSE ADJUSTABLE CHOKE.	
	13:05	SWITCH FLOW THROUGH SEPARATOR FOR SA	MPLING FLOW.
	13:08	TOOL AT SAMPLING DEPTH, 3393m RKB.	

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DATE	TIME	OPERATION		
11.09.83	13:17	BHS 281797 FIRED.		
	13:23	BHS 283889 FIRED.		
	13:50	LIFT ORIFICE PLATE, START TO P.O.O.H.		
	14:43	CLOSE IN WELL AT CHOKE MANIFOLD & DOW	NHOLE (LPR-N) AND	
		BYPASS SEPARATOR.		
	1	TOOL AT SURFACE AND CLOSE LUBRICATOR	VALVE.	
	15:03	BLEED OFF PRESSURE AT CHOKE MANIFOLD	TO 35 BAR TO OBSERVE	
		PRESSURE.		
	15:13	BLEED OFF PRESSURE TO ZERO.		
	15:17	START TO RIG DOWN WIRELINE EQUIPMENT	AND WIRELINE STRING,	
		START TRANSFERRING B.H.S. BOTTLES # 1	6251/33 AND	
		<b>#9</b> 214/315.		
	15:42	OPEN KILL VALVE, CLOSE MASTER AND SWAB VALVE TO FLUSH		
	THROUGH SEPARATOR AND THE LINE			
	16:25	CLOSE FAILSAFE AND OPEN MASTER VALVE.		
	16:31 PUMP UP ABOVE LUBRICATOR VALVE TO 3500 PSI TO		0 PSI TO EQUALIZE	
		AND OPEN LUBRICATOR VALVE.		
	16:45	START BULLHEADING.		
	18:00	STOP BULLHEADING.		
	19:15	CLOSED KILL VALVE, PLUG IN RIG LINES.		
99 A. 4 . 9 . 4 . 9 . 9 . 9 . 9 . 9 . 9	19:25	OPEN KILL VALVE.		
	19:34	OPEN APR-M VALVE, START REVERSE CIRCU	LATION.	
	20:05	CLOSED KILL VALVE TO CHECK RIG MANIFO	LD.	
	20:09	OPEN KILL VALVE, CONTINUE REVERSE CIR	CULATION.	
	20:50	SWITCH CIRCULATION FLOW THROUGH BURNE	RS.	
	21:05	SWITCH CIRCULATION FLOW THROUGH FLARE	•	
	21:20	SWITCH TO DOWELL PUMP TO CONTINUE REV	ERSE OUT.	
	21:45	START CIRCULATION THE "LONG WAY" WITH	RIG PUMP.	
	21:55	STOP RIG PUMP DUE TO PROBLEMS; SWITCH	TO DOWELL.	
	22:20	START REVERSE CIRCULATION WITH DOWELL	PUMP.	

FLO	PETF	ROL	Section :
	_ SEQUENCE	OF EVENTS _(Continuation)	Page : <u>17</u> Report N <sup>*</sup> : <u>83/2301/</u>
DATE	TIME	OPERATION	
11.09.83	22:38	CLOSED KILL VALVE, RIG UP LINES ON RIG	CHOKE MANIFOLD.
		OPEN KILL VALVE.	
11.09.83	22:45	START CIRCULATION THE OTHER WAY (DOWN S	TRING AND UP
		ANNULUS).	
12.09.83	02:48	STOP CIRCULATION.	
	03:10	UNSET PACKER.	
	03:15	RIG DOWN B.O.P. + FLOWHEAD.	
·····	04:20	LUBRICATOR VALVE OFF STRING.	
	05:06	EZ-TREE ON ROTARY.	
	05:10	UNLATCH AND CLEAN OUT EZ-TREE.	
	05:15	TREE LATCHED ON.	
	05:25	EZ-TREE OFF STRING.	
	18:15	SSDP NO: 82016 AT SURFACE.	
	······		
	-		
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109	
DOP	
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			FLOPETROL	<u> </u>	Client STATOII	STATOTI											1
						34/10 AI PHA	AHO				1011				uninac		
Base :	NWB				Vell :	34/10-16	YII C		• •	- WELL	IESI	IESTING DAIA	SHEET	"   	Page Report N	. <u>18</u> N : <u>83/2301/36</u>	/36
DATE – TIME	TIME			AND TEP	<b>WPERATURE</b>	AND TEMPERATURE MEASUREMENTS	MENTS		PROD	D RATES	AND	FLUID PROPERTIES	ES	GOR			
			BOT TOM HOLE		WELL HEAD	AD	SEPA	SEPARATOR	OIL OR	OIL OR CONDENSATE	ATE	GAS					
Time	Cumul		Pressure	Tg temp	Ig press	Cg press	Temp	Press	Rate	Gravity	L	Rate	Gravity				
HR/MIN	MIM	Do	BARA	D0	BARA		oF	PSIG	M3/D	60/60	%	SCM/D	Air = 1	SCM/M3			Units
		10.09.83	.83														
06:14						SET PACKER	ER										
06:32	0					OPEN LPR-N	K-N TO	CHOKE	MANIFOLD								
06:35	3																
06:39	7					BLEED OFF	F ANN	ANNULUS TO	CLOSE LI	LPR-N							
06:47	0					PRESSURE	Ъ	ANNULUS	TO OPEN LPR-N	LPR-N					-	1 1 1	
06:57	10/0					BLEED OFF ANNULUS T	F ANN	ILUS TO	OCLOSE LPR-N	PR-N							1
07:03	0	123	660.4	13	4.4	OPEN LPR-N	N-N TO	CHOKE	MANIFOLD						3		<b>NAME 1</b> (1)
07:04	1			13	4.4												
07:05	2	123	654.0	13	4.4												
07:06	3			13	4.4												
07:07	4	123	652.1	13	4.4												
07:08	5			13	4.5												
01:09	9	123	650.7	13	4.5												
07:10	7			13	4.6												
LIQU	ID FLOV	V RATE	LIQUID FLOW RATE MEASURING	CONDI	CONDITIONS :					ESTED 1 EPTH RE	TESTED INTERVAL DEPTH REFERENCE		MRKB				
										DEPTH OF	- B H ME	UF B H MEASUREMENTS :					

No.: DOP 110	110															
ц Ц			-OPETROL		-WELL TESTING	ESTIN	1	DATA Sł	SHEET_( Continuation )	Intinue	ation )	Page Repoi	N L	Page : 19 Report N': 83/2301/36	- Section :	N
DATE -	TIME	PRE	PRESSURE A	AND TE	TEMPERATURE		MEASUREMENTS	ENTS	PROD. R/	ATES AI	RATES AND FLUID	Ë	TIES	GOR		
		BOTT(		>	WELL HEAD	۹D		SEPARATOR	OIL OR C	CONDENSATE	SATE		GAS			
TIMe HR/MIN	Cumul	Temp.	Pressure	Tg. tem	Tg. temp Tg. press. Cg. press.	Cg. press		Press.	Rate	Gravity	BSW	Rate	Gravity			
07:10			IDIIG		10.09.83		3	-		0/00	٩	d/line	Air=1	SCM/M3		Units
07:12	6			13	4.8										2	
07.13	, o	103	3 277													
61:10	Γ	123	C.140	E1	4.8											
07:14	11/0					OPEN C	CHOKE 0	ON 48/6	4" TO SURGE	E TANK						
07:15	1/0	123	647.5			CLOSE	IN AT	CHOKE	MANIFOLD							
07:16	1															
07:32	17/0					CLOSE	LPR-N	VALVE								
07:50						PICK U	UP STRING	TO	CHECK PACKER.		LOWER DOWN	AN STRING				
07:53		122	522.7			PRESSURE UP		ANNULU	S							
07:55	0	122	388.0	13	63.0	LPR-N	OPENED									
07:56	j			13	73.4											
07:57	2	122	422.9	13	94.1											
07:58	e			13	103.7											
07:59	4	122	456.2	13	109.2											
08:00	5			13	111.0											
08:01	9	122	458.3	13	112.7											
08:02	7			13	113.0											
08:03	8	122	458.3	13	113.0											

2				Units																	
Section :																					
20 83/2301/36	GOR		CCM/M3																		
Page : 20 Report N': 83/2301/36	5	g	Rate Gravity			FIXED CHOKE															
SHEET_( Continuation )	RATES AND FLUID	SATE	Gravity BSW 8	e		TANK ON 48/64"			CLOSE LER-N												
SHEET_( Co	PROD. R.	OIL OR	s. Rate M3/D			TO SURGE	CAUSHION		MANIFOLD - CI												
DATA	MEASUREMENTS	SEPAF	5. Temp. Press. OF PSIG			CHOKE MANIFOLD	BACK 1,12 M <sup>3</sup>		AT CHOKE												
-WELL TESTING	TURE MEA	HEAD	IG. terror Ig. press. Lg. press. oc BARA	10.09.8		OPEN CH	FLOW BA		SHUT IN												
-WELI	TEMPERATURE		BARA BARA					4.4	38.9	47.9	47.9	47.9	48.9	49.6	50.6	51.7	52.7	54.4	55.5	56.6	
٦	E AND				13	7		1   13	13	7 13	13	5 13	13	3 13	13	3 13	13	13	13	13	
Ĩ	PRESSURE	BOTTOM HOLE	D. Fressure BARA			350.7		348.1		456.7		457.5		457.8		457.8		457.9		457.9	
OPETROL						122		122		122		123		123		123		123		123	
0	e - Time		IN MIN	2	6 t	0	1	7 2	3/0		2	m	4	5	9	2	œ	6	10	11	
Ш	DATE	Time	HR/MIN	08:03	08:04	08:05	08:06	08:07	08:08	08:09	08:10	08:11	08:12	08:13	08:14	08:15	08:16	08:17	08:18	08:19	

