

FLOPETROL

| DIVISION | : | EMR/NSD |
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| BASE | = | NWB |
| REPORT N | •: | 83/2301/37 |

Well Testing Report

| Client : | STATOIL | RIG: | ROSS ISLE |
|----------|-------------|--------|--------------------|
| Field : | 34/10 ALPHA | Well - | 34/10-16 DST NO. 2 |
| Zone : | BRENT | Date : | 16 - 18 SEPT. 83 |

| FLOPETROL | ClientSTATOIL | Section <u>- INDEX</u> |
|-----------|--|-----------------------------------|
| Base :NWB | Field = <u>34/10 ALPHA</u> Well = <u>34/10-16</u> | Page : 2 Report N°: 83/2301/37 |

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- 5-WELL COMPLETION DATA -
- 6_SEQUENCE OF EVENTS _
- \square \neg _ well testing data _

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DOP 101

С FLOPETROL

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| ield | :. | 34/10 | - | ALPH |

Base :___NWB

A Page Well : 34/10-16

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_ TEST PROCEDURE _

OBJECTIVES: ESTIMATE PRODUCTIVITY, OBTAIN FLUID SAMPLES ESTIMATE PRESSURE AND TEMPERATURE EVALUATE RESERVOIR PROPERTIES

F

AFTER SCHLUMBERGER HAD PERFORATED 3177 - 3187 METER AND RUN GAUGE RING AND JUNKBASKET. THE TEST STRING WAS RUN USING HALIBURTON TEST TOOLS, FLOPETROL EZ-TREE, LUBRICATOR, FLOWHEAD AND SURFACE TESTING EQUIPMENT. ONE FLOPETROL SDP, AND ONE SPERRY SUN IN F-NIPPLE, 2 SPERRY SUN IN BUNDLE CARRIER.

GAUGES WAS RUN IN WITH STRING.

AFTER ALL TEST EQUIPMENT WAS PRESSURE TESTED TO 420 BAR. THE PACKER WAS SET AT 3152.39 M RKB.

THE LPR-N VALVE WAS OPENED AT 15:04 HRS AT 16.09.83 AND THE WELL WAS OPENED THROUGH A 52/64" POSITIVE CHOKE TO THE SURGE TANK FOR INITIAL FLOW AT 15:13 HRS ON 16.09.83. A TOTAL FLOW OF 1.2 M³ WATER CUSHION WAS FLOWED BACK BEFORE SHUTTING IN FOR INITIAL BUILD-UP AT 15.14.30.

THE WELL WAS OPENED FOR 2ND FLOW AT 16:21 HRS ON A 52/64" POSITIVE CHOKE. GAS REACHED SURFACE AFTER 4 MIN. THE FLOW WAS DIVERTED THROUGH THE SEPARATOR AFTER 44 MIN ON THIS CHOKE WHEN BSW WAS DOWN TO 0%.

2 SETS OF PVT SAMPLES WERE OBTAINED BEFORE SHUTTING IN THE WELL. THE TOTAL 2ND FLOW WAS 550 MIN AND "THE BUILD-UP WAS 539 MIN. THEN THE WELL WAS OPENED ON A 80/64" POSITIV CHOKE FOR 3RD FLOW. THE FLOW WAS DIVERTED THROUGH THE SEPARATOR AFTER 28 MIN. 2 SETS OF PVT SAMPLES WERE OBTAINED BEFORE SHUTTING IN THE WELL. THE 3RD FLOW WAS 423 MIN AND 3RD BUILD-UP WAS 575 MIN.

FLOPETROL Client : <u>STATOIL</u> Section Field : <u>34/10 ALPHA</u> Well : <u>34/10-16</u>

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Base :_____NWB

N°: DOP 103

_ MAIN RESULTS _

Tested interval: <u>BRENDT</u> Perforations: <u>3177-3187 m RKB</u>

| OPERATION | DURATION | BOTTOM HOLE PRESSURE | WELL HEAD PRESSURE | OIL PROD. RATE | GAS PROD.RATE | G.O.R |
|---|------------|-------------------------|-----------------------|-------------------|---------------------|--------------------|
| Units | MIN | BARS | BARS | м ³ /м | msm ³ /m | scm/m ³ |
| INITIAL FLOW 52/64" POS. CHOKE | 1 MIN 30 | SEC | 45.81 | | | |
| INITIAL BUILD-UP | 66 MIN 3 | 30 SEC | 138.89 | | | |
| 2ND FLOW 52/64" POS CHOKE | 550 | | 232.8 | 313.8 | 1.293 | 4105 |
| 2ND BUILD-UP | 539 | | 350.3 | | | |
| 3RD FLOW 80/64" POS. CHOKE | 423 | | 145.2 | 371.1 | 1.647 | 4438 |
| 3RD BUILD-UP | 575 | | 352.3 | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | M RKB | |
| Depth of bo | ottom hole | e measuremen | ts: | Refere | nce: | |
| | | at: | | 80/6/U D | 0010111 66 | 1. |
| Separator g | as gravit | | | | OSITIV .66 | 4 |
| STO gravit | | oke size | 80/64" POSI | TIV .7832 60 | /60 | |
| BSW : Water cut : | | | | | | |
| REMARKS AND OTHER OPERATIONS | | | | | | |
| ALL FIGURES | ARE THOSE | LAST RECORD | ED | | | |
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| FLOPETROL | Client : | Section : 3 |
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| | vven : <u>34/10-16</u> | Report N : 03/2301/3/ |
| _ OPERATING AND | D MEASURING CONDITION | <u>s _</u> |
| | | |
| A <u>TYPE OF (</u> | GAUGE | |
| <u>BOTTOM HOLE</u> : Pressure : <u>SDP(CR</u> Temperature : <u>SDR(CR</u> | <u>G) MK III S</u> PERRY SUN <u>G) MK III S</u> PERRY SUN | |
| <u>WELL HEAD</u> : Pressure : <u>DW</u> T, Fo Temperature : <u>FOXBOR</u> | OXBORO, MR. SIX O | |
| <u>SEPARATOR</u> : Pressure : <u>BARTON</u> Temperature : <u>BARTON</u> | | |
| B PRODUCTION | N RATE CONDITIONS AND SOURCES | |
| OIL PRODUCTION RATE Tank K Floco Meter Dump K Rotron | Reference conditions. Separator X Atmospheric pressure 60°F | Shrinkage _measurement _ X With tank With shrinkage tester |
| GAS PRODUCTION RATE | Standard_conditions | - |
| WATER PRODUCTION RATE Tank Meter | 15°C 760 MMHG | |
| C <u>- well D</u> A | ATA _ | |
| WELL STATE DURING SUR | VEY : | |
| Main casing size_9 Tubing size_5"VAM Perforations: Zone_BRENDT_Fr | yh: tubing / drill pipe / casing 5/8"set at Total wel set at <u>_3180.95</u> Packer <u>_R</u> rom <u>3177</u> to <u>_3187</u> From omto From | l depth TTSset at <u>3152.39</u> to |
| | | |
| WELL STATE BEFORE TEST | | |
| Well closed since_ Well flowing since_ | <u>DST NO. 1</u> Producing zone <u>B</u> Choke sıze | |
| | | |

N*: DOP 104

| FLO | PET | ROL | (|
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Client : <u>STATOIL</u>

Section :

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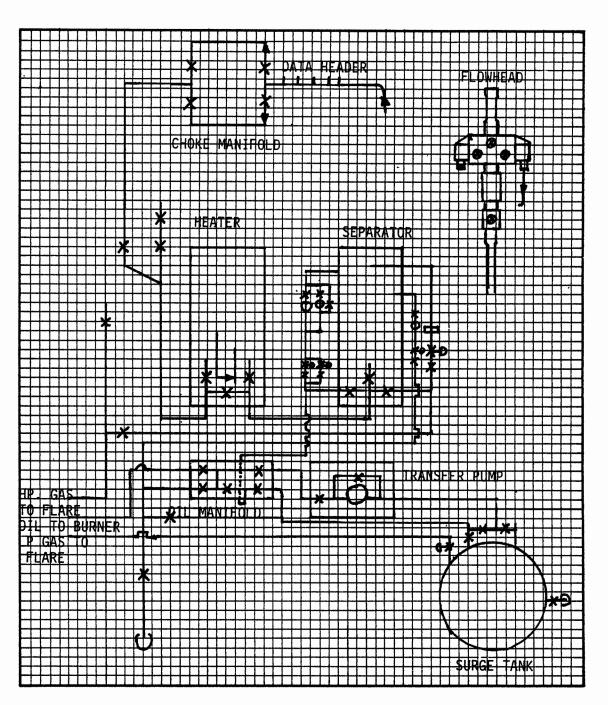
Base :__

Field : <u>34/10 ALPHA</u>

Well : 34/10-10

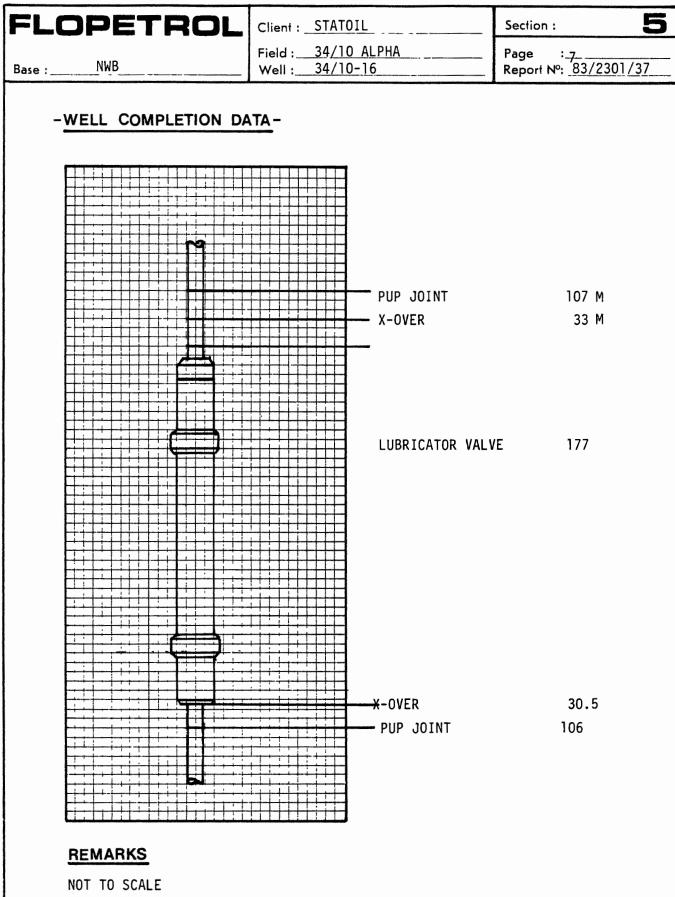
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- SURFACE EQUIPMENT LAYOUT-



