34/10 - 5

Well Testing

ient : STATOIL

FLOPETROL	Client : STATOIL	Section : INDEX
Base : STAVANGER	Field :	Page : 1
	Well : 34/10-5	Report N : 80/2301/02

INDEX

Flopetrol Chief operater	Client representativ
Name : P. Gaymard.	Name :

- TEST PROCEDURE -

DST No.1
Halliburton opens APR Valve
Well open on 20/64 for clean-up
Through separator when BSW <1%
Shut in well in to rig up wire line
Flow well on 8/64
Sheet in to run bottom hole samplers
Open up well on 8/64 for sampling flow.
Shut in to get samplers out of hole
Open up well on 24/64, and increased choke
size when flow stable for one hour, until
well produces sand.
Shut in for build up.

- SEQUENCE OF EVENTS -

DATE	TIME	OPERATION
28/12-79		Exercise bellows on Ameradas
	02.10	Hang Ameradas in tail pipe on DST hanger
29/12-79	04.45	Start surface sampling
		Take two oil samples and two gas samples
	08.30	Prepare bottom hole samplers
	08.50	Set clocks on samplers and put them on wire line string
	09.30	Otis starts re-running samplers in the hole
		well flowing on 8/64
	10.16	Samplers on bottom (6000ft)
	11.50	Pull samplers out of the hole
	12.15	Take samplers out of lubricator
	12.30	Start transfer
	19.00	Finish transfer
30/12-79	10.00	Take Ameradas out of DST string
	11.00	Start reading calibrations on pressure recording
		END OF TEST.

FLOPETROL

DIVISION : NUD

BASE : STAVANGER

REPORT N°: 80/2301/02

Well Testing Report
Annexes

Client : STATOIL

Field : Well : 34/10-5

Zone : BRENT SAND
DELTA STRUCTURE

Date : 28/12 - 30/12 1979.

INDEX of ANNEXES

- BOTTOM HOLE PRESSURE GAUGE CALIBRATION SHEET -

DATE : 18/12 1979 CALIBRATION No. : 1

- EQUIPMENT DATA -

Calibration cell No. : 2147 Manufacturer : Flopetrol
Dead weight tester No. : 1287 Manufacturer : Coleman Range : 10.000 psi
Recording element No. : - Manufacturer : G.R.C.
Pressure element No. : 31329 Manufacturer : G.R.C. Range : 60.000 psi

- MISCELLANEOUS INFORMATION -

Base line drawing temperature : AMB
Reference line data - temperature : - - pressure P_R : - - reading Y_R : -
Calibration data - temperature : 160°F - step drawing : ☒ with crank ☐ with clock

Equivalent pressure p of level difference between Dwt and bellows
Level difference : ☐ + in case of Dwt above
Oil specific gravity : p = zero ☐ - in case of Dwt beneath bellows

- CALIBRATION READING AND CALCULATIONS -

P (Dwt) PSIG	Y INCH	ΔY INCH	Y^2 Units on this line -	Y P	Pc = KY + a PSIG	C = P - Pc PSIG
500	0.1665				502.29	-2.29
1000	0.3322	.1657			1002.61	-2.61
1500	0.4968	.1646			1499.61	0.39
2000	0.6616	.1648			1997.21	2.78
2500	0.8275	.1659			2498.14	1.86
3000	0.9928	.1653			2997.25	2.75
3500	1.1589	.1661			3498.78	1.22
4000	1.3252	.1663			4000.91	-0.91
4500	1.4910	.1658			4501.53	-1.53
5000	1.6567	.1657			5001.85	-1.85
5500	1.8211	.1644			5498.24	1.76
6000	1.9878	.1667			6001.58	11.58
		Σ			Σ+ : 10.76 Σ- : 10.77	

$A = \frac{\Sigma P}{n} =$ _____ $B = \frac{\Sigma Y}{n} =$ _____

$D = \frac{\Sigma (YP)}{\Sigma Y} =$ _____ $C = \frac{\Sigma (Y^2)}{\Sigma Y} =$ _____ $K = \frac{D - A}{C - B} =$ 3019.4283

$a' = A - BK =$ -0.4397 $a' = D - CK =$ -0.4397

- FINAL RESULTS -

$K =$ 3019.4283 /psi/in $P_{RC} = K Y_R + a =$ _____
$a = a' + p =$ -0.4397 psig

BOTTOM HOLE PRESSURE GAUGE CALIBRATION SHEET

Page a)