FLOPETROL         Well TESTING DATA SHET J (Continuation)         Page         XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	No.: DOP 110	110															
-Time         Freesone         And         Tensenture         Productions         Productions         Productions         Control         Contro         Contro         Control	Ľ					. MELL	<b>LESTING</b>			IEET_( Co	Intinua	ition )	Page Repo	N L	21 33/2301/36		N
		TIME	РВ	ESSURE A	AND	EMPERATL	JRE MEAS	UREMEN	VTS					TIES	GOR		
Chronic         Terrice         Restance         General Lennes         Convol         Rate         Gravity         Bite         Gravity         Rate         Gravity         Rat         Gravity         Rate	•			OM HOLE		VELL HE	AD	SEPAR.	ATOR		ONDENS	SATE	9	AS			
M         MM         GC         BARA         OC         DATA         DATA <thdata< th=""> <thdata< th=""> <thdata< th=""></thdata<></thdata<></thdata<>	l me	Cumul		Pressure	Tg. tem	p Tg. press.	Cg press.				Gravity	BSW		Gravity			
17         124         458.0         13         64.1         Addition of the state of the sta	HR/MIN	NIM	0C	BARA	0C	BARA			PSIG	M3/D	60/60	%	SCM/D	Air=1			Units
17 $124$ $438.0$ $13$ $64.1$ $69.9$ $64.1$ $69.9$ <th>07:00</th> <th></th>	07:00																
22 $13$ $69.9$ $69.9$ $13$ $76.1$ $13$ $76.1$ $124$ $458.1$ $13$ $76.1$ $124$ $458.1$ $13$ $81.7$ $124$ $458.2$ $13$ $81.7$ $124$ $458.2$ $13$ $87.9$ $124$ $458.2$ $13$ $95.0$ $124$ $458.2$ $13$ $96.5$ $124$ $458.2$ $13$ $96.5$ $124$ $458.3$ $13$ $101.7$ $124$ $458.3$ $13$ $101.7$ $124$ $458.3$ $13$ $101.7$ $124$ $458.3$ $13$ $101.7$ $124$ $124$ $458.3$ $13$ $101.7$ $124$	08:25	17	124	458.0	13												
27 $124$ $458.1$ $13$ $76.11$ $76.11$ $76.11$ <	08:30	22			13	69.9											
32 $13$ $81.7$ <td>08:35</td> <td>27</td> <td>124</td> <td>458.1</td> <td>13</td> <td>76.1</td> <td></td>	08:35	27	124	458.1	13	76.1											
37         124         458.2         13         87.9	08:40	32			13	81.7											
42 $13$ $93.0$ $93.0$ $96.5$ <td>08:45</td> <td>37</td> <td>124</td> <td>458.2</td> <td>13</td> <td>87.9</td> <td></td>	08:45	37	124	458.2	13	87.9											
47         124         458.2         13         96.5	08:50	42			13	93.0											
52         13         101.7         101.7         101.7           57         124         458.3         13         105.5         105.5         105.5           62         12         13         114.4         105.5         114.4         105.5         114.4         105.5         114.4         105.5         114.4         105.5         114.4         105.5         114.4         105.5         114.4         105.5         114.4         105.5         114.4         105.5         114.4         105.5         114.4         105.5         114.4         105.5         114.4         105.5         114.4         105.5         114.4         105.5         114.4         105.5         114.4         105.5         114.4         105.5         114.4         115.5         114.4         115.5         114.4         115.5         114.4         115.5         114.4         115.5         114.4         115.5         114.4         115.5         114.4         115.5         114.4         115.5         114.4         115.5         114.4         115.5         114.4         115.5         114.4         115.5         114.4         115.5         114.4         115.5         114.4         115.5         114.4         115.5         114.4 </td <td>08:55</td> <td>47</td> <td>124</td> <td>458.2</td> <td>13</td> <td>96.5</td> <td></td>	08:55	47	124	458.2	13	96.5											
57     124     458.3     13     105.5     1       62     13     114.4     1     1       0     124     458.8     13     125.8     OPEN LPR-N TO CHOKE MANIFOLD       1     124     458.8     13     126.5     OPEN CHOKE MANIFOLD     N       1     124     350.8     13     126.5     OPEN CHOKE MANIFOLD     TO BURNERS ON 48/64"       2     13     14.1     1     1     1     1       2     13     14.1     1     1     1       3     124     350.8     13     14.1     1       3     124     343.0     13     16.5     1       4     18.6     18.6     1     1     1       5     124     339.3     14     19.3	00:60	52			13	101.7											
62         13         114.4         13         114.4         13         14.4<	09:05	57	124	458.3	13	105.5											
0         124         458.8         13         125.8         OPEN LPR-N TO         CHOKE         MANIFOLD         MANIFOLD           1/0         -         -         13         126.5         OPEN CHOKE MANIFOLD         TO BURNERS ON 48/64"           1         124         350.8         13         14.1         -         -         -           2         1         124         350.8         13         16.5         -         -         -         -           3         124         343.0         13         17.9         -         -         -         -         -           4         -         14         18.6         - <td>09:10</td> <td>62</td> <td></td> <td></td> <td>13</td> <td>114.4</td> <td></td>	09:10	62			13	114.4											
1/0       13       126.5       OPEN CHOKE MANIFOLD       TO BURNERS       0N 48/64"         1       124       350.8       13       14.1            2       1       13       14.1 </td <td>09:11</td> <td>0</td> <td>124</td> <td>458.8</td> <td>13</td> <td>125.8</td> <td>OPEN LPR</td> <td>IO</td> <td></td> <td>MANIFOLD</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	09:11	0	124	458.8	13	125.8	OPEN LPR	IO		MANIFOLD							
1         124         350.8         13           2         2         13         13           3         124         343.0         13           4         124         343.0         13           5         124         339.3         14	09:12	1/0			13	126.5	OPEN CHO	KE MANI		TO BURNERS	NO		XED CHOKE				
2 13 3 124 343.0 13 4 14 5 124 339.3 14	09:13	I	124	350.8	13	14.1											
3         124         343.0         13           4         124         343.3         14           5         124         339.3         14	09:14	2			13	16.5											
4   14   14   5   124   339.3   14	09:15	3	124	343.0	13	17.9											
5 124 339.3 14	09:16	4			14	18.6											
	09:17	5	124	339.3	14	19.3											

	<b>N</b>				Units																	
	Section																					
	Page : 22 Report N <sup>:: 83/2301/36</sup>	GOR			SCM/M3																	
	rt N: <u>.</u> 8	ries	GAS	avity	Air=1																	
	Page Repo		9	Rate	SCM/ D																	
	ation )	AND FLUID	SATE	BSW																		
	ontinué	RATES AI	CONDENSATE	Gravity	00/00																	
	SHEET_( Continuation )	PROD. R.	OIL OR C	Rate w3/h	U/CH																	
		STUS	RATOR	Press.	STCI																	
	G DATA	MEASUREMENTS	SEPAI	Temp.	-F																	
	<b>FESTIN</b>		HEAD	Cg. press	10,00.8																	
	-WELL TESTING	TEMPERATURE	WELL HE	Tg. temp Tg. press. Cg. press.	UNING	20	21.3	22.4	23.4	24.1	25.5	26.8	28.2	29.9	32.7	34.4	36.2	38.2	41.0		43.I	43.1 46.2
		AND TE	5	Tg. temp	> //	17	20	21	22	23	24	26	27	28	29	30	31	33	33	;	34	34 37
	-OPETROL	PRESSURE A	BOTTOM HOLE	Pressure RARA	LOURD I		336.1		332.4		328.5		325.4		322.8		318.8		315.1			
		PR	BOTT	Temp.			124		124		124		124		125		125		125			
110	Ŭ	- TIME				9	7	8	6	10	11	12	13	14	15	16	17	18	19	0,	24	21
No.: DOP 110		DATE -		T Ime HR/MTN	09:17	09:18	09:19	09:20	09:21	09:22	09:23	09:24	09:25	09:26	09:27	09:28	09:29	09:30	09:31	00.27	70.00	09:33

No.: DOP 110	110																
Ц	Ŭ	Ĩ	FLOPETRO		-WELL TESTING	STING	DATA		SHEET_( Continuation )	ntinua	ition )	Page Repo	N LI	Page : 23 Report N': 83/2301/36	6 Section	: uo	~
DATE -	– TIME	PR	PRESSURE A	AND TE	TEMPERATURE		<b>MEASUREMENTS</b>	S	PROD. RA	RATES AND FLUID	VD FLUI	臣	TIES	GOR			
		-	BOTTOM HOLE		WELL HEAD		SEPARAT	TOR O	OIL OR CONDENSATE	ONDE NS	SATE		GAS				
Time	Cumul			Tg. tem	Tg. temp Tg. press. Cg. press.	g. press.	Temp. Pre		Rate	Gravity BSW	BSW	Rate	Gravity			CO, H,S	
HR/MIN	MIM	00	BARA	00	BARA								Air=1			2 %	Units
09:34						10.09.8											
09:35	23	126	310.3	39	53.4												
09:36	24			41	61.0												
09:37	25	126	307.7	42	64.1												
09:38	26			43	69.9												
09:39	27	126	305.2	46	78.2												
05:40	28			49	85.5												
09:45	33	127	301.1	50	104.4												
09:50	38			47	95.5												
09:55	43	128	294.1	44	94.4												
10:00	48			44	94.4											2.2/0	
10:05	53	128	293.9	44	94.7												
10:10	58			44	95.1												
10:15	63	128	294.5	45	95.8												
10:20	68			46	96.0												
10:25	73	129	298.2	47	97.5												
10:30	78			49	99.4						DEMUISION + MUD	NOI				2.5/0	
10:45	93	129	301.8	53	100.6												

No.: DOP 110	110															
Ľ			FLOPETROL		-WELL TESTING	ESTING	DATA		SHEET_( Continuation )	ontinu	ation )	Page Repo	nt N	Page : <u>24</u> Report N <sup>-</sup> : <u>83/2301/36</u>	Section :	7
DATE -	TIME	PRE	PRESSURE A	AND TE	TEMPERATURE MEASUREMENTS	RE MEAS	UREMEI	NTS	PROD R	RATES A	AND FLUID	E.	TIES	GOR		
		BOTT(		5	WELL HEAD	AD	<b>SEPARATOR</b>	ATOR	OIL OR C	CONDENSATE	SATE	9	GAS			
Time	υ I	Temp.		Tg. tem	Tg temp Tg. press. Cg. press. Temp.	Cg. press.	Temp.	Press.	Rate	Gravity	BSW	Rate	Gravity		CO	CO2 Has
HR/MIN	NIM N	оC	BARA	0C	BARA		OF	PSIG	м3 / D	60/60	%	MSCM/D	Air=1	scm/m <sup>3</sup>	2	Units
10:45						10.09										
11:00	108			57	101.9						Demu +m	lsion ud				
11:15	123	129	302.8	60	102.3											
11:30	138			62	104.1				SWITCH I	FLOW TH	THROUGH	HEATER				
11:45	153	129	307.2	63	105.9						Demul +mud	lsion d			1.25/0	10
12:00	168			65	103.7											
12:10	178				103.7				CHANGE 1	TO STAR	STARBOARD	BURNER				
12:11	179	129	304.5		103.7											
12:12	180				103.7											
12:13	181	129	304.7		103.9											
12:14	182				103.9											
12:15	183	129	304.4	67	103.7											
12:30	198			68	103.5											
12:45	213	129	304.1	69	103.5						Trace					
12:50	218				103.5				CHANGE 7	TO PORT	BURNER					
12:52	220								SWITCH FLOW THROUGH	LOW THE		SEPARATOR				
12:55	223	129	303.8		103.4											
13:00	228			69	103.0		117	350		.8558	0	178.3	.660		1.0/0	

No.: DOP 110																	
Ō	Доре:		<b>LAOL</b>		WELL T	-WELL TESTING	DATA		SHEET_( Continuation )	Intinu	ation )	Page Repo	rt N	Page : 25 Report N': <u>83/2301/36</u>	Section	: 	
DATE – TIME		PRES	PRESSURE AN	AND TEN	TEMPERATURE		MEASUREMENTS	VTS		RATES A	AND FLUID	E	TIES	GOR			
Cumul	-	Temp.	BOTTOM HOLE Temp. Pressure	Ta temo	WELL HEAD	AD Ca press.		ATOR Press.	~	CONDENSATE Gravity   BSV	SATE	G/ Rate	GAS IGravitv		/- 1J	CDA HAS	SHR
N		Jo	BARA	Do	OC BARA	0	JF	PSIG	M <sup>3</sup> /D	60/60		MSCM/D	Air=1	SCM/M3	<u>~_/рн</u>		Units
13:00						10.09.83											
:15 2	258	129	303.5	71	103.0		132	320	954.0	.8558	0	184.5	.660	193			
13:30 2	273			71	103.0		132	320	955.4	.8558	0	184.5	.660	193		1.0/0	
13:45 28	288 ]	129	304.0	72	103.2		135	320	955.4	.8558	0	184.8	.660	193			
14:00 30	303			72	103.5		136	315	954.0	.8558	0	184.0	.660	193			
14:30 33	333			73	103.9		138	315	957.5	.8558	0	182.4	.669	190		1.5/0	
15:00 36	363			73	104.2		139	315	958.2	.8558	0	182.7	.669	191			
15:30 39	393			73	104.4		139	315	958.2	.8558	0	182.7	•669	191			
16:00 42	423			73	104.4		139	315	959.7	.8558	0	181.5	.669	189		1.0/0	
16:30 45	453			74	104.7		139	315	957.5	.8558	0	181.5	.669	190			
17:00 48	483			75	104.8		139	315	958.2	.8566	0	181.7	.668	190			
17:30 51	513			75	104.8		139	315	958.2	.8566	0	181.7	.668	190			
18:00 54	543			76	105.0		139	315	959.0	.8566	0	181.7	.668	189		1.5/0	42%/66
18:30 57	573			76	105.2		139	315	961.8	.8574	0	181.6	.668	189	10.000ppm 7.0	mq¢	
19:00 60	603			77	105.4		140	315	963.2	.8574	0	180.8	.670	188			
19:30 63	633			77	105.7		140	315	962.5	.8574	0	181.6	.670	189		2.0/0+	
20:00 66	663			77	106.1		144	310	955.4	.8574	0	182.8	.670	191			
20:00				BYPASS	SS SEPARATOR	ATOR											