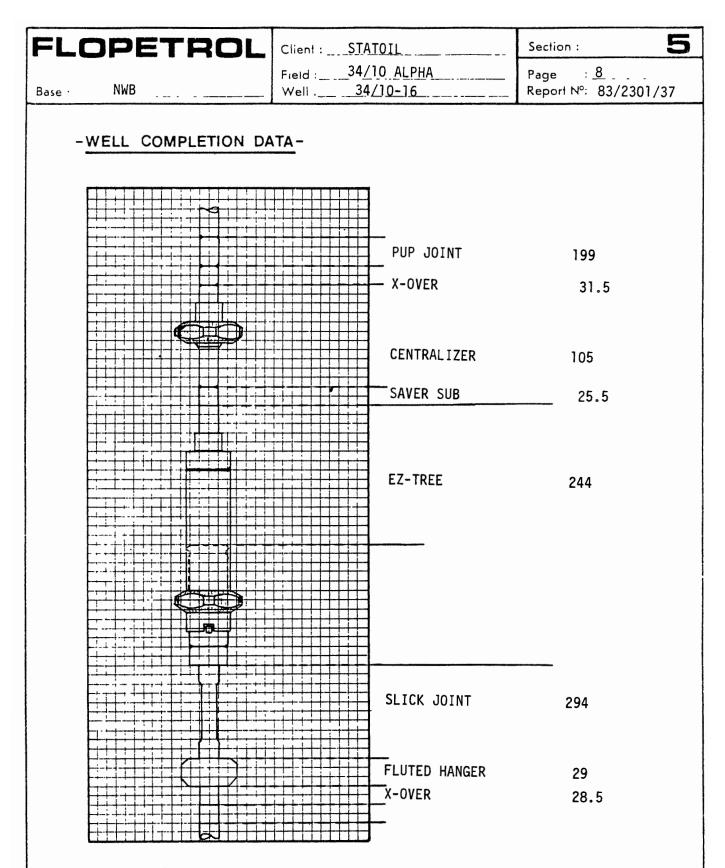
REMARKS:

NOT TO SCALE



ALL MEASUREMENT IN CM

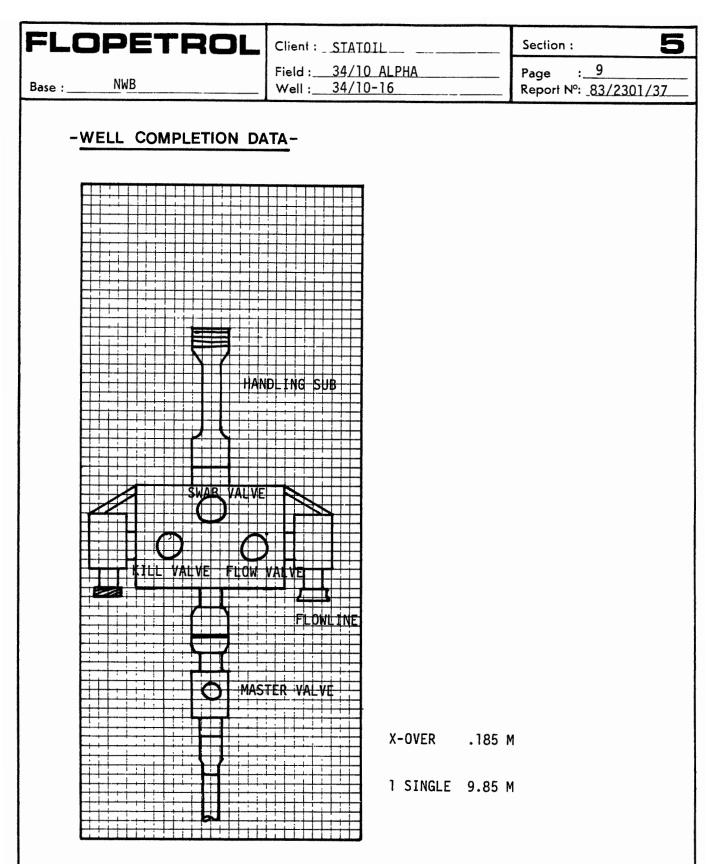
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REMARKS

NOT TO SCALE ALL MEASUREMENT IN CM

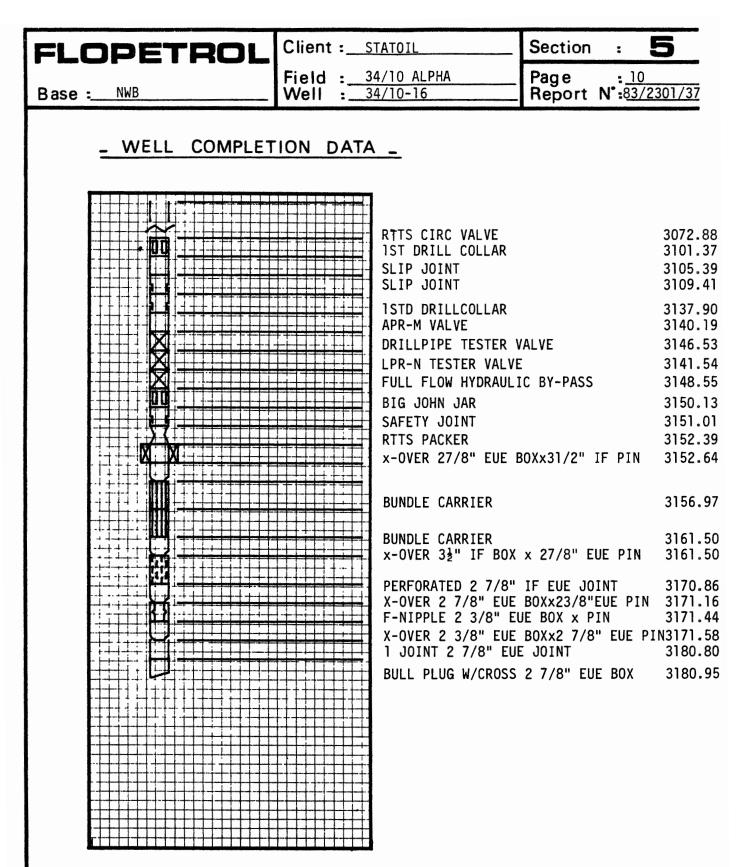
No DOP 106



REMARKS

NOT TO SCALE

Nº: DOP 106



REMARKS :

NOT TO SCALE ALL MEASUREMENT IN METERS

N* : D O P 106

Base :____ NWB

FLOPETROL

_ SEQUENCE OF EVENTS _

Client : STATOIL

Field : 34/10-16 ALPHA Well : 34/10-16

| DATE | TIME | OPERATION |
|----------|-------|---|
| 12.09.83 | | PRESSURE TEST LUBRICATOR VALVE TO 6000 PSI, BODY + VALVE. |
| | | PRESSURE TEST EZ-TREE, BODY + VALVE TO 6000 PSI. |
| | | PRESSURE TEST FLOWHEAD, BODY + VALVE TO 6000 PSI. |
| | | PRESSURE TEST CHOKE MANIFOLD BODY TO 6000 PSI, UPSTREAM |
| | | VALVES TO 6000 PSI, DOWNSTREAM VALVES TO 5000 PSI. |
| | | PRESSURE TEST CHIKSANS TO 6000 PSI. |
| | | START TO PRESSURE TEST SURFACE EQUIPMENT. |
| | | PRESSURE TEST HEATER UPSTREAM TO 6000 PSI, DOWNSTREAM TO |
| | | 2800 PSI. |
| | | LEAK AT 1400 PSI ON SEPARATOR INLET AND GAS BY-PASS. |
| | | REPAIR AND CHANGE 2 x 3" MAPEGAS VALVES. |
| 13.09.83 | | PRESSURE GAS AND OIL DIVERTER VALVES TO 1000 PSI. |
| | | PRESSURE TEST OIL MANIFOLD TO 1000 PSI. PRESSURE TEST |
| | | SEPARATOR TO 1200 PSI, AND SEPARATOR INLET TO 1400 PSI. |
| | | PRESSURE TEST BLIND CHOKE ON HEATER CHOKE LINE TO 6000 |
| | | PSI. CLEAN OUT BURNERS. |
| | | WORK ON COFLEXIP AND PRESSURE TEST TO 6000 PSI. |
| | | REPAIR LEAKS ON PORT BURNER BOOM AND PRESSURE TEST TO |
| | | 1000 PSI. |
| | | GENERAL MAINTENANCE |
| 14.09.83 | | GENERAL MAINTENANCE |
| 15.09.83 | | D. BARDIN, P: GULBRANDSEN, S. BRAZINA, K. VARGEVIK, H. |
| | | GEHIN, G. LOTE LEFT RIG. |
| | | Ø. SKAGEN, G. HEITMANN, A. AUSTLID, W. BOSWARVA, M. TOPMS |
| | | ARRIVED RIG. |
| | | GENERAL MAINTENANCE. |
| | | PREPARE SDP NO. 82818 TO RUN IN HOLE. |
| | 17:55 | SCHLUMBERGER PERFORATED AT 3177.3187 M RKB. |