DATE : 18/12 1979 CALIBRATION No. : 1

EQUIPMENT DATA

Calibration cell No. : 2147 Manufacturer : Flopetrol
Dead weight tester No. : 1287 Manufacturer : Coleman Range : 10.000 psi
Recording element No. : - Manufacturer : G.R.C.
Pressure element No. : 8167 Manufacturer : G.R.C. Range : 8000 psi

MISCELLANEOUS INFORMATION

Base line drawing temperature : AMB
Reference line data - temperature : - - pressure P_R : - - reading Y_R : -
Calibration data - temperature : 160°F - step drawing : ☒ with crank ☐ with clock

Equivalent pressure p of level difference between Dwt and bellows
Level difference : ☐ + in case of Dwt above
Oil specific gravity : p = zero ☐ - in case of Dwt beneath bellows.

CALIBRATION READING AND CALCULATIONS

P (Dwt) PSIG	Y INCH	ΔY INCH	Y^2 Units on this line -	Y P	Pc = KY + a PSIG	C = P - Pc PSIG
500	0.1191				487.52	12.48
1000	0.2400	.1209			990.60	9.40
1500	0.3616	.1216			1496.59	3.41
2000	0.4831	.1215			2002.17	-2.17
2500	0.6033	.1202			2502.33	-2.33
3000	0.7240	.1207			3004.58	-4.58
3500	0.8445	.1205			3505.99	-5.99
4000	0.9653	.1208			4008.66	-8.66
4500	1.0849	.1196			4506.32	-6.32
5000	1.2060	.1211			5010.24	-10.24
5500	1.3260	.1200			5509.57	- 9.57
	Rest of calibration on next page					
		Σ				Σ+ : Σ- :

$A = \frac{\Sigma P}{n} =$ $B = \frac{\Sigma Y}{n} =$ $K = \frac{D - A}{C - B} =$

$D = \frac{\Sigma (YP)}{\Sigma Y} =$ $C = \frac{\Sigma (Y^2)}{\Sigma Y} =$

$a' = A - BK =$ $a' = D - CK =$

FINAL RESULTS

$K =$ $P_{RC} = K Y_R + a =$

$a = a' + p =$

No DOP 114

BOTTOM HOLE PRESSURE GAUGE CALIBRATION SHEET Page b)

DATE : 18/12 1979 CALIBRATION No. : 1

EQUIPMENT DATA

Calibration cell No. : 2147 Manufacturer : Flopetrol
Dead weight tester No. : 1287 Manufacturer : Coleman Range : 10.000 psi
Recording element No. : - Manufacturer : G.R.C.
Pressure element No. : 8167 Manufacturer : G.R.C. Range : 8000 psi

MISCELLANEOUS INFORMATION

Base line drawing temperature : AMB
Reference line data - temperature : - pressure P_R : - reading Y_R : -
Calibration data - temperature : 160°F - step drawing : ☒ with crank ☐ with clock

Equivalent pressure p of level difference between Dwt and bellows
Level difference : ☐ + in case of Dwt above
Oil specific gravity : p = zero ☐ - in case of Dwt beneath bellows.

CALIBRATION READING AND CALCULATIONS

P (Dwt)	Y	ΔY	Y^2	Y P	Pc = KY + a	C = P - Pc
PSIG	INCH		Units on this line -		PSIG	PSIG
6000	1.4448	.1188			6003.91	-3.91
6500	1.5635	.1187			6497.83	2.17
7000	1.6833	.1198			6996.33	3.66
2500	1.8017	.1184			7489.01	10.99
			Completed with H.P. 65.			
		Σ			Σ+ = 53.76	
					Σ- = 53.77	

$A = \frac{\Sigma P}{n} =$ $B = \frac{\Sigma Y}{n} =$

$D = \frac{\Sigma (YP)}{\Sigma Y} =$ $C = \frac{\Sigma (Y^2)}{\Sigma Y} =$ $K = \frac{D - A}{C - B} =$

$a' = A - BK =$ $a' = D - CK =$

FINAL RESULTS

$K =$ 4161.1140 psig/inch $P_{RC} = K Y_R + a =$

$a = a' + p =$ -8.0680 psig

BOTTOM HOLE PRESSURE CALCULATIONS

Well producing through . ~~casing~~ / tubing / ~~drill pipe~~
Bottom hole temperature : - at depth - with -