No.: DOP 110	110															
Ľ		Ē	FLOPETROL		MELL 7	-WELL TESTING	5 DATA		SHEET_( Continuation )	ion )	Page : <u>26</u> Report N': 83/2301/36	.: <u>26</u> N': 83/	2301/36	Section		
DATE -	TIME	PRE	PRESSURE AI	AND TE	MPERATL	TEMPERATURE MEASUREMENTS	UREME	NTS	PROD RATES AND	) FLUID	PROPERTIES	S	GOR			Τ
		BOTTC		5	WELL HEAD	AD	SEPAR	SEPARATOR		TE	GAS					
Time up/wrw	υ L	Temp.	-	Tg. temp	Tg. press	Tg. temp Tg. press Cg. press. Temp.	Temp.	Press.	Gravity	BSW	Rate G	Gravity			CO, H,S	
20:00	KTW N	30	BAKA	S	BARA	10.00	oF	PSIG	M <sup>3</sup> /D 60/60		MSCM/D A		3CM/M <sup>3</sup>			Units
20:04	667/				106.5		SHUT	IN WE.	L AT CHOKE MANIFOLD	+	LPR-N VALVE					
20:05	1	129	406.1		118.9											
20:06	2				124.4											
20:07	3	129	409.6		128.6											
20:08	4				133.4											
20:09	5	129	412.3		138.2											
20:10	9				142.3											
20:11	7	129	415.0		148.5											
20:12	8				152.7											
20:13	6	129	418.0		157.5											
20:14	10				163.0											
20:15	11	129	421.1		169.2											
20:20	16				195.4											
20:25	21	128	437.1		215.4											
20:30	26			54	228.5											
20:35	31	127	446.1		232.7											
20:40	36				234.0											
																1

No.: DOP 110	110																
		Ĩ	FLOPETROL		-WELL TESTING	ESTING	DATA		SHEET_( Continuation )	ontinua	ition )	Page Report		Page :27 Report N': 83/2301/36	Section	 uoi	~
DATE -	– TIME	PRE	PRESSURE A	AND TE	TEMPERATURE	IRE MEAS	MEASUREMENT	NTS	PROD R,	RATES A	AND FLUID		ES	GOR			
				>	WELL HEAD	AD	SEPARA	ATOR	١œ	CONDE N SATE	SATE		S				
Time un/urv	ũ	F	<u> </u>	Tg. tem	ι σi	Cg. press.		Press.		Gravity	BSW	Rate	Gravity			CD. Has	0
11W/MH	NTW	20	BARA	ეი	BARA	oF		PSIG	M <sup>3</sup> /D	60/60	%	(D	Air=1	_3CM/M <sup>3</sup>		201 10	Units
04.02						00.01											
20:45	41	127	448.1		234.4												
21:00	56			42	234.7												
21:15	71	127	450.6		235.0												
21:30	86			37	235.2												
21:45	101	126	451.9		235.4												
22:00	116			30	235.4												
22:30	146			25	235.3												
23:00	176			23	235.3												
23:30	206			21	235.3												
						11.09.83											
00:00	236			22	235.2												
00:30	266			20	235.1												
01:00	296			18	235.1												
01:30	326			17	235.1												
02:00	356			17	235.0												
02:30	386			16	235.0												
03:00	416			16	235.0			-									

		Ĩ	OPETROL		-WELL TESTING	ESTIN	G DATA		SHEET_(Continuation)	ontinu	ation )	Pag	ort N	Page : 28 Report N': 83/2301/36	Section	 	~
DATE -	– TIME	PRE	PRESSURE A	AND TE	TEMPERATURE MEASUREMENTS	RE MEA	SUREME	ENTS	PROD. R	RATES A	AND FLUID	Ľ۵	TIES	GOR			
ŀ		BOTT(	BOTTOM HOLE	5	WELL HEAD	٩D			OIL OR	CONDENSATE	ISATE		GAS				
HIME HD/MTN	Cumul	Temp.	Pressure	Tg. temp	Tg. temp Tg. press. Cg press.	Cg press		_	Rate	Gravity	, BSW	Rate	Gravity			CO <sub>2</sub> H <sub>2</sub> S	
03:00	OT V	٢	BAKA	3	BAKA	0 0.0.11	oF	PSIG	₫/c₩	60/60	0 %	MSCM/D	Air=1	SCM/M <sup>3</sup>		%	Units
03:30	746			16	735												
00.00				01	662												
04:00	476			16	235												
04:30	506			15	235												
05:00	536			15	235												
05:30	566			15	235												
00:90	596			15	234.5												
06:30	626			15	234.5												
07:00	656/			15	234.3	OPEN C	CHOKE M	MANIFOLD	TO 20/64		ADJUSTABLE 0	CHOKE TO	BJRNERS				
07:02	2			16	204.4	OPEN L	LPR-N VA	VALVE.									
07:03	Э	126	422.9	16	198.2												
07:03	4			17	194.1												
07:05	5	126	424.6	17	192.7												
07:06	9			17	194.1												
07:07	7	126	425.1	18	194.7												
07:08	8			20	195.4												
07:09	6	126	425.2	21	195.4												
07:10	10			22	195.1												
																	1

7				Units																		
			CO, H,S	18	2														_			
Section								_										+		_		
	GOR			SCM/M <sup>3</sup>																		
Page 29 Report N' <u>83/2301/36</u>	S	╀	Gravity	Ľ																		
Page Report	PROPERTIES	GAS	Rate (C	MSCM/D																RATES.		
tion )	AND FLUID	ATE	>	% 1																ESTIMATE R		
ontinuat	RATES AN	CONDENSATE	Gravity 1	60/60									D CHOKE.							5 L		
SHEET_( Continuation )	PROD R	OIL OR C		M <sup>3</sup> /D									2/64" FIXED							I SEPARATOR		
DATA SH	IENTS	<b>SEPARATOR</b>		PSIG									10 L							THROUGH		
	ASUREN	L		oF	2								CHANGE							FLOW		
TESTII	URE ME	AD	Cg. pre		00																	
-WELL TESTING	TEMPERATURE MEASUREMENTS	WELL HEAD	Tg. temp Tg. press. Cg. press.	BARA		196.1	196.5	196.6	196.8	197.5	206.1	211.3	204.5	211.5	212.0	213.4	214.7	215.8	216.7	217.2	217.5	217.6
	AND		Tg. tem	С		23	24	24	25	25	26	26	27	27	27	27	27	27	27	27	27	27
-OPETROL	PRESSURE /	( )	٩	BAKA				425.8		427.4		435.6		436.5		440.1		441.4		441.9		442.2
	PR		Temp.					126		126		127		127		127		127		127		127
Ō	- TIME	-	Cumul			11	12	13	14	15	20	25	30/0	1	2	3	4	5	9	7	8	6
	DATE -	i	I IME UD /MTN	01.10	01.10	07:11	07:12	07:13	07:14	07:15	07:20	07:25	07:30	07:31	07:32	07:33	07:34	07:35	07:36	07:37	07:38	07:39

No.: DOP 110

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FLOPETRO			-WELL TESTING	STING	DATA		SHEET_(Continuation)	ontinu	ation )	Page		Page : 30	- Section	: u	
PRESSURE AND TEMPERATURE		MPERATURE	ω		MEASUREMENTS	VTS	PROD. R.	RATES A				03/23U1/30			
		VELL HEAD		Π	SEPARATO	ATOR	lœ.		SATE		GAS				
e Tg. temp T	Tg.temp Tg. press. Cg p	o Tg. press. Cg p	6		à	Press.	Rate	Gravity BSW	BSW	Rate	Gravity			COn Hos	
BARA OC BARA 11.00	BARA				oF	PSIG		60/60	%	MSCM/D	AIr=1	SCM/M <sup>3</sup>		10~100	Units
27 217.7		217.7													
442.4 27 218.0		218.0													
26 218.1		218.1													
442.5 26 218.5		218.5													
26 218.5		218.5			BY-PASS	SE	ARATOR, CI	CLOSE IN	WELL	AT CHOKE N	MANIFOLI				
450.9 26 221.5		221.5													
26 225.8		225.8													
454.1 26 229.2		229.2													
					CLOSE 1	LUBR (	CATOR VALVE.	н							
					BLEED (	OFF TE	EST STRING	TO 35	.5 BARA	(500PSI)					
19 35.5		35.5													
					OPEN KJ	KILL 'A	ALVE TO EQ	EQUALIZE	PRESSIRE	RE ABOVE	LUBRIC,	TOR VALVE.			
456.5					CLOSE 1	KILL V	VALVE AND	OPEN IU	LUBRICATOR	OR VALVE.					
456.6 20 231.6		231.6													
424.2					OPEN WELL	ELL T	CHOKE MANIFOLD		ON 28/64"	64" FIXED	FIXED CHOKE 1	TO GET HIGHER TEMPERATURE.	IER TEMP	ERATURE.	
21 198.2		198.2													
408.6 21 191.3		191.3													

No.: DOP 110	110																
Ц Ц		Ш	LOPETRO		MELL 1	-WELL TESTING	B DATA		SHEET_(Continuation)	intinue	ation )	Page Repo	ort N':	Page : <u>31</u> Report N': <u>83/2301/36</u>	Section	ion :	~
DATE - 1	TIME	PRE	PRESSURE A	AND TE	TEMPERATURE		MEASUREMENTS	NTS	PROD. R/	RATES A	AND FLUID		TIES	GOR			
		BOTT(	BOTTOM HOLE	>	WELL HEAD	AD		<b>ATOR</b>	OIL OR CONDENSATE	ONDEN	SATE	0	GAS				
	-	d	Pressure	Tg. tem	Tg.temp Tg. press. Cg press.	Cg press.	1	Press.	Rate	Gravity BSW	BSW	Rate	Gravity			COn Hos	
HR/MIN	MIN	оC	BARA	oC	BARA			PSTG	м <sup>3</sup> /л	60/60	4	MSCM/D		SCM/M3		7 7 7 A	Units
08:39						11,09, 53											
08:40	ŝ			21	187.2												
08:41	4	126	402.0	23	181.3												
08:42	5			26	180.3												
08:43	6	126	398.6	27	178.5												
08:44	7			28	177.5												
08:45	œ	126	396.7	29	176.8												
08:50	13			32	176.2												
08:55	18	127	393.1	33	176.0												
00:60	23			35	175.6												
09:15	38	127	391.2	37	175-6												
06:30	53			38	175.8												
09:45	68	127	390.1	40	175.9		CLOSE	IN AL	CHOKE MANIFOLD	IFOLD							
09:46	69/0						CLOSE	LUBR	ICATOR VALVE.	Б							
09:47	Г	127	398.2				START	TO BLE	LEED OFF ST	STRING TO	35.5	BARA (500	(500PSI) TO	CHECK L	BRICATOR VALVE	VAL.VF.	
09:48	2				33.2								1				
09:50	4				33.2												
09:51	5	128	439.6														