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Section

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|---------|----------|--|--|
| | _ SEQUEN | CE OF EVENTS _(Continuation) | Page : 12 Report N [:] : 83/2301/3 |
| DATE | TIME | OPERATION | |
| 5.09.83 | 19:11 | POWER ON SDP NO. 82818. | |
| | 19:21 | GAUGES IN F-NIPPLE, START R.I.H. | |
| 6.09.83 | 05:56 | PICK UP EZ-TREE. | |
| | 06:15 | EZ-TREE MADE UP TO TUBING | |
| | 1 | UNLATCH EZ-TREE | |
| | 06:25 | RELATCH EZ-TREE | |
| | 06:30 | CLOSE EZ-TREE PRESSURE UP B-LINE | |
| | 06:37 | OPEN EZ-TREE DRIFT THROUGH WITH SANDLI | NE |
| | 07:05 | PICK UP LUBRICATOR VALVE | |
| | 07:17 | LUBRICATOR VALVE MADE UP TO TUBING. | |
| | 07:23 | FUNCTION TEST LUBRICATOR VALVE AND RIH | • |
| | 07:42 | PRESSURE TEST ENTIRE TEST STRING 6100 | PSIG. |
| | 08:04 | CLOSE EZ-TREE BLEED OFF TO 500 PSIG AB | OVE (40 LTR WATER |
| | | RETURN TO CEMENT UNIT). | |
| *** | 08:20 | PRESSURE EQUALIZED EZ-TREE OPEN. | |
| | 08:25 | BLEED DOWN PRESSURE TO ZERO (500 L RET | URN AT CEMENT UNIT) |
| | 08:33 | PRESSURE ENTIRE TEST STRING TO 6100 PS | IG. |
| | | CLOSE LUBRICATOR VALVE | |
| | 08:45 | EQUALIZE AND OPEN LUBRIATOR VALVE. BL | EED DOWN TO ZERO, |
| | | (500 L RETURN AT CEMENTUNIT). | |
| | 09:45 | RIG UP STATOIL BAIL SLINGS. | |
| | 10:00 | FLOWHEAD IN MOUSEHOLE | |
| | 10:15 | WEIGHT BEARING EQUIPMENT RIGGED UP | |
| | 10:30 | KILL LINE AND FLOWLINE CONNECTED TO FL | OWHEAD |
| | 10:34 | FLOWHEAD MADE UP TO TUBING | |
| | 10:38 | LAND TEST STRING | |
| | 10:45 | CHOKE MANIFOLD ON RIG FLOOR | |
| | | MAKE UP FLOWLINE ETC. | й — 1 — 1 — 2 факция у Македона (по стано стано) — — 4 — 4 — 4 — 4 — 4 — 4 — 4 — 4 — 4 |
| | 11:50 | PRESSURE TEST AGAINST KILL VALVE TO 42 | 0 BAR |
| | 12:03 | BLEED OFF PRESSURE, OPEN KILL VALVE AN | D MASTER VALVE, |

| | PETF | | Section : E | | | |
|---------------------------------------|------------|--|----------------------------|--|--|--|
| | _ SEQUENCE | OF EVENTS _(Continuation) | Report N: <u>83/2301/3</u> | | | |
| DATE | TIME | OPERATION | | | | |
| 16.09.83 | | CLOSE FAILSAFE VALVE. | | | | |
| | 12:10 | START PRESSURE TEST AGAINST FAILSAFE, SW | VAB VALVE AND | | | |
| | | DRILL PIPE TESTER VALVE TO 420 BAR. | | | | |
| · · · · · · · · · · · · · · · · · · · | 12:35 | CLOSE MASTER, BLEED OFF TO 35 BAR TO OBSERV PRESSURE. | | | | |
| : | 12:45 | OPEN MASTER TO BLEED OFF STRING, THEN CLOSE MASTER VALVE | | | | |
| · · · · · · | | AGAIN. | | | | |
| | 12:52 | CLOSE HEATER INLET AND BY-PASS, OPEN FAI | ILSAFE TO PRESSURE | | | |
| 1 | | TEST LINE TO 345 BAR. | | | | |
| | 12:55 | CLOSE CHOKE MANIFOLD DOWNSTREAM VALVES A | AND BLEED OFF | | | |
| | | PRESSURE UPSTREAM TO 35 BAR TO OBSERVE H | PRESS. | | | |
| | 13:00 | DISCOVER THAT FAILSAFE IS BLEED OFF AND CLOSED. | | | | |
| | 13:02 | OPEN FAILSAFE AGAIN AND SECURE HANDLE BY TAPE. | | | | |
| | 13:10 | PRESSURE UP TO 345 BAR, OPEN UP DOWNSTREAM VALVES | | | | |
| 13:21 | | MAKE SURE WE HAD 345 BAR UPSTREAM HEATER. | | | | |
| | | CLOSE DOWNSTREAM VALVES ON CHOKE MANIFOLD AND BLEED OFF | | | | |
| | | TO 35 BAR UPSTREAM TO OBSERVE PRESSURE. | | | | |
| | 13:23 | BLEED OFF PRESSURE TO BURNER BOOM, CLOSE | E UPSTREAM VALVES | | | |
| | | ON CHOKE MANIFOLD AND PRESSURE TEST TO 4 | 450 BAR. | | | |
| | 13:35 | BLEED OFF PRESSURE, OPEN MASTER AND CLOS | SE KILL VALVE. | | | |
| | 13:40 | PICK UP STRING 5M. | | | | |
| antanina | 13:58 | ATTEMPT TO SET PACKER. | | | | |
| | 14:03 | TRIED TO OPEN LPR-N BY PRESSURE UP ANNU | LUS. | | | |
| | 14:12 | BLEED OFF ANNULUS PRESSURE. | | | | |
| | 14:17 | TRIED TO OPEN LPR-N BY PRESSURE UP ANNU | LUS TO 110 BAR, | | | |
| | | BUT NO RESPONSE FROM WELL. | | | | |
| | 14:20 | BLEED OFF ANNULUS PRESSURE. | | | | |
| | 14:25 | PICK UP STRING. | | | | |
| | 15:00 | SET PACKER | | | | |
| + | 15:04 | OPEN LPR-N VALVE. | | | | |
| | 15:13 | OPEN WELL AT CHOKE MANIFOLD ON 32/64" P | OS. CHOKE FOR | | | |

| -LO | PETF | - UL | Section : E | | |
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| | _ SEQUENCE | E OF EVENTS _(Continuation) | Page : <u>14</u> Report N [:] : <u>83/2301/3</u> | | |
| DATE | TIME | OPERATION | | | |
| 16.09.83 | | INITIAL FLOW. | | | |
| | 15:14:30 | CLOSE IN AT CHOKE MANIFOLD. TOTAL VOLU | ME BACK IS ABOUT | | |
| | | 1.2 M ³ | | | |
| | 15:16 | CLOSE LPR-N FOR INITIAL BUILD-UP. | | | |
| | 16:19 | OPEN LPR-N | | | |
| | 16:21 | OPEN WELL AT 52/64" POS CHOKE | | | |
| | 16:25 | GAS TO SURFACE | | | |
| | 17:03 | FLOW THROUGH SEPARATOR. | | | |
| | 17:30 | SWITCH OIL FLOW TO SURGE TANK FOR METER | FACTOR. | | |
| | 18:00 | SWITCH FLOW BACK TO PORT BURNER, METERFACTOR 0.7994. SWITCH FLOW TO SURGE TANK, START TRANSFERE PUMP. | | | |
| | 19:15 | | | | |
| | 19:20 | TANK EMPTY, START FILLING UP TO A METER | FACTOR FOR FLOCO. | | |
| | | | | | |
| | 20:00 | SWITCH BACK TO PORT BURNER, METER FACTOR 0.8298. | | | |
| 21:36 DUMPED 0.466 M ³ OF WATER | | | | | |
| | 22:45 SWITCH TO STARBOARD BURNER BOOM. | | | | |
| | 23:01 | DUMP 0.320 M ³ OF WATER. | | | |
| | 23:03 | START TAKING FIRST SET OF PVT SAMPLES. | | | |
| | | COND. BOTTLE NO. 8308922 | | | |
| | | GAS BOTTLE NO. A 14786 | | | |
| | | GAS BOTTLE NO. A 14681 | | | |
| | 23:32 | FINISH WITH FIRST SET OF PVT SAMPLES. | | | |
| | 23:35 | DUMP 0.480 M ³ OF WATER | | | |
| 17.09.83 | 00:01 | DUMP 0.410 M ³ OF WATER | | | |
| | 00:05 | START TAKING SECOND SET OF PVT SAMPLES. | | | |
| | | COND. BOTTLE NO: 83021217 | | | |
| | | GAS BOTTLE NO. A14695 | | | |
| | | GAS BOTTLE NO. A14761 | | | |
| | 00:35 | FINISH SECOND SET OF PVT SAMPLES | ······ | | |
| | 01:00 | BY-PASS SEPARATOR | | | |

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| | | OF EVENTS _(Continuation) | Page : 15 Report N: 83/2301/37 | |
| DATE | TIME | OPERATION | | |
| 17.09.83 | 01:01 | SHUT IN WELL AT CHOKE MANIFOLD AND LPR- | N VALVE. | |
| | 01:05 | DUMP 0.520 M ³ OF WATER | | |
| | | FILLING UP DEAD CONDENSAT, | | |
| | | 1 x 200 LITER DRUM | | |
| | | 2 x 10 LITER JERRY CANS | | |
| | | 6 x 1 LITER GLASSES | | |
| | | 4 x 1 LITER PLASTIC CANS OF WATER FROM | SEPARATOR. | |
| 4 | 09:58 | OPEN LPR-N VALVE | | |
| | 10:00 | OPEN WELL AT CHOKE MANIFOLD ON 80/64" F | IXED CHOKE | |
| | 10:28 | SWITCH FLOW THROUGH SEPARATOR | | |
| | 10:45 | SWITCH FLOW TO SURGE TANK FOR METERFACTOR. | | |
| | 11:05 | SWITCH FLOW BACK TO STARBOARD BURNER, M | ETERFACTOR | |
| | | 0.8649 | | |
| | 11:35 | DUMP 0.500 M ³ OF WATER | | |
| | 13:25 | DUMP 0.810 M ³ OF WATER | | |
| | 14:02 | DUMP 0.19 M ³ OF WATER | | |
| | 14:34 | DUMP 0.330 M ³ OF WATER | | |
| | 15:00 | DUMP 0.320 M ³ OF WATER | | |
| | 15:03 | START TAKING THIRD SET OF PVT SAMPLES. | | |
| | | CONDENSATE BOTTLE NO. 8208308 | | |
| | | GAS BOTTLE NO. 14668 | | |
| | | GAS BOTTLE NO. 14751 | | |
| | 15:40 | FINISH TAKING PVT SAMPLES | | |
| | 16:02 | DUMP 1.040 M ³ OF WATER | | |
| | 16:06 | START TAKING FOURTH SET OF PVT SAMPLES. | | |
| | | CONDENSATE BOTTLE NO. 83021209 | | |
| | | GAS BOTTLE NO. A14789 | | |
| | | GAS BOTTLE NO. A14688 | | |
| | 16:45 | FINISH TAKING PVT SAMPLES | | |
| | 16:52 | DUMP 0.470 M ³ OF WATER | | |