INSTRUMENT DATA	LOWER GAUGE	UPPER GAUGE
Instrument type	RPG3	RPG3
Press element No and range	31329 6000 psi	8167 8000 psi
Recording element No.	A5640	37644
Clock No. and capacity	10853 72 hrs	E5578 72 hrs
CALIBRATION DATA		
Calibration No. and date :		
Calibration temperature :	160°F	160°F
Calibration range	0- 6000 / 500 psi	0- 8000 / 500 psi
K	3019.428 psig/inch	4161.1140 psi/inch
a, (calibrated chart) :	-0.4397 psig	-8.0680 psi
P_{RC}, (non calibrated chart) :	-	-

DATE - TIME		Choke	W.H.	Depth	LOWER GAUGE			UPPER GAUGE		
Time	Cumul	size	pressure		Y	C *	P	Y	C *	P
	Hrs/Min	64th	psi	M	Inches		PSI	Inches		PSI
29/12	1979									
00.56		00	1660	1919	1.4980		4523	1.0879		4519
01.00	00.00	00	1614	"	1.4980		4523	1.0879		4519
01.01	00.01	48/64		"	1.4873		4490	1.0811		4490
01.02	00.02	20/64		"	1.4871		4489	1.0811		4490
01.05	00.05	"	1520	"	1.4873		4490	1.0817		4493
01.10	00.10	"	1640	"	1.4860		4486	1.0810		4490
01.15	00.15	"	1775	"	1.4857		4486	1.0800		4486
01.20	00.20	"	1915	"	1.4930		4509	1.0842		4503
01.25	00.25	"	2120	"	1.4875		4491	1.0817		4493
01.30	00.30	"	2260	"	1.4855		4485	1.0800		4486
01.45	00.45	"	2255	"	1.4843		4481	1.0788		4481
02.00	01.00	"	2250	"	1.4838		4480	1.0786		4480
02.15	01.15	"	2255	"	1.4823		4475	1.0775		4476
02.30	01.30	"	2265	"	1.4823		4475	1.0775		4476
02.45	01.45	"	2260	"	1.4819		4474	1.0770		4473
03.00	02.00	"	2265	"	1.4812		4472	1.0770		4473
03.15	02.15	"	2255	"	1.4812		4472	1.0766		4472

REMARKS :

* Only used if its value is significant compared to the accuracy of the gauge

Date - time		Choke size	W.H. pressure	LOWER GAUGE				UPPER GAUGE		
Time	Cumul			Depth	Y	C*	P	Y	C*	P
	HRS/min	64th	psi	m	inches		psi	inches		psi
03.30	02.30	20/64	2255	1919	1.4805		4470	1.0762		4470
04.00	03.00	"	2260	"	1.4805		4470	1.0760		4469
04.30	03.30	"	2270	"	1.4805		4470	1.0759		4469
05.00	04.00	"	2275	"	1.4802		4469	1.0759		4469
05.30	04.30	"	2275	"	1.4802		4469	1.0759		4469
06.00	05.00	"	2275	"	1.4802		4469	1.0759		4469
06.10	05.10	"	2275	"	1.4802		4469	1.0759		4469
06.12	00.02	00		"	1.4970		4520	1.0865		4512
06.15	00.05	"	2395	"	1.4979		4522	1.0877		4518
06.20	00.10	"		"	1.4985		2524	1.0885		4521
06.25	00.15	"		"	1.4980		4523	1.0885		4521
06.30	00.20	"		"	1.4989		4525	1.0888		4523
06.45	00.35	"		"	1.4992		4526	1.0889		4523
07.00	00.50	"		"	1.4992		4526	1.0889		4523
07.15	01.05	"		"	1.4992		4526	1.0889		4523
07.30	01.20	"		"	1.4992		4526	1.0889		4523
07.45	01.35	"		"	1.4992		4526	1.0889		4523
07.53	00.05	8/64	2355	"	1.4985		4524	1.0886		4522
07.58	00.10	"		"	1.4985		4524	1.0886		4522
08.03	00.15	"		"	1.4985		4524	1.0886		4522
08.18	00.30	"		"	1.4985		4524	1.0886		4522
08.33	00.45	"	2360	"	1.4985		4524	1.0886		4522
08.34	00.46	"		"	1.4985		4524	1.0886		4522
0839	00.05	00.		"	1.5003		4530	1.0898		4527
08.44	00.10	"		"	1.5003		4530	1.0898		4527
08.49	00.15	"		"	1.5003		4530	1.0898		4527
09.04	00.30	"		"	1.5003		4530	1.0898		4527
09.19	00.45	"		"	1.5003		4530	1.0898		4527
09.28	00.54	00.	2385	1919	1.5003		4530	1.0898		4527