TIME     PRE       TIME     BOTT(       Cumul     Temp.       Cumul     Temp.       6     0       7     127       8     127       9     127       9     127       10     127       12     127	PRESSURE AND TTOM HOLE D. Pressure Tg. BARA C BARA C BARA C BARA C A47.0		VELL T	-WELL TESTING	DATA		SHEET_(Continuation)	itinua'	tion )	Page	•••	32	Section .	ſ	
- TIME Cumul IIN MIN 2 6 6 2 3 7 6 8 8 8 8 10										Repo	L N L	Report N': 83/2301/36			
Cumul           MIN           MIN		WE Tg. temp	APERATU	TEMPERATURE MEASUREMENTS	UREMEN	VTS	PROD RAT	RATES AND	ID FLUID	Ľ,	'IES	GOR			Γ
Cumul Temp.           IIN MIN OC           2         6           2         6           3         7           3         7           4         8           5         9           6         10           8         127           6         10           8         12		Tg. temp	WELL HEAD	٩D		ATOR		CONDENSATE	ATE	GAS	1S				
MIN     OC       6     127       7     127       8     127       9     127       9     127       10     12       12     12	6447.0 447.0 450.0	1	Tg. temp Tg. press. Cg. press.	Cg. press.	Temp.	Press.		Gravity	BSW	Rate	Gravity		CO <sub>2</sub>	HoS	
6 6 7 127 8 8 8 9 127 9 127 127 122	447.0	ο Do	BARA		fr.	PSIG	M3/D	60/60	%	MSCM/D	Air=1	SCM/M <sup>3</sup>			Units
6 127 7 127 8 8 9 127 10 127 12	447.0														
7 127 8 8 9 127 10 127 12	447.0		33.2												
8 9 127 10 12	450.0		33.2												
9 127 10 12 12	450.0		33.2												
10 12			33.2												
12			<4.4											_	
					OPEN S	SWAB //	VALVE, START TO		RIG UP W	WIRE LINE.					
10:45 59 126 4	455.6				STRING	IN	HOLE AND STU	STUFFING	BOX.					_	
11:02 76					STARF	TO PRI	PRESSURE TEST		ABOVE LUBRICATOR	VAL	VE.				
11:05 79 126 4	456.1				BLEED	OFF 21	PRESSURE DUE	TO LEAK IN	1	3" CHICKSAN.	.N.				
11:17 91 126 4	456.3				START	TO P II	RESSURE TEST	AGAIN TO	TO 420	) BAR.					
11:42 116					BLEED	OFF I(	ro 241 BAR AI	ABOVE LI	UBRICAT	LUBRIGATOR VALVE	TO EQJ	JALIZE.			
11:44 118					OPEN L	LUBRIC/	CATOR VALVE	AND ST	START TO	TO R.I.H. WI	WITH B. H	I.S.			
12:00 134		18	234.7												
12:15 149 126 4	457.0	18	234.7												
12:20 154/0		18	234.7		OPEN W	WELL AT	AT CHOKE MANIFOLI	-	ON 8/64	8/64" POS. CH	CHOKE.				
12:21 1 126 4	452.7		232.0												
12:22 2			231.3											-	

7				Units																	
ion :			CO, H,S	16~ 2///									0/0								
Section																		LPR-N).			
Page : 34 Report N': 83/2301/36	GOR			.3CM/M <sup>3</sup>									223	218				DOWNHOLE			
	IES	GAS	Gravity	Air=1			FLOW.			.672			.672	.672				AND			
Page Repo	- 6		Rate	MSCM/D			SAMPLING			15.94			15.22	14.89				E MANIFOLD			
ition )	and fluid	SATE	BSW	%			OR FOR	m RKB					0	0	0	0	0	AT CHOKE			
ntinua	RATES AI	CONDENSATE	Gravity	60/60			SEPARATOR	Н 3393					.8566	.8566	.8566	.8566	.8566	CLOSE /			
SHEET_( Continuation )	PROD. R/	OIL OR C	Rate	M <sup>3</sup> /D		CHOKE.	THROUGH	SAMPLING DEPTH			0	0	68.4	68.3	68.6	69.3	6.9	SEPARATOR AND			
	NTS	ATOR	Press.	PSIG	1110	ADJ.	H FLOV	AT SAM		195	. FIRED	. FIRED	195	195				}			
G DATA	MEASUREMENTS	<b>SEPARATOR</b>	Temp.			CLOSE	SWITCH	TOOL		75	B.H.S	B.H.5	90	96				BYPASS			
-WELL TESTING	JRE MEA	AD	Tg. temp Tg. press. Cg. press.	0F																	
	TEMPERATURE	WELL HEAD	Tg. press.	BARA		225.8	225.1		224.4	223.7			223.7	230.6	221.6	211.3	211.3	211.3	211.3	211.3	210.9
	AND TEN	3	Tg. temp	Do		50	21		22	22			21	20	20	20	20	20	20	20	20
OPETROL	PRESSURE A		2	BARA			446.4			450.4	450.5	450.6		450.7		450.6		453.5		455.5	
	PRE	BOTTC	Temp.	Jo			126			126	126	126		126		126		126		126	
	- TIME		5	MIM S	0/0	9/6	1	4	9	11	13	21	26	41	56	71	86	0/66	1	2	e
	DATE -		1 Ime	HR/MIN 13:00	12.06	40:CI	13:05	13:08	13:10	13:15	13:17	13:25	13:30	13:45	14:00	14:15	14:30	14:43	14:44	14:45	14:46

## FLOPETROL

DIVISION	:	EMR/NSD
BASE	=	NWB
REPORT	N *=	83/2301/36

## Well Testing Report Annexes \_\_\_

Client = S	STATOIL
------------	---------

- Field = 34/10 ALPHA Well = 34/10-16
- Zone = ETIVE Date = 09.09.83 12.09.83

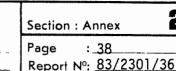
Γ	FLOPETROL	Client : STATOIL	Section : ANNEX
	Base :	Field : <u>34/10 ALPHA</u> Well : <u>34/10-16</u>	Page : 37 Report N: 83/2301/36
Γ			
	INDE	X of ANNE>	(ES
		1 HOLE PRESSURE AND T	
		EMENT _	EMPERATORE
	🗀 1.1 - B	.H. gauge calibration _	
		.H. pressure calculation -	
	[] 1.3 - E	3.H. temperature calculatior	-
		PRODUCTION RATE MEASU	REMENT _
	🗋 2.1 - N	leasurements with tank .	
	🛛 2.2 - N	Measurements with meter .	
	🛛 🕄 GAS PR	ODUCTION RATE MEASURE	MENT_
	-		
		ING SHEETS _	
		Bottom hole sampling _ Burface sampling _	
		S AND MISCELLANEOUS	-
P 112			
-: DOP			

F	LO	PE	TE	<b>IOL</b>	
					10

NWB

Base :

Client :	SIATOIL
-ield :	34/10 ALPHA
Well :	34/10-16



## -LIQUID PRODUCTION RATE MEASUREMENT -

2.1 - MEASUREMENT WITH TANK -

 $V_0 = V \times K 5 (1 - BSW)$ 

Vo : 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.

Vo = Vs x f x (1 - Shr) x K x (1 - BSW)

Vo : Net oil volume at  $60^\circ$  F and atmospheric pressure.

Vs : Gross oil volume measured by meter under separator conditions.

- f : Meter correction factor = Volume measured in tank
  - 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.

Vo = Vs x (1 - Shr') x K x (1 - BSW)

Vo, Vs, K and BSW : Same meaning as in a). (1 Shr') : Shrinkage factor including meter correction factor.

No DOP 120													
	Шd	<b>OPETROL</b>	Client : _	STATOIL	-			- 0ור	- OIL PRODUCTION RATE -	ON RATE -		Section : Annex	ר. מ
Base :	NWB		Field :	34/10 AL 34/10-16	34/10 ALPHA 34/10-16			- MEASI	JREMENT W	- MEASUREMENT WITH TANK -		Page : 39 Report Nº : 83/2301/36	301/36
	Date - Time	Gauge	Tank volume	æ	S	STO Gravity		:		Net volume	Net STO	Cumulative	
Time	Interval	graduation	Volume V	Temp.	Gravity	Temp.	Grav. 60 <sup>0</sup> F	¥	BSW	of STO Vo	product. rate	production	
HR/MIN	4								۵/۵		/day	1	Units
1													
13:30		8	SWITCH TO		TANK FOR METERFACTOR	ACTOR							
13:40			SWITCH BACK TO PORT BURNER	K TO PO	RT BURNE	R						, 1 1	1
15:10												1	
			FLOW THROUGH METER AT	ICH METE	R AT SAME	<b>TIME</b>	(NIM 01)	47,5 BBLS				1 1 1	1 1 1
15:10		262	FLOW TO TANK 254-0,176	NK 254-		= 44.704	BBLS						1
			NEW METER	FACTOR 44.704	44.704 =	0.9411					i 1 1	4 1 9 1 1 1	1
	,				47,5				1 1 1	r ] t	4		
L 2	1							:		3 2 4		1	
												1 1 1 1 1 1 1 1 1 1 1 1 1 1	а Т,
								5 1 1		1 2 1 1 1			
									1		5 1		
												: : : :	5
	,												
								Tested interval :	n erere	1	1 ) ) )		
								reriorations	,	-			

No DOP 122	22														
		FLOPETROL		Client :	STATOIL							RATF -	S	Section : Annex	ณ ณ
				Field :	34/10 ALPHA	НА			-		- MEASUREMENT WITH METER	H METER -			40 22 / 22 / 26
Base :	aroone	NWB		Well :	34/10-16								Ľ	Report N°: 03/ 4	- 00/100
Date -	Date - time	Meter	Š	MSR	•••,^	1 - Shr	*	0	Oil Gravity		¥	Net volume	Net STO	Cumulative	
Time	Interval	reading	6		0 A	Factor	Temp.	Gravity	Temp.	Grav. 60°F	2	of STO: Vo	product. rate	production	
HR/MIN	MIN	<b>BBLS</b>	<b>BRLS</b>	°/°	BBLS		0E		0F			S I H	V3 /day	SOM THE REAL	Units
			BBLS	10.09.83	33								I		Will South
æ 121			ESTIMAT	ED OIL ]	ESTIMATED OIL PRODUCTION DURING		¢LEAN-UP	Ь						139.1	
13:00	, , ,	4482.3		0										139.1	
13:15	15	4549.3	67.00	0	63.06	н	80	.839	110	.8558	.9912	62.5	954.0	149.0	
13:30	15	4616.4	67.10	0	63.15		80	.839	110	.8558	.9912	62.6	955.4	159.0	;
13:45	15	4683.5	67.10	0	63.15	1	80	.839	110	.8558	.9912	62.6	955.4	169.0	
14:00	15	4750.5	67.00	0	63.04	1	80	.839	110	.8558	.9912	62.5	954.0	178.9	
14:30	30	4885.0	134.5	0	126.58	-	80	.839	110	.8558	.9912	125.5	957.5	198.8	s J
15:00	30	5019.6	134.6	0	126.68	1	80	.839	110	.8558	.9912	125.6	958.2	218.8	<b>******</b> ₽
15:30	30	5154.2	134.6	0	126.68	1	80	.839	110	.8558	.9912	125.6	958.2	238.8	ł
16:00	30	5289.0	134.8	0	126.87	-	80	.839	110	.8558	.9912	125.8	959.7	258.7	1
16:30	30	5423.5	134.5	0	126.58	1	80	.839	110	.8558	.9912	125.5	957.5	278.7	
17:00	30	5558.1	134.6	0	126.68	1	80	.837	118	.8566	.9912	125.6	958.2	298.7	
17:30	30	5692.7	134.6	0	126.68	1	80	.837	118	.8566	.9912	125.6	958.2	318.6	
18:00	30	5827.4	134.7	0	126.77	-	80	.837	118	.8566	.9912	125.7	959.0	338.6	
Shrinkag	je factor n	Shrinkage factor measured by Shrinkage lester 🗌 Tank 🕱	nkage tester 🗌	Tank 🕅						Tested interval		5T NO. 1			1
√ = 0, <b>/</b> .	- 1) × ł × 2,	· BSW) = Net oil	l volume at sep	arator cond	4	0.9411 *				Perforations	••	3397-3407			1
						*	* INCLIDE	NE CUDINIVACE	100						