| FLO | PETF | ROL | Section : E |
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| | _ SEQUENCE | OF EVENTS _(Continuation) | Page : <u>16</u> Report N [:] :_83/2301/3 |
| DATE | TIME | OPERATION | |
| 17.09.83 | 17:01 | BY-PASS SEPARATOR | |
| | | SHUT IN WELL AT CHOKE MANIFOLD AND LPR- | N VALVE |
| | 22:04 | CLOSE MASTER VALVE | |
| | 22:06 | BLEED OFF PRESSURE TO 35 BAR TO CHECK M | ASTER VALVE. |
| | 22:09 | BLEED OFF TO 0 PSI | |
| | 22:14 | OPEN KILL VALVE FOR FLUSHING SURFACE EQ | UIPMENT. |
| | 23:00 | FINISH FLUSHING. | |
| 18.09.83 | 00:05 | OPEN MASTER VALVE | |
| | 00:09 | CLOSE KILL VALVE | |
| | 00:11 | OPEN CHOKE MANIFOLD TO BURNER. | |
| | 00:14 | CLOSE CHOKE MANIFOLD | |
| | 00:16 | OPEN CHOKE MANIFOLD ON 28/64" ADJUSTABL | E CHOKE |
| | 00:30 | CLOSE CHOKE MANIFOLD, PRESSURE INCREASE | . NOT POSSIBLE |
| | | TO BLEED OFF TUBING PRESSURE. | |
| | 00:35 | CLOSE FAILSAFE VALVE | |
| | 00:37 | OPEN LPR-VALVE | |
| | 00:39 | BLEED OFF FLOWLINE PRESSURE. | |
| | 90:4 0 | OPEN KILL VALVE. | |
| | 00:42 | START BULLHEADING. | |
| | 02:54 | BULLHEAD ANNULUS | |
| | 03:17 | CLOSE KILL VALVE LINE UP 2" CHIKSANS TO | SHALE SHAKERS. |
| | 03:21 | OPEN KILL VALVE | |
| | 03:25 | OPEN APR-M CIRCULATING VALVE. START RES | ERCE CIRCULATION |
| | 04:57 | FINISH REVERCE CIRCULATION. | |
| | 05:00 | CLOSE MASTER VALVE, LINE UP 2" CHIKSANS | TO MUD PUMPS. |
| | 05:01 | OPEN FAILSAFE VALVE | |
| | 05:05 | START TO FLUSH LINES TO BURNER | |
| | 05:15 | FINISH FLUSHING, CLOSE FAILSAFE VALVE | |
| | 05:23 | OPEN MASTER VALVE, START SIRCULATING. R | RIG DOWN CHOKE |
| | | MANIFOLD, FLOWLINE ETC. | |

| FLC | PETI | ROL | Section : 6 |
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| | _ SEQUENO | CE OF EVENTS _(Continuation) | Page : 17 Report N: 83/2301/37 |
| DATE | TIME | OPERATION | |
| 18.09.83 | .06:50 | FINISH CIRCULATING | |
| | 07:00 | UNSEAT PACKER | |
| | 07:01 | PUMP DOWN 1 M ³ SLUG. | |
| | 07:18 | START CIRCULATING | |
| | 10:30 | FINISH CIRCULATING | |
| | 10:42 | DISCONNECT FLOWHEAD + SINGLE | |
| | 11:00 | FLOWHEAD IN MOUSEHOLE ELS BOP DISCONNEC | CTED. |
| | 11:15 | LAY DOWN FLOWHEAD + SINGLE | |
| | 12:08 | LUB VALVE OFF STRING. | |
| | 12:15 | FLUSHED THROUGH PERMANENT PIPING WITH D | OOWELL SCHLUMBERGER |
| | 13:25 | EZ-TREE OFF STRING, START PACKING EQUIP | MENT. |
| | 20:30 | SDP ON SURFACE. | |
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| | Client : STATOIL Section : 7 | Field : 34/10 ALPHA - WELL TESTING DATA SHEET - Well : 34/10-16 | AND TEMPERATURE MEASUREMENTS PROD. RATES AND FLUID PROPERTIES GOR | WELL HEAD SEPARATOR OIL OR CONDENSATE I GAS | Tg.temp Tg. press. Cg. press. Temp. Press. Rate Gravity BSW Rate | | | VALVE | 125.4 | 125.8 | 125.8 | 125.1 | 125.1 | 124.9 | | | | EASURING CONDITIONS : TESTED INTERVAL : 3177 - 3187 |
|--------------|------------------------------|---|---|---|--|-----------|-------------|----------------|-------|-------|-------|-------|-------|-------|--|--|--|---|
| | | | | | Cg. press. | | | | 125.4 | 125.8 | 125.8 | 125.1 | 125.1 | 124.9 | | | | S CONDITIONS : |
| 60 | FLOPETROL | NWB | PRESSURE | BOT TOM HOLE | Π | 170°08'83 | SETT PACKER | OPEN LPR-VALVE | | | | | | | | | | LIQUID FLOW RATE MEASURING |
| No.: DOP 109 | | Base :_ | DATE - TIME | | Time C | | 15:00 | 15:04 | 15:05 | 15:06 | 15:08 | 15:08 | 15:09 | 15:10 | | | | LIQUIE |

| | Γ | | | Units | | | | | | | | | | | | | | | | | |
|---|--------------------------|-------------|------------------------------------|-------------|-----|------------|-------|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|--|
| | | | | | | | | | | | | | | | | | | | | | |
| Section | | | | | 111 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| Page : 19 Report N ⁻ : 83/2301/37 | GOR | | | | | | | | | | | | | | | | | | | | |
| t N. | IES | S | Gravity | Aır=1 | | | | | | | | | | | | | | | | | |
| Page Repor | ā | ð | | MMSCM/D | | E | | | | | | | | | | | | | | | |
| tion) | RATES AND FLUID | SATE | -+ | 2 | | POS CHOKE | | | | | | | | | | | | | | | |
| ntinua | ATES AN | CONDENSATE | Gravity BSW | | | 52/64" 7 | | .2M ³ | | | | | | | | | | | | | |
| SHEET_(Continuation) | PROD. R/ | ш | Rate | <u>م/ د</u> | | FLOW ON 5. | | FLOW BACK | | | | | | | | | | | | | |
| | VTS | ATOR | Press. | PSIG | | INITIAL | | CHOKE, FI | | | | | | | | | | | | | |
| 3 DATA | SUREMEI | | | oF | | FOR | | АТ | | | | | | | | | | | | | |
| ESTING | re meas | D | Cg press. | | | OPEN UP | | CLOSE IN | | | | | | | | | | | | | |
| -WELL TESTING | TEMPERATURE MEASUREMENTS | WELL HEAD | Tg.temp Tg. press. Cg press. Temp. | BAR | | | 45.81 | | 159.58 | 156.81 | 155.09 | 154.06 | 152.68 | 151.99 | 150.96 | 150.61 | 149.92 | 148.89 | 148.54 | | |
| | AND TEM | Ν. | Tg. temp | o O | | | | | | | | | | | | | | | | | |
| FLOPETROL | PRESSURE AI | BOTTOM HOLE | Temp. Pressure | 16.09.83 | | | | | | | | | | | | | | | | | |
| | PRE | BOTTO | Temp. | | | | | /0 | | | | | | | | | | | | | |
| | – TIME | | <u> </u> | MIN | | 0 | 1 | 15:14:30 1.30/0 | • 30 | 1.30 | 2.30 | 3.30 | 4.30 | 5.30 | 6.30 | 7.30 | 8.30 | 9.30 | 10.30 | | |
| | DATE - | | Time | HR/MIN | | 15:13 | 15:14 | 15:14: | 15:15 | 15:16 | 15:17 | 15:18 | 15:19 | 15:20 | 15:21 | 15:22 | 15:23 | 15:245 | 15:25 | | |