Date - time		Choke size	W.H. pressure	LOWER GAUGE				UPPER GAUGE		
Time	Cumul			Depth	Y	C*	P	Y	C*	P
	HRS/min	64th	psi	m	inches		psi	inches		psi
09.28	00.54	00	2385	1919	1.5003		4530	1.0898		4527
09.33	00.05	8/64		"	1.4988		4525	1.0888		4523
09.38	00.10	"		"	1. 4988		4525	1.0888		4523
09.43	00.15	"	2355	"	1.4988		4525	1.0888		4523
09.58	00.30	"	2359	"	1.4988		4525	1.0888		4523
10.13	00.45	"	2360	"	1.4988		4525	1.0888		4523
10.28	01.00	"	2360	"	1.4988		4525	1.0888		4523
10.43	01.15	8/64	2360	1919	1.4988		4525	1.0888		4523
10.58	01.30	"	"	"	1.4988		4525	1.0888		4523
11.13	01.45	"	"	"	1.4988		4525	1.0888		4523
11.28	02.00	"	"	"	1.4988		4525	1.0888		4523
11.43	02.15	"	"	"	1.4988		4525	1.0888		4523
11.55	02.27	"	"	"	1.4988		4525	1.0888		4523
12.00	00.05	00	2370	"	1.5004		4530	1.0902		4528
12.05	00.10	"		"	1.5004		4530	1.0902		4528
12.10	00.15	"		"	1.5004		4530	1.0902		4528
12.25	00.30	"		"	1.5004		4530	1.0902		4528
12.40	00.45	"		"	1.5004		4530	1.0902		4528
12.47	00.52	"		"	1.5004		4530	1.0902		4528
12.48	00.01	24/64	2140	"	1.4769		4459	1.0739		4460
12.50	00.03	"	2129	"	1.4750		4453	1.0722		4453
12.55	00.08	"	2142	"	1.4740		4450	1.0713		4450
13.00	00.13	"	2160	"	1.4734		4448	1.0709		4448
13.15	00.28	"	2167	"	1.4723		4445	1.0709		4448
13.30	00.43	"	2168	"	1.4723		4445	1.0709		4448
13.45	00.58	"	2189	"	1.4754		4454	1.0725		4455
14.00	01.13	"	2190	"	1.4754		4454	1.0725		4455
14.04	01.17	"	2190	"	1.4754		4454	1.0725		4455
14.05	00.01	28/64	2100	"	1.4679		4432	1.0676		4434

Date - time		Choke size	W.H. pressure	LOWER GAUGE				UPPER GAUGE		
Time	Cumul			Depth	Y	C*	P	Y	C*	P
	Hrs/min	64th	psi	m	inches		psi	inches		psi
14.10	00.06	28/64	2094	1919	1.4676		4431	1.0671		4432
14.15	00.11	"	2100	"	1.4676		4431	1.0671		4432
14.30	00.26	"	2102	"	1.4673		4430	1.0670		4432
14.45	00.41	"	2102	"	1.4673		4430	1.0670		4432
15.00	00.56	"	2102	"	1.4673		4430	1.0670		4432
15.15	01.11	"	2102	"	1.4673		4430	1.0670		4432
15.17	01.13	"	2102	"	1.4673		4430	1.0670		4432
15.18	00.01	24/64		"	1.4753		4454	1.0705		4446
15.19	00.02	"		"	1.4754		4454	1.0715		4450
15.20	00.03	"		"	1.4754		4454	1.0718		4452
15.22	00.05	"		"	1.4754		4454	1.0718		4452
15.23	00.01	32/64		"	1.4579		4402	1.0641		4419
15.25	00.03	"	1975	"	1.4568		4398	1.0605		4405
15.30	00.08	"	1977	"	1.4568		4398	1.0592		4399
15.35	00.13	"	1980	"	1.4562		4396	1.0589		4398
15.40	00.18	"	1980	"	1.4562		4396	1.0589		4398
15.45	00.23	"	1980	"	1.4565		4397	1.0589		4398
16.00	00.38	"	1992	"	1.4600		4408	1.0612		4407
16.15	00.53	"	1990	"	1.4573		4400	1.0595		4401
16.30	01.08	"	1990	"	1.4573		4400	1.0595		4401
16.45	01.23	"	1995	"	1.4573		4400	1.0595		4401
17.00	01.38	"	1995	"	1.4573		4400	1.0595		4401
17.15	01.53	"	1995	"	1.4562		4396	1.0590		4398
17.30	02.08	"	1995	"	1.4565		4397	1.0590		4398
17.45	02.23	"	1995	"	1.4565		4397	1.0590		4398
18.00	02.38	"	1995	"	1.4565		4397	1.0590		4398
18.01	02.39	"	1995	"	1.4565		4397	1.0590		4398
			Shut in well on APR Valve							