\* INCLUDE SHRINKAGE

ณ <u>์</u>			Units										METERFA 1.0179						
Section - ANNEX 2	Cumulative	production	SCM		358.6	378.7	398.8	418.7					419.4	420.1	420.8	421.5	422.3		
- 41 N = 41/36 Se	Net STO	of STO: Vo product. rate	M3 /day		961.8	963.2	962.5	955.4					68.4	68.3	68.6	.69•3	6.9		
	Net volume	of STO: Vo	<b>BBLS</b>		126.0	126.2	126.1	125.2					4.5	4.5	4.5	4.5	4.6		
) Page Report	¥				.9912	.9912	.9912	.9912					.9974	.9974	.9974	.9974	.9974		
METER -( Continuation )	TΥ	Temp. Grav. 60 F			.8574	.8574	.8574	.8574					.8566	.8566	.8566	.8566	.8560		
Cont	GRAVITY	Temp.	OF		116	116	116	116					92	92	92	92	92		
TER -(	OIL	Gravity	X style		.8385	.8385	.8385	.8385					.846	.846	.846	.846	.846		
		ġ			80	80	80	80					66	66	66	66	66		
WITH	0.0	Factor	and the second se		1	1	1	1					4.2	4.2	4.2	4.2	4.2		
MEASUREMENT	, , ,	0	BBLS	22	127.15	127.34	127.24	126.30					4.69	4.68	4.70	4.75	4.79		
MEASU	BSW		Vo BBLS		0	0	0	0					0	0	0	0	0		
Ь	Vc		BBLS		135.10	135.30	135.20	134.20	SEPARATOR		FIOW		4.61	4.60	4.62	4.67	4.71		
FLOPETROL	Meter	reading	BBLS	4°/28C	5962.5	6097.8	6233.0	6367.2	BY-PASS S		SAMPLE FI	57.53	62.14	66.74	71.36	76.03	80.74		
	- TIME	Interval	NIM		30	30	30	30		33			15	15	15	15	15		
		Time	HR/MIN	10:01	18:30	19:00	19:30	20:00	20:00	11.09.83		13:15	13:30	13:45	14:00	14:15	14:30		

No.: DOP 123

FLOPETROL	Client : STATOIL	Section:ANNEX 3
Base :NWB	Field : 34/10 ALPHA Well : 34/10-16	Page : 42 Report N°: 83/2301/3
_ GAS PRODUCTION	RATE MEASUREMENT by o	rifice meter _
	rules and coefficients given in A	

a) EQUATIONS \_

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

- Q : Production rate at reference conditions.
- C : Orifice flow coefficient.
- hw: Differential pressure in inches of water.
- Pf : Flowing pressure in psia.
  - $C = F_u \times F_b \times F_g \times Y \times F_{tf} \times F_{pv}$
- Fu: Unit conversion factor in desired reference conditions.
- Fb: Basic orifice factor (Q in Cu.ft / hour).

Fg: Specific gravity factor. Y: Expension factor

- Etf : Flowing temperature factor .
- Fov: Supercompressibility factor (estimated).

## Remarks

Em: Manometer factor is equal one since only bellows type meters are used. Fr : Reynolds factor is considered to be one.

	TABLE O	F Fu FACTO	OR	
		REFERENCE	CONDITIONS	
UNITS	60°F	0.0	15°C	15°C
	14.73 psia	760mmHg*	760mmHg *	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 -

DANIEL \_\_\_\_ Flange taps **- P**f taken down/up stream Meter type Flow recorder type: BARTON \_ ID of meter tube : \_\_\_\_\_\_\_

#### c) SPECIFIC GRAVITY SOURCE Sampling point : TOP GAS LINE \_\_\_\_\_ Gravitometer type:\_\_KIMRAY

# d) SUPFRCOMPRESSIBILITY FACTOR Fpv -

All coefficients are taken from AGA NX 19 manual for natural gas free of air, CO2 and H2S. More accurate values could only be determined by laboratory measurement.

FLOPETROL     Client :       Base :     NMB       DATE - TIME     Flowing       DATE - TIME     Flowing       Time     Interval       Temp     absolute       NMN     OF       DSI     OPEN       Usin     MeLL       OPEN     Interval       I2:52     Interval       I3:00     I17       I3:00     I17       I17     365       I96     267.470	t : STATOIL : 34/10 ALPHA : 34/10-16								Section : ANNEX	ANNEX 3
E : NWB E - TIME Flowing Pf Interval Temp. absolute N MIN OF psia "of wat. OPEN WELL ON FLOW THROUGH ESTIMATED GAS 117 365 196 2										
E     TIME     Flowing     Pf     hw     V       N     Interval     Temp.     absolute     hw     V       N     MIN     OF     psia     "of wat.       N     OF     Psia     "of wat.       N     OF     Psia     "of wat.       N     OF     Psia     "of wat.       P     FLOW     THROUGH       ESTIMATED     GAS       117     365     196		РНА		- GAS F	RODUC	T. RAT	E MEA	- GAS PRODUCT. RATE MEASUREMENT	- Page Report	: <u>43</u> N : <u>83/2301/36</u>
N     MIN     OF     Dela     "of wat.       N     MIN     OF     psia     "of wat.       N     OPEN     WELL ON     FLOW     THROUGH       FLOW     FLOW     THROUGH     ESTIMATED     GAS       117     365     196     2	P <sub>f</sub> Orrfice diameter	Gas gravitv	° Ľ	ъ	~	F.	F <sub>pv</sub>	ပ	Gas production rate O	Cumulative Production
OPEN WELL ON FLOW THROUGH ESTIMATED CAS 117 365 196 2		(air=1)							Δ	MSCM
OPEN WELL ON       FLOW     THROUGH       ESTIMATED     GAS       117     365     196     2										
FLOW THROUGH S ESTIMATED GAS 117 365 196 26	48/64" FIXED CHOKE	IO	BURNERS							
ESTIMATED GAS	ATOR									
117 365 196	CUMULATIVE PRODU	PRODUCTION								26.0
	0 2.0	.660	816.13	1.2309	1.0035	.9493	1.0247	667	178.3	26.0
13:15 15 132 335 236 281.176	6 2.0	.660	816.13	1.2309	1.0046	.9372	1.0206	656	184.5	27.9
13:30 15 132 335 236 281.176	6 2.0	.660	816.13	1.2309	1.0046	.9372	1.0206	656	184.5	29.8
13:45 15 135 335 238 282.365	5 2.0	.660	816.13	1.2309	1.0047	.9349	1.0203	654	184.8	31.8
14:00 15 136 330 240 281.425	5 2.0	.660	816.13	1.2309	1.0048	.9341	1.0198	654	184.0	33.7
14:30 30 138 330 240 281.425	5 2.0	.669	816.13	1.2226	1.0048	.9325	1.0200	648	182.4	37.5
15:00 30 139 330 241 282.011	1 2.0	•669	816.13	1.2226	1.0048	.9317	1.0198	648	182.7	41.3
15:30 30 139 330 241 282.011	1 2.0	•669	816.13	1.2226	1.0048	.9317	1.0198	648	182.7	45.1
16:00 30 139 330 238 280.250	0 2.0	.669	816.13	1.2226	1.0047	.9317	1.0200	648	181.5	48.9
16:30 30 139 330 238 280.250	0 2.0	.669	816.13	1.2226	1.0047	.9317	1.0200	648	181.5	52.7
17:00 30 139 330 238 280.250	0 2.0	.668	816.13	1.2235	1.0047	.9317	1.0199	648	181.7	56.4
17:30 30 139 330 238 280.250	0 2.0	.668	816.13	1.2235	1.0047	.9317	1.0199	648	181.7	60.2
$F_{u} = -6799$ $Recorder ranges P_{f} = P_{w} = 0-400^{\circ} H_{2}0$	= 0-1500 PSIG	1G 0-300°F		TESTED PERFOR/	TESTED INTERVAL PERFORATIONS	RVAL :-	3397-3407	407		

No UUP	921														
л Г	OPE			Ч	GAS PRODUC. RATE MEASUREMENT-(Continuation)	ODUC. F	ATE MI	EASURE	MENT-(	(Continu	lation )	Page Report	Page : 44 Report N': <u>83/2301/36</u>		Section - ANNEX 3
DATE - Time	- TIME Interval	Flowing Temp.	P <sub>f</sub> absolute	Чw	√h <sub>w</sub> × P <sub>f</sub>	Orifice diameter	Gas gravitv	۴ <sub>b</sub>	Ę	۲	F <sub>tf</sub>	F <sub>pv</sub>	U	Gas production rate : <b>O</b>	Cumulative Production
N			psia	"of wat.		Inches	(air=1)								MSCM
17:30	р Т Т	4 4	10.09	83							* 2.	~			
18:00	30	139	330	238	280.250	2.0	.668	816.13	1.2235	1.0047	.9317	1.0199	648	181.7	64.0
18:30	139	330	238	238	280.250	2.0	.668	816.13	1.2235	1.0047	.9317	1.0198	648	181.6	67.8
19:00	30	140	330	237	279.661	2.0	.670	816.13	1.2217	1.0047	.9309	1.0198	647	180.8	71.6
19:30	30	140	330	239	280.838	2.0	.670	816.13	1.2217	1.0047	•9309	1.0196	647	181.6	75.4
20:00	30	144	325	248	283.901	2.0	.670	816.13	1.2217	1.0050	.9279	1.0189	<b>644</b>	182.8	79.2
20:00			BY-PASS		SEFARATOR										
11.09.83	e														
			SAMPI	SAMPLE FLOV											
13:15		75	210	136	168.997	.750	.672	112.75	1.2199	1.0043	.9859	1.0185	94	15.94	79.3
13:30	15	06	210	128	163.951	.750	.672	112.75	1.2199	1.0041	.9723	1.0168	93	15.22	79.5
13:45	15	96	210	124	161.369	.750	.672	112.75	1.2199	1.0039	.9671	1.0162	92	14.89	79.7
			END 0	OF DST	NO. 1										

FLOPETROL	Client :STATOIL	Section :
Base : NWB	Field : <u>34/10 ALPHA</u> Well : 34/10-16	Page : <u>45</u> Report N°: 83/2301/36