| COPETROL | G DATA SUREMENTS SEPARATO SEPARATO OF PSIO | SHEET_(Continuation) | | Page :20 Report N':83/2301/37 Report N':83/2301/37 | L : n |
|---|--|----------------------|--------------------|--|--------------|
| - TIME PRESSURE AND TEMPERATURE MEASURE BOTTOM HOLE WELL HEAD Runui Temp. Pressure Tg temp Tg. press. Cg press. c N NIN Temp. Pressure Tg temp Tg. press. c c 11.30 11.30 148.41 148.41 147.20 c c 12.30 13.30 148.20 147.23 147.23 c c 13.30 14.30 147.23 147.23 147.23 c c 15.30 20.30 147.23 147.23 147.23 c c 20.30 14.30 147.23 147.23 c c c 30.30 25.30 147.23 147.23 147.23 c c c 30.30 25.30 147.23 147.23 c c c c c c c c c c c c c c | SUREME SEPAF Temp. oF | | 1 | | |
| BOTTOM HOLE WELL HEAD Cumul Temp. Fressure Tg temp Tg. press. Cg press. MIN Co. BAR Co C 11.30 16.00.83 148.41 1 11.30 148.41 148.20 c 12.30 148.20 148.20 c 13.30 147.51 147.51 1 14.30 147.51 147.51 1 15.30 14.7.23 147.51 1 20.30 147.51 147.51 1 25.30 1447.51 1 1 25.30 1447.53 1 1 30.30 1447.51 1 1 25.30 1447.51 1 1 35.30 1447.53 1 1 25.30 1447.53 1 1 35.30 1443.72 1 1 40.30 140.96 1 1 45.30 140.96 1 1 </th <th>SEPAF Temp. oF</th> <th></th> <th>FLUID PROPERTIES</th> <th>GOR</th> <th></th> | SEPAF Temp. oF | | FLUID PROPERTIES | GOR | |
| NIN Tressure Ig.templig. press. Ug press. 11.30 16.00.83 AR 11.30 146.00.83 148.41 12.30 148.20 148.20 13.30 148.20 147.51 13.30 147.51 147.51 14.30 147.51 147.51 14.30 147.51 147.51 15.30 147.51 147.51 20.30 147.51 147.23 25.30 145.79 147.23 30.30 1447.51 147.23 30.30 1447.51 147.23 40.30 1447.59 1447.51 40.30 1443.72 145.79 45.30 140.96 140.96 | OF OF | OIL UN CUNDEN | В В | | |
| MIN 16.00.83 Dot 11.30 148.41 12.30 148.20 13.30 147.86 14.30 147.86 14.30 147.51 15.30 147.51 20.30 145.79 20.30 145.79 30.30 145.79 40.30 142.89 45.30 140.96 | 5 | | Rate | LZ | |
| 11.30 148.41 12.30 148.41 12.30 148.20 13.30 147.51 14.30 147.51 14.30 147.51 15.30 147.51 20.30 145.79 20.30 145.79 30.30 145.79 35.30 143.72 35.30 140.96 40.30 140.96 45.30 140.61 | | 2 <u>Q/cW</u> | MMSCM/D AIr=1 | 1 | Units |
| 12.30 13.30 14.30 15.30 20.30 25.30 30.30 35.30 45.30 45.30 | | | | | |
| 12.30 13.30 14.30 15.30 20.30 25.30 30.30 35.30 40.30 45.30 | | | | | |
| 13.30 14.30 14.30 15.30 20.30 25.30 25.30 30.30 30.30 36.30 40.30 40.30 | | | | | |
| 14.30 15.30 20.30 25.30 30.30 30.30 40.30 45.30 | | | | | |
| 15.30 20.30 25.30 30.30 35.30 40.30 45.30 | | | | | |
| 20.30 25.30 30.30 35.30 40.30 45.30 | | | | | |
| 25.30 30.30 35.30 40.30 45.30 | | | | | |
| 30.30 35.30 40.30 45.30 | | | | | |
| 35.30 40.30 45.30 | | | | | |
| 40.30 | | | | | |
| 45.30 | | | | | |
| | | | | | |
| 16:02 20.30 | | | | | |
| 16:10 55.30 139.58 | | | | | |
| 16:19 64.30 138.89 OPEN LPR-N VA | OPEN LPR-N VALVE | | | | |
| 16:21 66.30'0 OPEN WELL AT | CHOKE | ANIFOLD ON 52/64" FI | 52/64" FIXED CHOKE | | |
| 16:22 1 125.10 | | | | | |
| 16:23 2 83.74 | | | | | |

| | | FLOPETROL | | -WELL TESTING | TESTING | DATA | SHEET_(Continuation) | Continu | ation) | Repo | N. T | Report N:: 83/2301/37 | Section : | |
|--------|-------|----------------|-----------------|-----------------------------------|----------------|--------------------------|------------------------|-------------------|---------|----------------|---------|-----------------------|-----------|-------|
| DATE - | TIME | PRESSURE | AND TE | MPERATU | IRE MEAS | TEMPERATURE MEASUREMENTS | PROD | RATES AND FLUID | ND FLU | IID PROPERTIES | TIES | GOR | | |
| | | | | WELL HEAD | AD | | | OIL OR CONDENSATE | SATE | | GAS | | | |
| Time | Cumul | Temp. Pressure | T | Tg.tempTg. press. Cg press. Temp. | Cg press. | | | Gravity | | Rate | Gravity | | | |
| NTW/XH | NTM | | <u>у</u> с • | BAR | | OF PSIG | 1/D | | % | MMSCM/D | Air=1 | | | Units |
| 16:23 | | | 22 6 | C 2 | | | | | | | | | | |
| 16:24 | e | | | 93.39 | | | | | | | | | | |
| 16:25 | 4 | | | 104.42 | GAS TO S | SURFACE | | | | | | | | |
| 16:26 | 5 | | | 111.31 | | | | | | | | | | |
| 16:27 | 6 | | | 137.51 | | | | | | | | | | |
| 16:28 | 7 | | | 145.79 | | | | | | | | | | |
| 16:29 | ø | | | 169.92 | | | | | | | | | | |
| 16:30 | 6 | | 50 | 190.60 | | | | | | | | | | |
| 16:35 | 14 | | 52 | 215.42 | | | | | | | | | | |
| 16:40 | 19 | | 52 | 217.35 | | | | | | | | | | |
| 16:45 | 24 | | 53 | 219.21 | | | | | | | | | | |
| 16:50 | 29 | | 57 | 220.94 | | | | | | | | | | |
| 16:55 | 34 | | 59 | 222.32 | | | | | | | | | | |
| 17:00 | 39 | | 62 | 224.73 | | | | | | | | | | |
| 17:03 | 42 | | | | DIVERTED | DIVERTED FLOW THROUGH | UCH SEPARATOR | TOR | | | | | | |
| 17:30 | 69 | | 69 | 228.18 | | | | | 0 | 1.282 | •655 | | | |
| 17:30 | 69 | | | | SWITCH 0 | SWITCH OIL FLOW TO | URGE TANK | K FOR METERFACTOR | TERFAC | ror | | | | |
| 17:45 | 84 | | 17 | 229.21 | | | 335.3 | . 7882 | 0 | 1.281 | .655 | | | |
| | | | | | | | | | | | | | | |

No.: DOP 110

| No.: DOP 110 | 110 | | | | | | | | | | | | | | | | |
|--------------|-------|-------|-------------|---------|---------------------|---------------|--------------|------------------|------------------------|------------|---------------|-----------------------|----------|------------------------------------|-------------------------|--------|----------------------|
| | Ū | | LOPETROL | | . MELL | -WELL TESTING | 3 DATA | | SHEET_(Continuation) | ntinu | ation) | Page Repo | L N | Page : 22 Report N': 83/2301/37 | $\overline{7}$ Section | : uo | |
| DATE - | TIME | PRES | PRESSURE A | AND TE | T EMPERATURE | | MEASUREMENTS | INTS | PROD. R/ | RATES A | AND FLUID | JID PROPERTIES | TES | GOR | | | |
| | | BOTTO | BOTTOM HOLE | 5 | WELL HEAD | | SEPAI | SEPARATOR | OIL OR C | CONDENSATE | SATE | (9 () | GAS | | | | SHR/SHR |
| Time | Cumul | Temp. | Pressure | Tg. tem | Tg. temp Tg. press. | Cg press. | ġ | Press. | Rate | Gravity | | Rate | Gravity | | | | |
| HR/MIN | MIM | | | Do | BAR | | oF | PSIG | M ³ /D | 60/60 | % | MMSCM/D | Air=1 | SCM/M ³ | CO_2 H ₂ S | CL-PPM | Units |
| 17:45 | | | | 8 | 5 | | | | | | | | | | | | |
| 18:00 | 66 | | | | | | 107 | 006 | SWITCH FL | FLOW BACK | \mathbf{TO} | PORT BURNER | | | | | |
| 18:00 | 66 | | | 73 | 229.7 | | 107 | 900 | 322.5 | .7882 | 2 | 1.281 | .655 | 3972 | | | |
| 18:30 | 129 | | | 74 | 230.3 | | 111 | 895 | 318.2 | .7882 | | 1.289 | .655 | 4051 | 1% 0% | | |
| 19:00 | 159 | | | 75 | 230.4 | | 113 | 890 | 314.9 | .7882 | 2.5 | 1.282 | .664 | 4071 | | | |
| 19:15 | 174 | | | 76 | 230.5 | | 113 | 870 | SWITCH FI | FIOW TO | SURGE | TANK FOR EI | EMPTY TA | NK AND | NEW METER | FACTOR | |
| 19:30 | 189 | | | 77 | 230.8 | | 113 | 870 | 316.4 | .7882 | | 1.281 | .664 | 4049 | 2% 0% | | |
| 20:00 | 219 | | | | | | 114 | 870 | SWITCH FI | FLOW BACK | TO | PORT BURNER | | | | | |
| 20:00 | 249 | | | 78 | 231.0 | | 114 | 870 | 309.1 | .7895 | TRACE | 1.283 | :664 | 4151 | | | 6%/60 ⁰ F |
| 20:30 | 279 | | | 78 | 231.1 | | 114 | 875 | 311.2 | .7895 | | 1.293 | .660 | 4155 | 2% 0% | | |
| 21:00 | 309 | | | 79 | 231.3 | | 117 | 875 | 310.0 | .7895 | TRACE | 1.293 | .660 | 4171 | | | |
| 21:30 | 339 | | | 79 | 231.4 | | 118 | 875 | 321.0 | .7913 | | 1.294 | .660 | 4031 | 2% 0% | | |
| 21:36 | 345 | | | | | | | | DUMPED 2. | 93 BBI | WATER | | | | | | |
| 22:00 | 369 | | | 79 | 231.6 | | 120 | 875 | 320.3 | .7910 | 3 | 1.292 | .660 | 4034 | | 1700 | |
| 22:30 | 399 | | | 79 | 231.7 | | 120 | 875 | 318.7 | .7910 | 3 | 1.292 | .660 | 4054 | | | |
| 22:45 | 414 | | | | | | | | SWITCH TO | | ORD BU | STARFORD BURNER BOOM | | | | | |
| 23:00 | 429 | | | 80 | 231.8 | | 120 | 875 | 319.3 | .7910 | 3 | 1.292 | .660 | 4064 | | | |
| 23:05 | 434 | | | | | | | | DUMPED 2 01 BBI | 01 BBI | WATER | | | | | | |