Date - time		Choke size	W.H. pressure	LOWER GAUGE				UPPER GAUGE		
Time	Cumul			Depth	Y	C*	P	Y	C*	P
	Hrs/min	64th	psi	m	inches		psi	inches		psi
18.02	00.01	00		1919	1.4904		4500	1.0826		4497
18.03	00.02	"		"	1.4910		4502	1.0826		4497
18.04	00.03	"		"	1.4914		4503	1.0830		4498
18.05	00.04	"		"	1.4919		4504	1.0836		4501
18.06	00.05	"		"	1.4924		4506	1.0840		4503
18.07	00.06	"		"	1.4927		4507	1.0842		4503
18.08	00.07	"		1919	1.4930		4508	1.0842		4503
18.09	00.08	"		"	1.4934		4509	1.0845		4505
18.10	00.09	"		"	1.4956		4515	1.0861		4511
18.11	00.10	"		"	1.4958		4516	1.0865		4513
18.16	00.15	"		"	1.4965		4518	1.0870		4515
18.21	00.20	"		"	1.4970		4520	1.0875		4517
18.26	00.25	"		"	1.4975		4521	1.0880		4519
18.31	00.30	"		"	1.4975		4521	1.0880		4519
18.46	00.45	"		"	1.4980		4523	1.0882		4520
19.01	01.00	"		"	1.4986		4524	1.0888		4522
19.16	01.15	"		"	1.4992		4526	1.0888		4522
19.31	01.30	"		"	1.4995		4527	1.0890		4523
20.01	02.00	"		"	1.4997		4528	1.0890		4523
20.31	02.30	"		"	1.4997		4528	1.0890		4523
21.01	03.00	"		"	1.5000		4529	1.0890		4523
21.21	03.20	"		"	1.5000		4529	1.0890		4523
				END OF BUILD-UP.						

- BOTTOM HOLE SAMPLING -

Date of sampling : 29/12 1979 Service order : Sampling No. : 1
Sample nature : Oil Sampling depth : 1830 m

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone : Brent Sand Perforations : 1925-1927m Sampling interval :
Depth origin : R.K.B. Tubing Dia. : 2 7/8 Casing Dia. : 7"
Surface elevation : 161 M Shoe : 1925M(tail pipe) Shoe : 2209 M

Bottom hole static conditions

Initial pressure : at depth : date :
Latest pressure measured : 4529psig at depth : 1919m. date : 29/12-79
Temperature : at depth : date :

B - SAMPLING AND TRANSFER CHARACTERISTICS -

Sampler : Type and No. FLOPETROL Capacity : 600 cc

Time at which sample was taken : 11.30

Test duration — Running start : 09.30 — Pulling end : 12.15

☐ Well shut in since :
☒ Well flowing through choke : 8/64

Time elapsed since closing well :
Production duration through this choke : 2 Hrs

Production cond during sampling or before closing

Bottom hole 1919m	pressure : 4525psi temp :	Well head	pressure : 2360 temp. :	Separator	pressure : temp. :
Flow rates : - SCFD On tank 336 BOPD		W.L.R. : Prod. G.O.R. :		Specific gravity	Gas (air : 1) : Oil :

Opening pressure of the first valve (if necessary): 2320 psi

Estimated bubble point under bottom hole conditions :
Temp : Pressure :
No estimation possible

Transfer conditions. ☐ By gravity ☐ By pumping
Temp. : Pressure :

Hg volume — collected at transfering end : 600 cc — remaining in the shipping bottle: 15 cc

Final conditions of shipping bottle after decompression :
Temp. : 45°F Pressure : 2550 psi

Hg volume withdrawn for bottle decompression :
13 cc

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No. : 20475/67 sent on : by : Shipping order No. :
Addressee :

Coupled with

	Liquid	Gas
Bottom hole samples No. : 2	16251 -35	
Surface samples No. :		

D - REMARKS -

For further information refer to Otis/Lynes report.