## SURFACE SAMPLES

SAMPLES TAKEN FROM SEPARATOR FOR PVT

15:17 HRS OIL BOTTLES NO	82021001	GAS BOTTLES	NO. A-14799
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- 16:51 HRS OIL BOTTLES NO. 83021302 GAS BOTTLES NO. A-14754
- 18:53 HRS OIL BOTTLES NO. 83021412 GAS BOTTLES NO. A-14693

DEAD OIL SAMPLES TAKEN FROM SEPARATOR

6 x 1 LITER GLASES

2 x 20 LITER JERRY CANS

1 DRUM

WATER SAMPLES

1 x 5 LITER PLASTIC CANS

FLOPETROL	Client : _s	TATOIL		Section:A	
Base :	Field : <u>3</u> Well : <u>3</u>		IA	Page Report N	: <u>46</u> N°8 <u>3/2301/36</u>
<u>_ SU</u>	JRFACE SA	MPLING			
Date of sampling : 10.09.83 Sample nature : OTL	_ Service orde	er : Sampling	Sa	mpling No : IL_SIGHT_GL	ASS-SEP.
<u>A_RESERVOIR</u> Producing zone : <u>ETIVE</u>	AND WELL ( _ Perforations :	CHARACTE 3397-34	<u>RISTICS _</u> 407M _ Sampl	ing interval:_	
Depth origin : <u>m RKB</u> Surface elevation: <u>160 m RKB</u>					
Bottom hole Initial pressure static Latest pressure measure <u>conditions</u> Temperature	: <u>540 BAR</u> : <u>123.9 <sup>o</sup>C</u> : <u>131.23<sup>0</sup>C</u>	at de at de at de	pth: <u>3405.</u> pth: <u>3405.</u> pth: <u>3405.</u>	64m	10.09.83 10.09.83 10.09.83
<u>B – MEASUREM</u> Time at which sample was taken:	IENT AND SA 15:17	MPLING ( . Time elap	CONDITIONS used since stabi	= lisation :	2 hr 17 min
Bottom hole         Choke size :48/64           dynamic         Bottom hole pressure :           conditions         Bottom hole temp	nce: 09:15 304.9 BAI	Well head pr	essure: 104.4 3405.6	6_Wellhead to 4m date :	emp: <u>73<sup>0</sup>F</u> 10.09.83
Flow measurement of sampled gas $= G$ Values used for calculations : $F_1 = S$					
Fb = {       Separator     Pressure :315_PSIG       Temp     :139_*F	Rates - Gas Oil (separator co	: <u>6</u>	.46 MM SCI 6421 BOI	D GOR:_ D B (separ	1006 ator cond )
<u>Stock</u> Atmosphere : tank Tank temperature :	mmHg	<sup>•</sup> F	Oil at 60 *F : .	6029 BOP	
BSW:0% WLR:	%				
Transfering fluid :Hg		Transfer o	Juration :	50 MIN	
Final conditions of the shipping bottle : Pressure :200_PSIG_Temp :	56 <sup>0</sup> F				
<u>C_IDENTIFICA</u> Shipping bottle No: <u>83021001</u> ser Addressee:	nt on :	<u>SAMPLE -</u> by:	STATOIL	Shipping orde	r No:
Coupled with	LIQUID			GAS	
Bottom hole samples No					
Surface samples No				<u>A-1479</u> 9	
Measurement conditions A_ Tank _ a_ Corrected wit	B_ Meter . h shrinkage te:	ster. b-		_ Dump _ th tank _	
D - REMARKS	=			Visa (	Chief Operator
27 cc Hg LEFT IN OIL BOTTLE SEPARATOR SHINKAGE: 4.2% METER CATOR: .9938 SEPARATOR CONDITION	and a state of the	11111 - 1111-1111 - 1111			

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FLOPETRO	Client :_	STATOIL		Section:				
Base :	Field :	34/10 ALPHA 34/10-16		Page Report	: <u>47</u> N*8 <u>3/2301/36</u>			
_SURFACE SAMPLING _								
Date of sampling :       10.09.83       Service order :       Sampling point :       Sampling point :       TOP OF GAS OUTLET SEP.								
<u>A_RESERVC</u> Producing zone: <u>ETIVE</u>	Perforations:	CHARACTERISTIC 3397-3407M		ng interval	:			
Depthorigin : <u>mRKB</u> Surface elevation: <u>160 mRKB</u>	Tubing Dia: Shoe :	5" VAM 3411.65	Casing Shoe	Dia : :	9 5/8"			
Bottom holeInitial pressurestaticLatest pressure measiconditionsTemperature	ured : <u>458.8 °C</u>	at depth:	3405.0	64mdate	10.09.83			
$\frac{B - MEASUR}{Time at which sample was taken: }$	EMENT AND SA	MPLING CONDI _ Time elapsed si	TIONS . nce stabil	sation:	2 hr 27 min			
Bottom hole dynamicChoke size :48/64dynamic conditionsBottom hole pressure : Bottom hole temp	since: 09:12 304.9 BA 128.60	Well head pressure Rat depth: Cat depth:	: 104.40 3405.64 3405.0	6_Well head 4型 date : 64咽ate :	temp: 73°F 10.09.83 10.09.83			
Flow measurement of sampled gas Values used for calculations :		0.669 Fa						
Separator Pressure : 315 PSI Temp : 139 · F	G <u>Rates</u> _ Gas Oil (separator c	: 6.46 M ond ): 6421	MSCF	D GOR D B (sep	: 1006 arator cons )			
<u>Stock</u> Atmosphere : <u>tank</u> Tank temperature :	mmHg	F Oil at	60 °F : _	6029 BC				
BSW:0% WLR:	º/o		<u> </u>	<u></u>				
Transfering fluid : EVACUATED	CYLINDER	Transfer duration	וייייייייייייייייייייייייייייייייייייי	40 MIN				
Final conditions of the shipping bottl Pressure : 23 BAR Temp:	<u>e : -56°F</u>	-						
<u>C_IDENTIFIC</u> Shipping bottle No: <u>A-14799</u> Addressee:	ATION OF THE	SAMPLESTAT	TOIL S	Shipping or	der No :			
Coupled with	LIQUID			GAS				
Bottom hole samples No								
Surface samples No	83021001			-				
Measurement conditions, A_ Tank _ B_ Meter . C_ Dump . a_ Corrected with shrinkage tester. b_ Corrected with tank .								
<u>D – REMARK</u>	s <u>-</u>			Visa	Chief Operator			

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FLO	PETROL	Client :_s	TATOIL		Section:	ANNEX 42		
Base :	/B		4/10_ALP 4/10-16		Page Report	: <u>48</u> N 8 <u>3/2301/36</u>		
	_SURFACE SAMPLING _							
Date of sam Sample nate	Date of sampling : Sampling No :       Sampling No :         Sample nature :       OIL         Sampling point :       OIL SIGHT GLASS-SEP							
Producing	<u>A _ RESERVOIR</u> zone : <u>ETIVE</u>				ing interval	:		
Depth origi Surface ele	n : <u>m_RKB</u> vation: <u>160 m_RKB</u>	_ Tubing Dia:. _ Shoe  :.	5" VAM 3411.6	Casin 5Shoe	g Dia : :	9 5/8"		
Bottom hole static conditions	Initial pressure Latest prassure measure Temperature	d : <u>458.8 <sup>o</sup>C</u>	at de	epth: <u>3405.</u> epth: <u>3405.</u> epth: <u>3405.</u>	64m_date	:		
Time at whi	<u>B - MEASUREM</u> ch sample was taken:	ENT AND SA 16:51	MPLING Time ela	CONDITIONS psed since stabi	<u>-</u> lisation :	3 hr 51 min		
Bottom hole dynamic conditions	Choke size :48/645 Bottom hole pressure : Bottom hole temp :	305.3 BAI 128.6°(	at depth: _ Cat depth: _	3405.6	4m date : 64mdate :	<u> </u>		
Flow measu Values used	rement of sampled gas - G for calculations : Fb= 8	ravity(air 1):	0.668	Factor Fpv $= 1.0047$ , F	$=\frac{1}{\sqrt{2}}$ :	1.0199 317		
<u>Separator</u>	$\begin{array}{c} \hline \text{for calculations}: \\ \hline F_{b} = 8 \\ \hline \text{Pressure}: \underline{315} \text{ PSiG} \\ \hline \text{Temp}: \underline{139} ^{\text{F}} \\ \hline \end{array}$	Rates - Gas Dil (separator co	:6	6421 BO	D GOR PD B (sec	arator cond )		
<u>Stock</u> <u>tank</u>	Atmosphere : Tank temperature :	mmHg	·F 	Oil at 60 °F : .	6029 BO			
BSW:	00 WLR:	0						
Transfering f	luid: <u>Hg</u>		Transfer	duration :	47 MIN			
Final conditu Pressure :	ons of the shipping bottle : 185 PSIG Temp:	56°F						
Shipping bo Addressee :	C_IDENTIFICAT ttle No: <u>83021302</u> sen				Shipping or	der No :		
Coupled wit	h	LIQUID			GAS			
Bottom he								
					A-14754			
Surface samples No								
Measurement conditions, A_ Tank . B_ Meter . C_ Dump . a_ Corrected with shrinkage tester. b_ Corrected with tank .								
D _ REMARKS _ Visa Chief Operator						Chief Operator		
SEPARATOR METER CAT	LEFT IN OIL BOTTLE SHINKAGE: 4.2% OR: .9938 CONDITION	and a state of the		<b>47.7.2499-000-0</b>				

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	FLO	PETRO	Client : _s	TATOIL		Section:A	NNEX 42		
	Base :	В	Field :_3 Well :_3	4/10 ALPH 4/10-16	IA	Page Report I	: <u>49</u> N& <u>3/2301/36</u>		
	_SURFACE SAMPLING _								
	Date of sampling:       10.09.83       Service order:       Sampling No:       4         Sample nature       :								
	Producing	<u>A – RESERVO</u> zone : <u>ETIVE</u>	Perforations:	CHARACTE 3397-34	RISTICS _ +07MSample	ng interval:			
	Depth origin Surface ele	n : <u>m_RKB</u> vation: <u>160_m_RKB</u>	Tubing Dia : Shoe :	5" VAM 3411.65	Casing 5 Shoe	g Dia :9 :	5/8"		
	Bottom hole static conditions	Initial pressure Latest pressure meas Temperature	: <u>540 BAR</u> ured : <u>458.8 °C</u> : <u>123.9 °C</u>	at de at de at de	pth: 3405.6 pth: 3405.6 pth: 3405.6	54mdate: 54mdate: 54mdate:	10.09.83 10.09.83 10.09.83		
	Time at whic	<u>B – MEASUR</u> th sample was taken:	EMENT AND SA 16:55	MPLING ( Time elap	SONDITIONS .	isation:	3 hr 55 min		
	Bottom hole dynamic conditions	Choke size : <u>48/6</u> Bottom hole pressure : Bottom hole temp :	305.3 BAI	at depth:	3405.64	+m date :	10.09.83		
	Flow measur Values used f	ement of sampled gas for calculations : Fb=	_Gravity(air 1): 816.13, F <sub>g</sub> =	0.668 1.2235, y	Factor Fpv : = 1.0047, F	$=\frac{1}{\sqrt{2}}$ : tf = 0.931	1.0199 7		
	Separator	Fb <sup>=</sup> Fressure : <u>315</u> PSI Temp : <u>139</u> · F	G <u>Rates</u> – Gas Oil (separator ci	:6 ond ):	.43 MM SCF 6421 BOF	D GOR: D B (separ	rator cond )		
	<u>Stock</u> tank	Atmosphere : Tank temperature :		<sup>•</sup> F <sup>•</sup> F	0-1 at 60 *F : _	6029 BOP			
		00 WLR: uid:EVACUATED			juration :	38 MIN			
		ons of the shipping bottl 23 BAR Temp:							
	Shipping bot	<u>C_ IDENTIFIC</u> ttle No : <u>A-14754</u>	CATION OF THE	SAMPLE _		Shipping orde	er No :		
	Addressee : _								
	Coupied with Bottom ho					GAS			
	Ê stan e		3021302						
	Measurement conditions. AL Tank BL Meter CL Dump CL D								
~		D _ REMARK	s <u>-</u>			Visa	Chief Operator		
P 12									
00									
٤l				ويوردونه والمراجعين ويورجها					