| No.: DOP 110 | ° 110 | | | | | | | | | | | | | | | | |
|--------------|----------|-------|-------------|---------|-------------------|--------------------------|--------|------------------|------------------------|------------|-----------|-------------|---------|---|----------------------------------|----------|-------|
| Ĩ | Ö | Ĕ | OPETROL | | . MELL | -WELL TESTING | 5 DATA | | SHEET_(Continuation) | ntinu | ation) | | LT N | Page :23 Report N ^{:83/2301/37} | - Section | ion : | r |
| DATE - | - TIME | PRE | PRESSURE A | AND TE | EMPERATL | TEMPERATURE MEASUREMENTS | UREME | NTS | PROD. R/ | RATES A | AND FLUID | - 6 | TIES | GOR | | | T |
| • | | | BOTTOM HOLE | > | WELL HEAD | AD | SEPAF | SEPARATOR | OIL OR C | CONDENSATE | SATE | | GAS | | | | |
| I IME | Cumul | Temp. | Pressure | Tg. tem | pTg. press. | Cg. press. | | Press. | | Gravity | BSW | Rate | Gravity | | | | |
| NTW/MH | | | | 20 | ^{JC} BAR | | | PSIG | M ³ /D | 60/60 | % | MMSCM/D | Air=1 | SCM/M ³ | CO ₂ H ₂ S | S CL-PPM | Units |
| 23:05 | 3 | | | | 50 | | | | | | | | | | 111111 | | |
| 23:30 | 459 | | | 81 | 231.9 | | 121 | 875 | 313.9 | .7919 | | 1.296 | .660 | 4129 | | | |
| 23:35 | 464 | | | | | | DUMPED | 2.99 | BBLS WATER | | | | | | | | |
| 24:00 | 489 | | | 81 | 232 | | 123 | 875 | 316.2 | .7893 | 3 | 1.293 | .660 | 4088 | 2% 0% | 1800 | |
| | | | | 17.09 | 83 | | | | | | | | | | | | |
| 00:30 | 519 | | | 81 | 232.5 | | 123 | 875 | 314.9 | .7893 | | 1.293 | .660 | 4105 | | | |
| 01:00 | 549 | | | 81 | 232.8 | | 123 | 875 | 313.8 | .7893 | e. | 1.293 | .660 | 4120 | | | |
| 01:00 | | | | | | | BYPASS | SEPA | ATOR | | | | | | | | |
| 01:01 | 550/0 | | | | 297.5 | | SHUT I | IN WELL | AT CHOKE I | MANIFCLD | LD AND | LPR-N VALVE | /E | | | | |
| 01:02 | 1 | | | | 321.6 | | | | | | | | | | | | |
| 01:03 | 2 | | | | 345.7 | | | | | | | | | | | | |
| 01:04 | 3 | | | | 356.1 | | | | | | | | | | | | |
| 01:05 | 4 | | | | 359.5 | | | | | | | | | | | | |
| 01:15 | 14 | | | | 358.8 | | | | | | | | | | | | |
| 01:30 | 29 | | | | 357.5 | | | | | | | | | | | | |
| 01:45 | 44 | | | | 357.0 | | | | | | | | | | | | |
| 02:00 | 59 | | | 58 | 356.1 | | | | | | | | | | | | |
| 02:15 | 74 | | | 53 | 355.5 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

| No.: DOP 110 | 110 | | | | | | | | | | | | | | | |
|----------------|--------|----------------|-------|-------------------------------|------------|--------------|------|----------------------|----------|-----------|-----------------|----------------|--|---------|----------|-------|
| Ľ | ۵ O | FLOPETROL | | -WELL TESTING | ESTING | DATA | | SHEET_(Continuation) | ntinua | tion) | Page Repo | rt N* <u>8</u> | Page :24 Report N': <u>83/2301/37</u> | Section | - | |
| DATE - | TIME | PRESSURE | AND T | T EMPERATURE | | MEASUREMENTS | TS | PROD. RA | RATES AN | AND FLUID | ID PROPERTIES | TIES | GOR | | | |
| | | | | WELL HEAD | Q | | TOR | R C | ONDENS | ATE | | GAS | | | | |
| Time HR/MIN | Cumul | Temp. Pressure | | Tg. temp Tg. press Cg. press. | Cg. press. | | Ś | Rate w3/h | Gravity | BSW * | Rate MMc/M/D | Gravity | crw/m3 | o n cu | rt -DDM | |
| 02:15 | | | | 17,09,83 | | I. | ATCI | | | 9 | | AILEI | SUN/ M ⁻ | 11.200 | 11111111 | Units |
| 02:30 | 89 | | 47 | 355.4 | | | | | | | | | | | | |
| 02:45 | 104 | | 44 | 354.7 | | | | | | | | | | | | |
| 03:00 | 119 | | 42 | 354.4 | | | | | | | | | | | | |
| 03:15 | 134 | | 40 | 354.3 | | | | | | | | | | | | |
| 03:30 | 149 | | 37 | 353.7 | | | | | | | | | | | | |
| 03 : 45 | 164 | | 36 | 353.6 | | | | | | | | | | | | |
| 04:00 | 179 | | 33 | 353.3 | | | | | | | | | | | | |
| 04:15 | 194 | | 32 | 352.8 | | | | | | | | | | | | |
| 04:30 | 209 | | 31 | 352.4 | | | | | | | | | | | | |
| 04:45 | 224 | | 30 | 352.3 | | | | | | | | | | | | |
| 05:00 | 239 | | 29 | 352.2 | | | | | | | | | | | | |
| 05:15 | 254 | | 28 | 352.1 | | | | | | | | | | | | |
| 05:30 | 269 | | 27 | 351.9 | | | | | | | | | | | | |
| 05:45 | 284 | | 26 | 351.7 | | | | | | | | | | | | |
| 00:90 | 299 | | 25 | 351.6 | | | | | | | | | | | | |
| 06:15 | 314 | | 24 | 351.4 | | | | | | | | | | | | |
| 06:30 | 329 | | 24 | 351.2 | | | - | | _ | | | | | | | |
| | | | | | | | | | | | | | | | | |

| OPETROL WELL TESTING DATA SHEET_(Continuation) -TIME PRESSURE AND TEMPERATURE MERATURE MERATURE MERATURE PROD RATES AND FLUID FT NIN PROD PRESSURE TAND TEMPERATURE PROD RATES AND FLUID FT Cumul Immo Pressure Tay VIL PROD RATES AND FLUID FT Cumul Immo Pressure Tay VIL PROD RATES AND FLUID FT Cumul Immo Pressure Tay VIL PROD RATES RATE ANN Pressure Tay VIL PROD RATES RATE PROD RATES RATE ANN Pressure Tay VIL PROD RATES RATE VIL VIL PROD RATE | No.: DOP 110 | 10 | | | | | | | | | | | | | | | | |
|---|--------------|-------|-------|---------|----------|------------|----------------|--------|-------------|-----------|---------|---------|--------------|---------|--|----------------------------------|--------|-------|
| - TIME PRESSURE AND TEMPERATURE MELL HEAD SEPARATOR OLL <or< th=""> CONDENSATE RUNUI Houre WELL WELL MELL FESSURE OLL OR ONDENSATE A NUN Fensure Remain Ressure Remain Ressure Goldol 2 Mate 344 22 351.0 Pass Rate Goldol 2 Mate 359 22 350.9 Pass Rate Goldol 2 Mate 374 22 350.9 Pass Rate Goldol 2 Mate 404 21 350.9 Pass Pass Pass Pass Pass Pass 419 19 350.5 Pass Pass</or<> | FLC | | | С С | | MELL 7 | TESTINC | | | HEET_(Co | ontinué | ition) | Page Repo | rt N: | Page : <u>25</u> Report N': <u>83/2301/37</u> | - Section | : uo | |
| | | IME | PRE | SSURE A | | MPERATL | IRE MEAS | UREME | NTS | | ATES AI | ND FLUI | l a | ries | GOR | | | |
| Number Currine Intrine. Rescur A Rate of Condition Rate of Condit | | _ | BOTTO | M HOLE | 5 | /ELL HE. | AD | SEPAI | ATOR | | ONDEN: | | ອ | ٩S | | | | |
| NUM Definition NUM NUM Definition NUM NUM <th></th> <th>_</th> <th>Temp.</th> <th></th> <th>Tg. temp</th> <th>Tg. press.</th> <th>Cg press.</th> <th>Temp.</th> <th>Press.</th> <th></th> <th>Gravity</th> <th>BSW</th> <th>Rate</th> <th>Gravity</th> <th></th> <th></th> <th></th> <th></th> | | _ | Temp. | | Tg. temp | Tg. press. | Cg press. | Temp. | Press. | | Gravity | BSW | Rate | Gravity | | | | |
| 344 22 351.0 359 22 350.9 354 21 350.9 374 21 350.9 374 21 350.9 389 21 350.9 <th>-</th> <th>976</th> <th></th> <th></th> <th>60°2</th> <th>BAR 83</th> <th></th> <th>oF</th> <th>PSIG</th> <th></th> <th>60/60</th> <th>%</th> <th>MMSCM/D</th> <th>Ar=1</th> <th>cW/W2</th> <th>CO₂ H₂S</th> <th>CL-PPM</th> <th>Units</th> | - | 976 | | | 60°2 | BAR 83 | | oF | PSIG | | 60/60 | % | MMSCM/D | Ar=1 | cW/W2 | CO ₂ H ₂ S | CL-PPM | Units |
| 344 22 351.0 359 22 350.9 374 2 350.9 374 2 350.9 374 2 21 350.9 389 21 350.9 404 20 21 350.8 419 20 350.7 449 19 350.6 479 19 350.4 539 19 350.4 539 19 | | | | | | | | | | | | | | | | | | |
| 359 22 350.9 374 21 350.9 389 21 350.9 404 21 350.9 404 21 350.8 404 21 350.7 419 20 350.7 434 19 350.6 449 19 350.5 < | | 344 | | | 22 | 351.0 | | | | | | | | | | | | |
| 374 21 350.9 389 21 350.9 404 21 350.8 419 21 350.7 419 20 350.7 419 20 350.6 434 19 350.6 449 19 350.6 479 19 350.4 537 537 | | 359 | | | 22 | 350.9 | | | | | | | | | | | | |
| 389 21 350.9 < | | 374 | | | 21 | 350.9 | | | | | | | | | | | | |
| 404 21 350.8 1 1 419 20 350.7 1 1 434 19 350.6 1 1 1 434 19 350.6 1 1 1 449 19 350.5 1 1 1 479 19 350.5 1 1 1 509 19 350.3 1 1 1 537 19 350.3 1 1 1 539/0 19 350.3 0FEN MELN VALVE 1 539/0 1 2 1 1 1 539/0 1 2 1 1 1 539/0 1 2 1 1 1 539/0 1 2 1 1 1 539/0 1 2 2 1 1 1 539/0 1 2 2 2 2 | | 389 | | | 21 | 350.9 | | | | | | | | | | | | |
| 419 20 350.7 19 350.6 19 434 19 350.6 19 350.6 10 449 19 350.5 19 19 350.4 10 479 19 350.4 19 350.4 10 10 509 19 350.3 0FEN LPR-N VALVE 10 10 537 19 350.3 0FEN LPR-N VALVE 11 539/0 19 350.3 0FEN WELL ON 80/64" POSITIV 239/0 19 350.3 0FEN WELL ON 80/64" POSITIV 33 1 183.7 183.7 1 1 4 159.6 159.6 1 1 1 | | 404 | | | 21 | 350.8 | | | | | | | | | | | | |
| 434 19 350.6 449 19 350.5 479 19 350.4 479 19 350.4 509 19 350.3 537 0 NALP 539/0 19 350.3 0PEN LPR-N VALVE 1 239/0 1 26EN WELL ON \$0/64" POSITIV 239/0 1 245.8 0PEN WELL ON \$0/64" POSITIV 2 183.7 0PEN WELL ON \$0/64" POSITIV | | 419 | | | 20 | 350.7 | | | | | | | | | | | | |
| 449 19 350.5 479 19 350.4 509 19 350.3 509 19 350.3 537 0 19 350.3 | | 434 | | | 19 | 350.6 | | | | | | | | | | | | |
| 479 19 350.4 19 350.4 19 509 19 350.3 0PEN LPR-N VALVE 10 537 0 0PEN WELL ON \$0/64" POSITIV 539/0 2 245.8 7 1 1 22 183.7 183.7 7 3 169.9 169.9 1 1 4 159.6 159.6 7 7 | + | 449 | | | 19 | 350.5 | | | | | | | | | | | | |
| 509 19 350.3 NALVE 537 0 | | 479 | | | 19 | 350.4 | | | | | | | | | | | | |
| 537 539/0 OPEN LPR-N VALVE 539/0 0PEN WELL ON \$0/64" POSITIV 1 .245.8 0PEN WELL ON \$0/64" POSITIV 2 .245.8 .245.8 3 183.7 .245.9 4 159.6 159.6 | | 509 | | | 19 | 350.3 | | | | | | | | | | | | |
| 539/0 539/0 OPEN WE_L ON \$0/64" POSITIV 1 .245.8 POPEN WE_L ON \$0/64" POSITIV 2 .245.8 POPEN WE_L ON \$0/64" POSITIV 3 .245.8 POPEN WE_L ON \$0/64" POSITIV 4 .245.8 POPEN WE_L ON \$0/64" POSITIV | | 537 | | | | | OPEN LPR | -N VAL | VE | | | | | | | | | |
| 1 2 3 4 | | 539/0 | | | | | OPEN WEL | | | | IOKE | | | | | | | |
| 2 3 4 | | 1 | | | | .245.8 | | | | | | | | | | | | |
| 3 4 | | 2 | | | | 183.7 | | | | | | | | | | | | |
| 4 | | | | | | 169.9 | | | | | | | | | | | | |
| | | 4 | | | | 159.6 | | | | | | | | | | | | |
| 5 | 10:05 | 5 | | | | 152.7 | | | | | | | | | | | | |