Visa Chief operator

P. Gaymard

No DOP 128

FLOPETROL

Base :

Client : STATOIL

Field :

Well : 34/10-5

Section : Annex 4.1

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Report N° : 80/2301/02

- BOTTOM HOLE SAMPLING -

Date of sampling : 29/12 1979 Service order : Sampling No. : 2

Sample nature : Oil Sampling depth : 1830 m

A - RESERVOIR AND WELL CHARACTERISTICS -

Producing zone : Brent Sand Perforations : 1925-1927m Sampling interval :

Depth origin : R.K.B. Tubing Dia. : 2 7/8" Casing Dia. : 7"

Surface elevation : 161m Shoe : 1925m (tail pipe) Shoe : 2209m

Bottom hole static conditions

Initial pressure : at depth : date :

Latest pressure measured : 4529psig at depth : 1919m. date : 29/12-79

Temperature : at depth : date :

B - SAMPLING AND TRANSFER CHARACTERISTICS -

Sampler : Type and No. Flopetrol Capacity : 600 cc

Time at which sample was taken : 11.30

Test duration — Running start : 09.30 Pulling end : 12.15

☐ Well shut in since :

☒ Well flowing through choke : 8/64

Time elapsed since closing well :

Production duration through this choke : 2 hrs.

Production cond during sampling or before closing

Bottom hole 1919m	pressure : 4525psi temp :	Well head	pressure : 2360psi temp. :	Separator	pressure : temp. :
Flow rates : — SCFD On tank 336 BOPD		W.L.R. : Prod. G.O.R. :		Specific gravity	Gas (air : 1) : Oil :

Opening pressure of the first valve (if necessary): 2120 psi

Estimated bubble point under bottom hole conditions :

Temp : Pressure : No possible estimation

Transfer conditions. ☐ By gravity ☐ By pumping

Temp. : Pressure :

Hg volume — collected at transfering end : 600 cc; remaining in the shipping bottle : 18 cc

Final conditions of shipping bottle after decompression :

Temp. : 45 °F Pressure : 2560 psi

Hg volume withdrawn for bottle decompression : 10 cc

C - IDENTIFICATION OF THE SAMPLE -

Shipping bottle No. : 16251/35 sent on : by : Shipping order No. :

Addressee :

Coupled with	Liquid	Gas
Bottom hole samples No. :	No 1, 20475/67	
Surface samples No. :		

D - REMARKS -

For further information refer to Otis/Lynes reports.

Visa Chief operator

P. Gaymard

No DOP 128

FLOPETROL

Base : STAVANGER

Client : STATOIL

Field :

Well : 34/10-5

Section : ANNEX 42

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Report N°: 80/2301/02

SURFACE SAMPLING

Date of sampling : 29/12 1980 Service order : Sampling No. : 1

Sample nature : Oil Sampling point : Otis test seperator

A - RESERVOIR AND WELL CHARACTERISTICS-

Producing zone : Brent Sand Perforations : 1925-1927 Sampling interval :

Depth origin : RKB Tubing Dia. : 2 7/8" Casing Dia. : 7"

Surface elevation : 161 m Shoe : 1925 (tail pipe) Shoe : 2209m

Bottom hole static conditions

Intial pressure	:		at depth :		date :
Latest pressure measured	:	4529 psig	at depth :	1919m	date : 29/12-79.
Temperature	:		at depth :		date :

B - MEASUREMENT AND SAMPLING CONDITIONS

Time at which sample was taken : 0500 Time elapsed since stabilisation : 2.5 Hrs.

Bottom hole dynamic conditions

Choke size : 20/64 since : 0100 Well head pressure : 2275psi Well head temp. : 62°F

Bottom hole pressure : 4469psig at depth : 1919m date : 29/12-79

Bottom hole temp. : at depth : date :

Flow measurement of sampled gas - Gravity (air: 1) : 0.578 Factor Fpv = $\frac{1}{\sqrt{Z}}$:

Values used for calculations :

Separator

Pressure : 125 PSIG Temp. : 70 °F

Rates - Gas : 1.033,000 SCFD

Oil (separator cond.) : 2204 BOPD [C]

GOR : 469 (separator cond.)