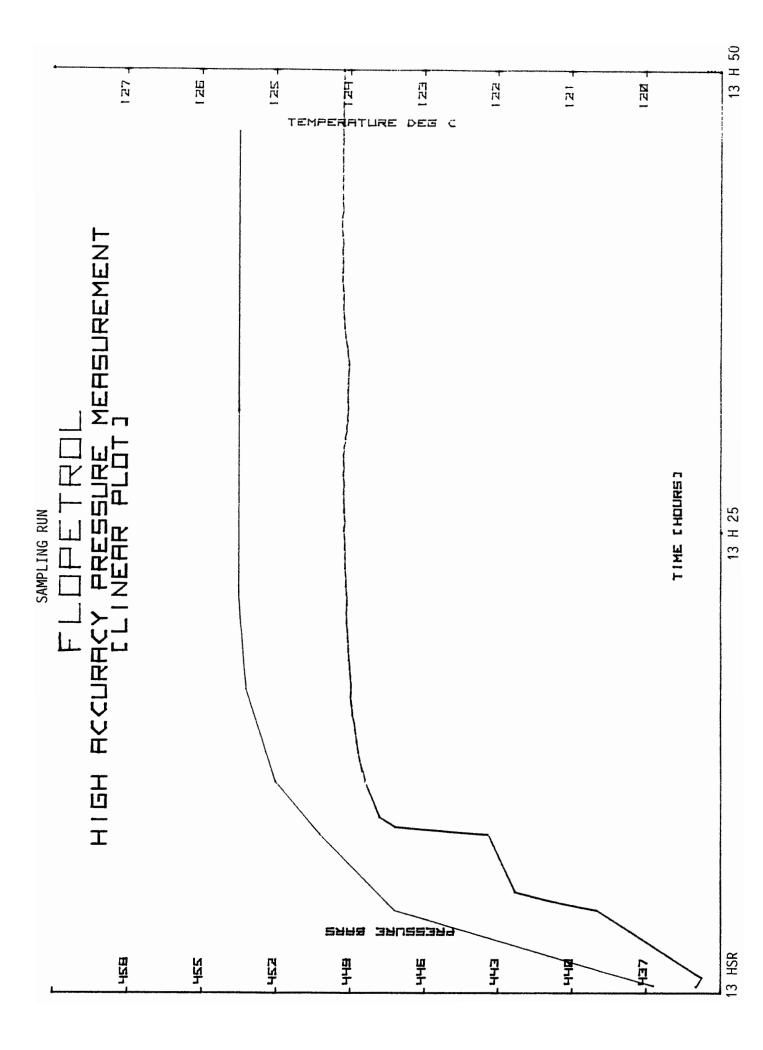
FLOPETROL	Client :s	STATOIL			2			
Base :	Field :: Well ::	84/10 ALPH 84/10-16	A	Page : 50 Report N*83/2301/3	36			
<u>_ SL</u>	_SURFACE SAMPLING _							
Date of sampling : <u>10.09.83</u> Sample nature : <u>OIL</u>	Date of sampling:       10.09.83       Service order:       Sampling No: 5         Sample nature       OIL       Sampling point:       OIL       SIGHT GLASS-SEP.							
<u>A_RESERVOIR</u> Producing zone : <u>ETIVE</u>	Perforations:	3397-34	07MSample	-				
Depth origin : <u>m RKB</u> Surface elevation: <u>160 m RKB</u>								
<u>Bottom hole</u> Initial pressure <u>static</u> Latest pressure measure <u>conditions</u> Temperature	: <u>540 BAR</u> d : <u>458.8 °C</u> : <u>123.9 °C</u>	at depat depat depat dep	oth: <u>3405</u> oth: <u>3405</u> oth: <u>3405</u>	64m         date :         10.09.83           64m         date :         10.09.83           64m         date :         10.09.83				
<u>B- MEASUREM</u> Time at which sample was taken:	ENT AND SAL	MPLING C	ONDITIONS sed since stabi	= 5 hr 53 m	mir —			
<u>dynamic</u> Bottom hole pressure : <u>conditions</u> Bottom hole temp :	<u>306.2 ВА</u> 128.6 <sup>0</sup>	Rat depth: Cat depth:	3405.0	bWell head temp :         77°F           54mdate :         10.09           .648ate :         10.09	• .8: • .8:			
Flow measurement of sampled gas = G Values used for calculations : Fb=	iravity(air 1): 816.13, F <sub>g</sub> =	0.670 1.2217, y	Factor Fpv	$= \frac{1}{\sqrt{2}}: \frac{1.0198}{1.0198}$ Ftf = 0.9309				
Values used for calculations :       Fb=         Separator       Pressure :315       PSIG         Temp       :140       *F	<u>Rates</u> – Gas Oil (separator co	:6.	.40 MM SCF 6454 BOF	D GOR: 982 D B (separator cond)				
<u>Stock</u> Atmosphere : <u>tank</u> Tank temperature :	mmHg	F (	Dil at 60 °F : .	6029 BOPD BOPD [A]B]C]a	α			
BSW:0% WLR:	0/0							
Transfering fluid :Hg		Transfer du	uration :	41 MIN				
Final conditions of the shipping bottle : Pressure :	56 <sup>0</sup> F							
<u>C_ IDENTIFICA</u> Shipping bottle No : <u>83021412</u> Addressee :	TION OF THE S	<u>SAMPLE _</u> by:		Shipping order No :				
Coupled with	LIQUID			GAS				
Bottom hole samples No					_			
Surface samples No								
Measurement conditions, A_ Tank . B_ Meter . C_ Dump . a_Corrected with shrinkage tester. b_ Corrected with tank .								
D _ REMARKS _ Visa Chief Operato								
25 cc Hg LEFT IN OIL BOTTLE SEPARATOR SHINKAGE: 4.2% METER FACTOR: .9938 FOR SEPARATOR CONDITION.								

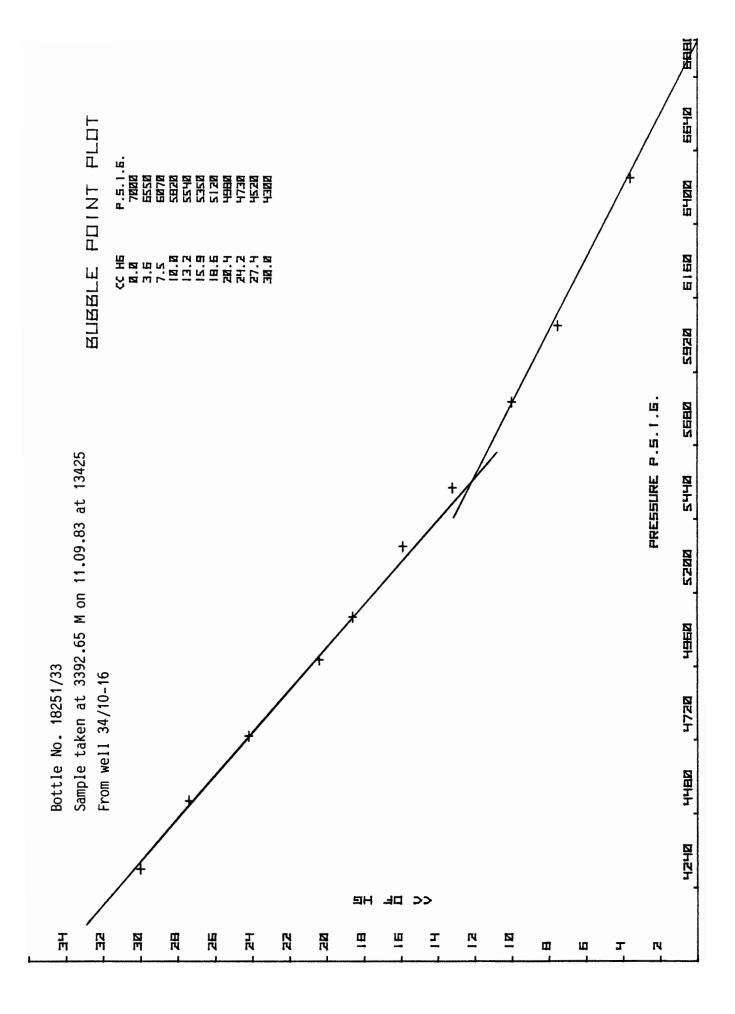
FLOPETR		STATOIL						
Base :		84/10 ALPHA 84/10-16	Page : 51 Report N83/2301/36					
	_SURFACE SA							
Sample nature : GAS	83 Service ord	Sampling poin	Sampling No :6					
<u>A_RE</u> Producing zone: <u>ETIVE</u>	SERVOIR AND WELL Perforations:	CHARACTERISTI 3397-3407M	<u>CS _</u> Sampling interval :					
			Casing Dia :9 5/8" Shoe :					
Bottom hole staticInitial pressure Latest pressure Temperature	: <u>540 BAR</u> : <u>458.8 °C</u> : <u>123.9 °C</u>	at depth: at depth: at depth: at depth:	3405.64m         date :         10.09.83           3405.64m         date :         10.09.83           3405.64m         date :         10.09.83           3405.64m         date :         10.09.83					
$\frac{B-ME}{T}$ Time at which sample was ta	ASUREMENT AND SA ken: 18:56	MPLING COND Time elapsed s	ITIONS _ 5 hr 56 min					
<u>dynamic</u> <u>conditions</u> <u>Bottom hole ten</u>	ssure: <u>306.1 BA</u> pp : <u>128.6<sup>0</sup></u>	R at depth: C at depth:	e: 105.4 b Well head temp : 77°F 3405.64m date : 10.09.83 3405.64m date : 10.09.83					
Flow measurement of sample Values used for calculations :	$\frac{d \text{ gas}}{F_b} = \text{Gravity}(\text{air 1}):$ $F_b = 816.13, F_c = 1$	$\frac{0.670}{F}$	actor Fpv = $\frac{1}{\sqrt{2}}$ : 0047, F_{ff} = 0.9309					
Separator Pressure : 31 Temp : 14	15 PSIG <u>Rates</u> - Gas 10 °F Oil Iseparator C	. 6.40 M	$\frac{V^2}{M} = 0.9309$ $\frac{M}{SCFD} = GOR = \frac{992}{C}$ $\frac{BOPD}{C} = \frac{BOPD}{C}$					
Stock Atmosphere		F Oil a	60 F :BOPD					
BSW:0% W								
Transfering fluid :EVAC	JATED CYLINDER	Transfer duratio	n:33 MIN					
<u>Final conditions of the shippir</u> Pressure : <u>23 BAR</u> Te	g bottle : emp :56°F							
<u>C_IDE</u> Shipping bottle No : <u>A-I</u> Addressee :	NTIFICATION OF THE 4593 sent on :	<u>SAMPLE _</u> b <sub>Y</sub> :	Shipping order No :					
Coupled with	LIQUID		GAS					
Bottom hole samples No								
Surface samples No	83021412							
Measurement conditions,         A_ Tank _       B_ Meter .       C_ Dump .         a_ Corrected with shrinkage tester.       b_ Corrected with tank .								
D _ RE	MARKS _		Visa Chief Operator					