| No.: DOP 110 | 110 | | | | | | | | | | | | | | | | |
|--------------|--------|-------|-------------|---------|--------------|-----------------------------------|--------------|------------------|------------------------|-----------------|---------|-----------------------|---------|--|---------|----------|-------|
| | | | OPETRO | | MELL | -WELL TESTING | | DATA Sł | SHEET_(Continuation) | ontinu | ation) | Page Repc | irt N': | Page : <u>26</u> Report N': <u>83/2301/37</u> | Section | | |
| DATE - | – TIME | PRE | PRESSURE A | AND TE | TEMPERATURE | | MEASUREMENTS | ENTS | PROD R | RATES AND FLUID | ND FLU | JID PROPERTIES | TIES | GOR | | | |
| ŀ | | | BOTTOM HOLE | > | WELL HEAD | AD | SEPA | SEPARATOR | Ŭ | CONDEN | SATE | | GAS | | | | |
| l me | Cumul | Temp. | Pressure | Tg. tem | o Tg. press. | Tg.tempTg. press. Cg press. Temp. | Temp. | Press. | _ | Gravity | BSW | Rate | Gravity | | | | |
| 10:05 | NTW | | | U BAR | BAR | | oF | PSIG | Q/c₩ | 60/60 | % | MMSCM/D | Air=1 | SCM/M ³ | 11 | CL-PPM U | Units |
| C0.01 | | | | | | | | | | | | | | | | | |
| 10:06 | 6 | | | | 147.2 | | | | | | | | | | | | |
| 10:07 | 7 | | | | 143.0 | | | | | | | | | | | | |
| 10:08 | 8 | | | | 135.4 | | | | | | | | | | | | |
| 10:09 | 6 | | | | 134.1 | | | | | | | | | | | | |
| 10:10 | 10 | | | 38 | 132.8 | | | | | | | | | | | | |
| 10:11 | 11 | | | | 132.8 | | | | | | | | | | | | |
| 10:12 | 12 | | | | 132.7 | | | | | | | | | | | | |
| 10:13 | 13 | | | | 132.7 | | | | | | | | | | | | |
| 10:14 | 14 | | | | 132.9 | | | | | | | | | | | | |
| 10:15 | 15 | | | 45 | 133.0 | | | | | | | | | | | | |
| 10:20 | 20 | | | 57 | 134.8 | | | | | | 5 | | | | 1.5/0 | | |
| 10:25 | 25 | | | 62 | 136.1 | | | | | | | | | | | | |
| 10:28 | 28 | | | | | SWITCH F | FLOW TH | THROUGH | SEPARATOR | | | | | | | | |
| 10:30 | 30 | | | 63 | 137.0 | | | | | | | | | | | | |
| 10:35 | 35 | | | 66 | 139.6 | | | | | | 2.5 | | | | 1/0 | | |
| 10:40 | 40 | | | 67 | 142.9 | | | | | | | | | | | | |
| 10:45 | 45 | | | 68 | 142.9 | | 114 | 920 | | | | 1.637 | .663 | | | | |
| | | | | | | | | | | | | | | | | | |

| No.: DOP 110 | 110 | | | | | | | | | | | | | | | | |
|--------------|--------|--------|-------------|----------|-------------|---------------|-------------------|-------------|------------------------|-----------------|----------|----------------------|-------------------|--|---------|----------|---------------|
| Ц Ц | Д О | Ē | OPETROL | | WELL T | -WELL TESTING | DATA | | SHEET_(Continuation) | intinu | ation) | Page Repo | rt N ⁻ | Page : <u>27</u> Report N': <u>83/2301/37</u> | Section | : uo | |
| DATE - | TIME | PRES | PRESSURE A | AND TE | TEMPERATURE | | MEASUREMENTS | NTS | PROD. R/ | RATES AND FLUID | ND FLU | UD PROPERTIES | ries | GOR | | | |
| Time | | BOT TO | BOTTOM HOLE | | WELL HEAD | AD Connece | | Proce | OIL OR CONDENSATE | ONDEN | SATE | G, G, | GAS | | | | SHR/SHR |
| HR/MIN | | | 2000001 | Do Do | OC RAR | | or dinia | PSIG | M ³ /D | 01 4 VII V | | MMSCM/D | Air=1 | SCM/M ³ | CO, H,S | CL-PPM | Units |
| 10:45 | | | | 60.11 | 50 | | IOLINS INTERNE | FLOW | TO BURGE TANK FO | ANK FO | atan b | RACTOR | | | 1/4/1 | | |
| 11:00 | 60 | | | 71 | 142.9 | | 117 | 925 | 400.3 | .7932 | 2 | 1.647 | .663 | 4114 | 1/0 | | |
| 11:05 | 65 | | | | | | SWITCH | FLOW 1 | BACK TO ST | STARBOARD | D BURNER | ER | | | | | |
| 11:15 | 75 | | | 72 | 143.0 | - | 120 | 920 | 401.6 | .7932 | | 1.647 | .663 | 4101 | | | |
| 11:30 | 90 | | | 72 | 143.7 | | 123 | 920 | 401.6 | .7932 | | 1.639 | .665 | 4081 | | | |
| 11:45 | 105 | | | 72 | 143.9 | | | | | | 1.5 | | | | | | |
| 12:00 | 120 | | | 73 | 144.2 | | 125 | 915 | 387.2 | .7932 | 1 | 1.640 | .665 | 4236 | 2/0 | | |
| 12:30 | 150 | | | 74 | 144.4 | - | 126 | 910 | 381.3 | .7932 | | 1.638 | .665 | 4296 | | | 11.3% 64°F |
| 13:00 | 180 | | | 74 | 144.6 | - | 128 | 910 | 387.9 | .7932 | 1.5 | 1.643 | .663 | 4236 | | | |
| 13:30 | 210 | | | 74 | 144.5 | - | 128 | 905 | 384.6 | .7932 | | 1.642 | .663 | 4269 | | 1300/7.0 | |
| 14:00 | 240 | | | 75 | 144.6 | | 129 | 905 | 378.7 | .7932 | 2 | 1.640 | .663 | 4331 | | | |
| 14:30 | 270 | | | 75 | 144.7 | - | 129 | 905 | 386.5 | .7932 | | 1.639 | .664 | 4241 | 2/0 | | |
| 15:00 | 300 | | | 75 | 144.7 | | 130 | 910 | 382.3 | .7932 | 2 | 1.642 | .664 | 4295 | | | |
| 15:30 | 330 | | | 76 | 145.1 | | 130 | 910 | 375.5 | .7932 | | 1.647 | .664 | 4386 | | | |
| 16:00 | 360 | | | 76 | 145.1 | | 131 | 910 | 374.5 | .7931 | 2 | 1.646 | .663 | 4395 | | | |
| 16:30 | 390 | | | 76 | 145.1 | | 131 | 910 | 370.8 | .7931 | | 1.649 | .663 | 4447 | | | |
| 17:00 | 420 | | | 77 | 145.2 | | 132 | 910 | 371.1 | .7942 | | 1.647 | .663 | 4438 | 2/0 | | |
| 17:01 | 421 | | | | | | BY-PASSED | | SEPARATOR | | | | | | | | |