Stock tank

Atmosphere : mmHg. °F

Tank temperature : °F

Oil at 60°F : BOPD [A] [B] [C] [a] [b]

BSW : 0.5 % WLR : %

Transfering fluid : Mercury

Transfer duration : 30 mm

Final conditions of the shipping bottle :

Pressure : 80 psi Temp. : 40°F

23 cc Hg left in bottle

C - IDENTIFICATION OF THE SAMPLE

Shipping bottle No. : 20475/75 sent on : by : Shipping order No. :

Addressee :

Coupled with	LIQUID	GAS
Bottom hole samples No.		
Surface samlpes No.	Oil no 2 16251/39	Gas no 1 A 7706 Gas no 2 A 7092

Measurment conditions.

[A] Tank - [B] Meter - [C] Dump -

[a] Corrcted with shrinkage tester - [b] Corrected with tank -

D - REMARKS -

For further details refer to Otis/Lynes report.

Visa Chief Operator

P. Gaymard

DOP 177

FLOPETROL

Base : STAVANGER

Client : STATOIL

Field :

Well : 34/10-5

Section : ANNEX 42

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Report N°: 80/2301/02

SURFACE SAMPLING

Date of sampling : 29/12 1980 Service order : Sampling No. : 1

Sample nature : Gas Sampling point :

A - RESERVOIR AND WELL CHARACTERISTICS--

Producing zone : Perforations : 1925-1927 Sampling interval :

Depth origin : RKB Tubing Dia. : 2 7/8" Casing Dia. : 7"

Surface elevation : 161 m Shoe : 1925(tail pipe) Shoe : 2209m

Bottom hole static conditions					
	Intial pressure :		at depth :	date :	
	Latest pressure measured :	4529 psig	at depth : 1919m	date : 29/12-79	
	Temperature :		at depth :	date :	

B - MEASUREMENT AND SAMPLING CONDITIONS

Time at which sample was taken : 05.00 Time elapsed since stabilisation : 2.5 Hrs.

Bottom hole dynamic conditions				
Choke size : 20/64	since : 01.00	Well head pressure : 2275psi		Well head temp. : 62°F
Bottom hole pressure : 4469 psig	at depth : 1919m		date : 29/12-79	
Bottom hole temp. :	at depth :		date :	

Flow measurement of sampled gas - Gravity (air: 1) : 0.578 Factor Fpv = $\frac{1}{\sqrt{Z}}$:

Values used for calculations :

Separator					
Pressure : 125 PSIG	Rates - Gas : 1.033.000 SCFD		GOR : 469		
Temp. : 70 °F	Oil (separator cond.) : 2204 BOPD	B C	(separator cond.)		

Stock tank		
Atmosphere : mmHg. °F	Oil at 60°F : BOPD	A B C a b
Tank temperature : °F		

BSW : 0.5 % WLR : %

Transfering fluid : Vacuum Transfer duration : 30 min.

Final conditions of the shipping bottle :

Pressure : 125 psi Temp. : 40°F

C - IDENTIFICATION OF THE SAMPLE

Shipping bottle No. : A 7706 sent on : by : Shipping order No. :

Addressee :

Coupled with	LIQUID		GAS	
Bottom hole samples No.				
Surface samlpes No.	Oil no 1	20475/75	Gas no 2	A7092
	Oil no 2	16251/39		

Measurment conditions.

[A] Tank - [B] Meter - [C] Dump -

[a] Corrcted with shrinkage tester - [b] Corrected with tank -

D - REMARKS -

For further details refer to Otis/Lynes reports.

Visa Chief Operator

P. Gaymard

DOr 127

FLOPETROL

Base : STAVANGER

Client : STATOIL

Field :

Well : 34/10-5

Section : ANNEX 42

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Report N°: 80/2301/02

SURFACE SAMPLING

Date of sampling : 29/12 1979 Service order : Sampling No. : 2

Sample nature : Oil Sampling point : Otis test separator

A - RESERVOIR AND WELL CHARACTERISTICS-

Producing zone : Brent Sand Perforations : 1925-1927 Sampling interval :

Depth origin : RKB Tubing Dia. : 2 7/8" Casing Dia. : 7"

Surface elevation : 161 m Shoe : 1925 (tail pipe) Shoe : 2209 m

Bottom hole static conditions					
Intial pressure :		at depth :		date :	~~29/12-79~~
Latest pressure measured :	4529 psig	at depth :	1919m	date :	
Temperature :		at depth :		date :	

B - MEASUREMENT AND SAMPLING CONDITIONS

Time at which sample was taken : 05.30 Hrs. Time elapsed since stabilisation : 03 Hrs.