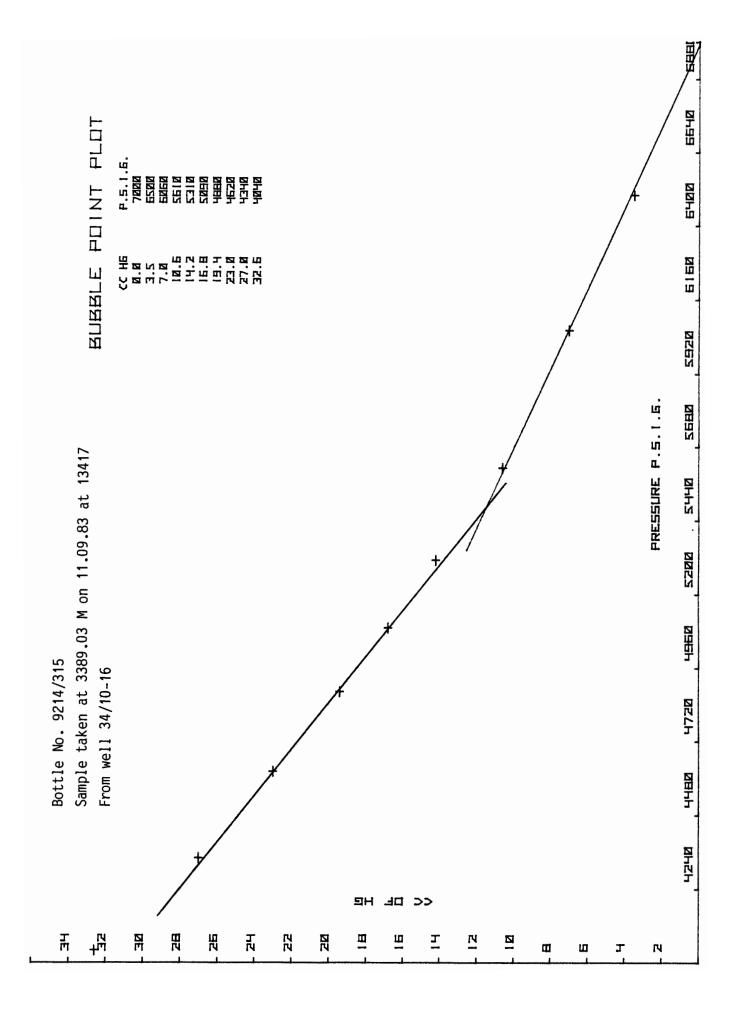
No DOP 127

FLOPETR		lient : <u>s</u>	STATOIL		Sectio	n :ANN	EX <b>4.1</b>	
Base :NWB	Fi W	eld : <u>3</u> /ell : <u>3</u>	84/10 ALPHA 84/10-16		Page Repo	: rt N°:	52 83/2301/3	
	PLING AN CHLUMBERG	D TRANSI ER PSM-C	FER CHARACT 2-83-889 C	ERISTIC apacity	<u>S -</u> 600 co	C		
Well shut in since : Well flowing through choke:			duration Pullir Time elapsed sinc Production durat	e closing ion throu	ywell Igh this c	: hoke : _4		
Bottom hole     pressure       3392.65m     temp.       1     1		l		Sr gr	becific (G avity (C	emp : Gas(air:1) Dil	75°C :672 :846	
ESTIMATED BUBBLE POINT 55 AT SURFACE CONDITIONS AT <u>Transfer</u> <u>conditions</u> By Temp.: <u>50°F</u> Press	30 PSI 50°F • gravity XB	y pumping	Estimated bubb Temp.: Hg [collecte	ed at tran	_ Pressu sfering e	re:	600 cc	
<u>Final conditions of shipping bot</u> Temp : <u>50°F</u> Press	tle after decor sure : <u>4300</u>	mp <u>ression</u> : PSI	25 cc	hdrawn f	or bottle	decomp	ression :	
<u>C IDEN</u> Shipping bottle No: <u>18251</u> Addressee :	/33 sent on	:			Shipping	orderNo	:	
<u>Coupled with</u> Bottom hole samples No	9124/31	1QUID 5				GAS		
Surface samples No								
D <u>– REN</u> FLOW RATES TAKEN AT 13:30	<u>1ARKS _</u>					isa Chu	ef operator	

ſ	FLOPETR		STATOIL	Se	ection :ANNEX41
	Base :NWB	Field :_3 Well :_3	84/10 ALPHA 84/10-16	Pa	age : <u>53</u> eport N°: <u>83/2301/3</u>
	_BO Date of sampling : _11.09.83 Sample nature : _OIL	TTOM HOLE S		Sampl	ing No : .03 M
	<u>A - RES</u> Producing zone: <u>ETIVE</u> Depth origin : <u>mRKB</u> Surface elevation: <u>160 mRKB</u>		3397-3407 m RKB	Sampling	
	Bottom hole staticInitial pressure Latest pressure Temperature	: <u>540 BAR</u> measured : <u>458.8BAR</u> : <u>123.9<sup>o</sup>C</u>	at depth: at depth: at depth:	3405.64 3405.64 3405.64	date :0.08.83 date :0.08.83 date :0.08.83
	<u>B_SAM</u> Sampler Type and No	PLING AND TRANS	FER CHARACTE 2-81-797 Ca	RISTICS pacity : _6(	00 cc
ſ	Time at which sample was tak	en: <u>13:17</u>	Test Runnır duratıon Pulling	ng start : <u>1</u> g end : <u>1</u>	1:46 5:02
ľ	Well shut in since : Well flowing through choke			-	
ſ	Bottom hole pressur 3389.03m temp big big big big big big big big	e: <u>449.0 B</u> ARVell head : <u>125.5<sup>0</sup>C</u>	pressure: <u>223.7</u> temp. : <u>22<sup>0</sup>C</u>	BARASepara	temp : <u>75°C</u>
	Flow rates: 537 M 450.5	SCFD W.L.R. BOPD Prod.G.O.R	: : 1193	Specif gravit	Gas (air:1):672           y         Oil         :846
	Opening pressure of the first v	alve (if necessary) :2 <u>68</u>	30 PSI		
	ESTIMATED BUBBLE POINT 55 AT SURFACE CONDITIONS AT				er bottom hole conditions : ressure :
ſ	Transfer conditions. B Temp. : <u>50°F</u> Press				ing end : <u>600 cc</u> oping bottle : <u>28 cc</u>
Ī	Final conditions of shipping bo Temp : <u>50°F</u> Pres		Hg volume withdrawn for bottle decompression : 25 cc		
	<u>C- IDEN</u> Shipping bottle No.: <u>9214</u> Addressee :		by:	Shi	pping order No :
	Coupled with	LIQUID	•		GAS
	Bottom hole_samples No	19251/33			
	<u>Surface samples No.</u>				
80	<u>D _ Re</u>	MARKS _			Visa Chief operator
No.: DOP 128	FLOW RATES TAKEN AT 13:30	)			







SAMPLING RUN



446.721 (140.205 140.205 137.112 102.212 102.212 137.122 140.122 124.4 124.4 124.4 124.4 124.4 124.4	448.482 444.482 444.482 444.482 444.48444 444.484 444.484 444.484 444.48444 444.484 444.484 444.48444 444.48444 444.484 444.48444 444.48444 444.48444 444.48444 444.48444 444.48444 444.484 444.48444 444.48444 444.48444 444.48444 444.48444 444.48444 444.48444 444.48444 444.48444 444.48444 444.48444 444.48444 444.48444 444.48444 444.48444 444.48444 444.484 444.48444 444.48444 444.484444 444.484444 444.484444 444.484444 444.484444 44	+++ +++ +++ +++ +++ +++ +++ +++
11.3200 11.3400 11.3400 11.3400 11.4130 13.05326 13.1124 13.1124	13. 2500 13. 2500 13. 22.1 13. 2500 13. 25000 13. 25000 13. 25000 13. 25000 13. 25000 13. 25000 13. 25000000000000000000000000000000000000	L3. 3830 L3. 4100 L3. 4100 L3. 4300 L3. 4730 L3. 2300 L3. 3132 L3. 3132 L3. 3031
.3131 402.759 .3331 388.469 .souu lou.469 .sturemp lou.3.3 .4031 19.003 .4300 24.118 .uu22remp 119.9 .0530 442.300 .1300 448.683	446. 448 449. 155 449. 155 449. 155 449. 244 449. 244 449. 244 449. 244 449. 244 449. 242	449. 313 449. 313 442. 324 442. 324 442. 324 442. 324 442. 322 295 296 125. 296 125. 296 445. 242 445. 242
11.3131 11.3131 11.3331 11.3800 11.4810 11.4300 13.0520 13.0520 13.1230 13.0520 13.0520	L3. L53L L3. L53L L3. 243L L3. 243L L3. 254U L3. 254U L3. 254U L3. 254U L3. 254U L3. 254U L3. 254U L3. 254U	L3. 2000 L3. 2000 L3. 423L L3. 4700 L3. 4700 L3. 4901 L3. 2901 L3. 2501 L3. 2501 L3. 2501
400.569 27.15 374.55 130.755 7.464 7.464 7.464 440.823 440.823 447.818 447.818	448. YÌJ 449. IJJ 449. IJJ 449. IJJ 449. 240 125. 5 449. 277 449. 120 449. 210 449. 210	449.310 442.321 442.357 442.357 442.337 5.22.4 5.22.4 5.22.4 2.21.20 2.449.277 2.122 2.449.270
11.3100 11.3308/Fer 11.3308 11.3300 11.4231 13.0520 13.0520 13.1231 13.1231	13.1500 14.1500 14.25141 14.26291 14.26291 14.26291 14.35400 13.35400 13.3530	13.3731 13.4200 13.4200 13.4200 13.4500 13.4500 13.5300 13.5300 13.5300
410.273 392.125 376.191 136.191 7.403 7.403 7.403 7.403 447.175 447.186 448.524	448.036 449.036 449.100 125.27 449.227 449.257 449.257 449.114 447.114	449.300 449.300 449.305 449.305 449.350 449.350 449.221 449.169 449.144
11. 3031 11. 3031 11. 3500 11. 3500 11. 3500 11. 4200 13. 04300 13. 04300 13. 1200	13.1430 13.1430 13.1031 13.2427 13.2330 13.2330 13.2330 13.2330 13.2330 13.2330 13.2330 13.2330	13.3700 15.3931 13.3931 13.4130 13.4431 13.4631 13.2600 13.2500 13.2500 13.2500
3db.859 395.619 395.619 341.510 140.077 211.230 211.275 241.090 244.44 440.476 444.476	440.793 440.793 444.071 449.105 449.105 449.204 449.205 115 115 110 00	0,10,10,00 1,00,00
222000000000000000000000000000000000000	v 13. 1400 4460.793 13. 1025 feilip 125.4 13. 1031 449.155 13. 2300 449.155 13. 2300 449.224 13. 2731 449.224 13. 2731 449.244 13. 3431 449.211 13. 3431 449.211	7 13.3000 Emp 125.5 13.3000 449.337 13.4531 449.507 13.4531 449.542 13.4600 449.524 13.2731 449.529 13.2731 449.520 13.3200 449.201 13.3451 449.100
Reder 11.30 IRFACE 11.30 IECK 11.30 IECK 11.30 IECK 11.30 IECK 11.40 IECK 11.40 IEC	(TT]],J	244 I 14