Bottom hole dynamic conditions					
Choke size : 20/64	since : 01.00	Well head pressure : 2275psi		Well head temp. : 62°F	
Bottom hole pressure : 4469psig	at depth : 1919m	date : 29/12-79			
Bottom hole temp. :	at depth :	date :			

Flow measurement of sampled gas - Gravity (air: 1) : 0.578 Factor Fpv = $\frac{1}{\sqrt{Z}}$:

Values used for calculations :

Separator					
Pressure : 125 PSIG	Rates - Gas : 1,033,000 SCFD	B	GOR : 469		
Temp. : 70 °F	Oil (separator cond.) : 2204 BOPD	C	(separator cond.)		

Stock tank									
Atmosphere : mmHg. °F	Oil at 60°F : BOPD	A	B	C	a	b
Tank temperature : °F						

BSW : 0.5 % WLR : %

Transfering fluid : Mercury Transfer duration : 30 min

Final conditions of the shipping bottle :

Pressure : 80 psi Temp. : 40°F

23 cc of Hg left in bottle

C - IDENTIFICATION OF THE SAMPLE

Shipping bottle No. : 16251/39 sent on : by : Shipping order No. :

Addressee :

Coupled with	LIQUID		GAS	
Bottom hole samples No.				
Surface samlpes No.	Oil no 1	20475/75	Gas no 1	A 7706
			Gas no 2	A 7092

Measurment conditions.

[A] Tank - [B] Meter - [C] Dump -

[a] Corrcted with shrinkage tester - [b] Corrected with tank -

D - REMARKS -

For further details refer to Otis/Lynes report

Visa Chief Operator

P. Gaymard

DOP 127

FLOPETROL Base : STAVANGER	Client : STATOIL Field : Well : 34/10-5	Section : ANNEX 42 Page : 19 Report N° : 80/2301-02

SURFACE SAMPLING

Date of sampling : 29/12 1979 Service order : Sampling No. : 2
Sample nature : Gas Sampling point : Otis test separator

A - RESERVOIR AND WELL CHARACTERISTICS

Producing zone : Brent Sand Perforations : 1925-1927 Sampling interval :
Depth origin : RKB Tubing Dia. : 2 7/8 Casing Dia. : 7"
Surface elevation : 161 Shoe : 1925m(tail pipe) Shoe : 2209

Bottom hole static conditions	Intial pressure :		at depth :		date :
	Latest pressure measured :	4529 psig	at depth :	1919m	date : 29/12-79
	Temperature :		at depth :		date :

B - MEASUREMENT AND SAMPLING CONDITIONS

Time at which sample was taken : 05.30 Time elapsed since stabilisation : 3 Hrs

Bottom hole dynamic conditions	Choke size : 20/64	since : 01.00	Well head pressure : 2275psi		Well head temp. : 62°F
	Bottom hole pressure : 4469psig	at depth : 1919m		date : 29/12-79	
	Bottom hole temp. :	at depth :		date :	

Flow measurement of sampled gas - Gravity (air: 1) : 0.578 Factor Fpv = $\frac{1}{\sqrt{Z}}$:
Values used for calculations :

Separator	Pressure : 125 PSIG Temp. : 70 °F	Rates - Gas : 1,033,000 SCFD Oil (separator cond.) : 2204 BOPD	B C	GOR : 469 (separator cond.)	
Stock tank	Atmosphere : mmHg. °F Tank temperature : °F	Oil at 60°F : BOPD A B C a b			
BSW : 0.5 %	WLR : %				
Transfering fluid : Vacuum		Transfer duration : 30 min			
Final conditions of the shipping bottle : Pressure : 125 psi Temp. : 40° F					

C - IDENTIFICATION OF THE SAMPLE

Shipping bottle No. : A 7092 sent on : by : Shipping order No. :
Addressee :

Coupled with	LIQUID		GAS	
Bottom hole samples No.				
Surface samlpes No.	Oil no 1	20475/75	Gas no 1	A 7706
	Oil no 2	16251/39		

Measurment conditions.
[A] Tank - [B] Meter - [C] Dump -
[a] Corrcted with shrinkage tester - [b] Corrected with tank -

D - REMARKS -

For further details refer to Otis/Lynes reports.

Visa Chief Operator

P. Gaymard

DOr rz7