| No.: DOP 110 | 110 | | | | | | | | | | | | | | | |
|--------------|--------|----------------|-----------|-------------|-----------------------------------|-----------|---------|----------------------|-------------------|--------------|------------------|--------------|--|----------------------------------|--------|-------|
| Ц Ц | | FLOPETROL | | -WELL | -WELL TESTING | | DATA Sł | SHEET_(Continuation) | ontinu | ation | |). 11 N : | Page : <u>28</u> Report N': <u>83/2301/37</u> | - Section | ion : | ~ |
| DATE - | – TIME | PRESSURE | ND | EMPERAT | TEMPERATURE MEASUREMENTS | SUREM | ENTS | PROD F | RATES / | AND FLI | FLUID PROPERTIES | TIES | GOR | | | |
| F | | | | MELL HI | HEAD | SEPA | | | CONDENSATE | VSATE | | GAS | | | | |
| | Cumul | Temp. Pressure | Т | p Tg. pres: | To temp To press. Co press. Temp. | . Temp. | Press. | | Gravity | V BSW | Rate | Gravity | | | | |
| 1 7 • 01 | NIIN | | с. С | C BAR | | OF | PSIG | M ³ /D | 60/60 | | MMSCM/D | Air=1 | scm/m ³ | CO ₂ H ₂ S | CL-PPM | Units |
| 1/:/1 | | | | | | | | | | | | | | | | |
| 17:02 | 422 | | | 142.3 | | | | | | | | | | | | |
| 17:03 | 423/0 | | | 142.3 | SHUT IN | IN WELL A | AT CHOR | E MANIFOLD | AND | LPR-N V | VALVE | | | | | |
| 17:04 | 1 | | | 235.4 | | | | | | | | | | | | |
| 17:05 | 2 | | | 283.7 | | | | | | | | | | | | |
| 17:06 | e | | | 321.6 | | | | | | | | | | | | |
| 17:07 | 4 | | | 345.7 | | | | | | | | | | | | |
| 17:08 | 2 | | | 356.8 | | | | | | | | | | | | |
| 17:09 | 9 | | | 358.5 | | | | | | | | | | | | |
| 17:10 | 7 | | | 358.8 | | | | | | | | | | | | |
| 17:15 | 12 | | 74 | 378.8 | | | | | | | | | | | | |
| 17:20 | 17 | | 71 | 357.7 | | | | | | | | | | | | |
| 17:25 | 22 | | 68 | 357.6 | | | | | | | | | | | | |
| 17:30 | 27 | | 63 | 357.5 | | | | | | | | | | | | |
| 17:35 | 32 | | 61 | 357.2 | | | | | | | | | | | | |
| 17:40 | 37 | | 58 | 357.1 | | | | | | | | | | | | |
| 17:45 | 42 | | 57 | 357.0 | | | | | | | | | | | | |
| 17:50 | 47 | | 55 | 3570 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |

| No.: DOP 110 | 110 | | | | | | | | | | | | | | | | |
|----------------|----------|-----------|----------|----------------|---------------------------|---------------------|--------------|------------------|------------------------|------------------|-----------|--------------------|---------------------|----------------------------------|-----------|------------|------|
| Ĩ | | FLOPETROL | Ĩ | | -WELL TESTING | ESTIN | G DATA | 1 | SHEET_(Continuation) | ntinu | ation) | Page Repo | rt N ^{:22} | Page :29 Report N':83/2301/37 | - Section | - c | |
| DATE - | – TIME | PRESSURE | JRE AND | | TEMPERATURE | | MEASUREMENTS | NTS | PROD R | RATES A | AND FLUID | ID PROPERTIES | S3I. | GOR | | | |
| | | | | 3 | WELL HEAD | ٩D | | SEPARATOR | æ | CONDENSATE | SATE | | GAS | | | | |
| Time HR/MIN | Cumul | Temp. Pre | Pressure | Tg. temp oC | Tg.tempTg.press oC BAD | Cg. press. | Temp. or | Press. | Rate M3/h | Gravity 60/60 | BSW % | Rate MMS/D | Gravity Air-1 | scm/m3 | COn Hos (| CT - DPM | Inte |
| 17:50 | N | | | 17.09 33 | 83 83 | | 3 | OTCI | | 20/00 | 9 | d lincimi | 111111111 | H /IIOC | | | |
| 17:55 | 52 | | | 54 | 356.9 | | | | | | | | | | | | |
| 18:00 | 57 | | | 52 | 356.1 | | | | | | | | | | | | |
| 18:15 | 72 | | | 49 | 355.4 | | | | | | | | | | | | |
| 18:30 | 102 | | | 45 | 355.2 | | | | | | | | | | | | |
| 19:00 | 132 | | | 39 | 354.7 | | | | | | | | | | | | |
| 19:30 | 162 | | | 35 | 354.0 | | | | | | | | | | | | |
| 20:00 | 192 | | | 32 | 353.3 | | | | | | | | | | | | |
| 20:30 | 222 | | | 28 | 353.0 | | | | | | | | | | | | |
| 21:00 | 252 | | | 26 | 352.6 | | | | | | | | | | | | |
| 21:30 | 282 | | | 23 | 352.3 | | | | | | | | | | | | |
| 22:00 | 312 | | | | 352.3 | | | | | | | | | | | | |
| 22:04 | 316 | | | | | CLOSED MASTER | | VALVE | | | | | | | | | |
| 22:06 | 318 | | | | | BLEED OI | OFF PRES | PRESSURE C | O 500 PSI | TO CHE | CK MAS | CHECK MASTER VALVE | | | | | |
| 22:09 | 321 | | | | | BLEED OFF | F TO 0 | IS4 (| | | | | | | | | |
| 22:14 | 326 | | | | | OPEN KILL VALVE FOR | L VALV | | FLUSHING S | SURFACE | EQUIPMENT | VENT | | | | | |
| 23:00 | 372 | | | | | FINISH FLUSHING | THSULT | U U | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

FLOPETROL

| DIVISION | : | EMR/NSD |
|----------|-----|------------|
| BASE | 2 | NWB |
| REPORT | N°: | 83/2301/37 |

Well Testing Report Annexes ___

| Client | = | STATOIL | |
|--------|---|---------|--|
|--------|---|---------|--|

| Field | : | 34/10 ALPHA | Well | 8 | 34/10-16 |
|-------|---|-------------|------|---|------------------|
| Zone | = | BRENDT | Date | = | 16 - 18 SEPT. 83 |

| FLOPETROL | Client : | Section : ANNEX |
|------------------------------------|--|---|
| Base :NWB | Field : <u>34/10 ALPHA</u> Well : <u>34/10-16</u> | Page : <u>32</u> Report N [°] : <u>83/2301/37</u> |
| | X of ANNE> | |
| | | (23 |
| MEASUI [] 1.1 _ E [] 1.2 _ E | M HOLE PRESSURE AND T REMENT - 3.H. gauge calibration - 3.H. pressure calculation - 3.H. temperature calculatior | |
| ☑ 2.1 - 1 | PRODUCTION RATE MEASU Measurements with tank _ Measurements with meter _ | REMENT _ |
| I 3. GAS PR | RODUCTION RATE MEASURE | MENT _ |
| 4.1 _ I | ING SHEETS _ Bottom hole sampling _ Gurface sampling _ | |
| | S AND MISCELLANEOUS | _ |
| N DOP 112 | | |

| FLOPETRO | Client : <u>ST</u> ATOIL | ······ | Section : Annex 2 |
|----------------|--|----------------------------|--|
| Base NWB | Field : <u>34/10_</u> Well :34/10_1 | | Page : <u>33</u> Report Nº:83/2301/37 |
| Base :NWB | Well : <u>34/10-1</u> | 0 | Report Nº:03/2301/37 |
| -LIQU | D PRODUCTION RATE | AEASUREMENT - | |
| | | | |
| | | | |
| 2.1 - MEASUREA | NENT WITH TANK - | | |
| Vo = | V x K 5 (1 - BSW) | | |
| 1 | Net oil volume at 60°F and | • • | ure. |
| K : V | ross oil volume measured plume correction factor to | be applied betwee | en the |
| | nk temperature during g Basic sediments and wat | | |
| | | | |
| | | | |
| | NENT WITH METER - | | |
| a) <u>Shr</u> | inkage factor is measured | by <u>shrinkage</u> tester | <u>'-</u> |
| Vo = | Vs x f x (1 - Shr) x K x (1 - | BSW) | |
| | Net oil volume at 60° F and | | |
| | Fross oil volume measure Aeter correction factor = | Volume measured | in tank |
| Shr : | | | veen separator and tank |
| к | conditions, reported to a Volume correction factor | r to be applied betv | veen the finale |
| BSW | temperature during shrin Basic sediments and wat | | and 60°F. |
| | | | |
| b <u>) Sh</u> | rinkage factor is measured | d with tank. | |
| Vo = | Vs x (1 - Shr') x K x (1 - B | ŚWI | |
| | | | |
| | s, K and BSW : Same mea ') : Shrinkage factor inclu | | on factor. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| © | | | |
| | | | |
| 0 02 | | | |

No DOP 120

| No DOP 122 | | | | | | | | | | | | | | |
|--|-------------------------------------|-----------------|------------------------|-------------------------------------|---------|-------|-----------------|-------------|---------------------------------------|--------------------------|------------|---------------|---|----------------------------------|
| FLOPETROL | DETE | | Client : | STATOIL | | | | | | - OII PRODUCTION RATE - | 2 ATE - | Ā | Section : Annex | ณ ณ |
| Base : | NWB | | Field : Well : | 34/10 ALPHA 34/10-16 | HA | | | 71 | MEASUREA | - MEASUREMENT WITH METER | I METER - | <u> </u> | Page : <u>3</u> 5 Report Nº: 83 <u>/</u> 2 | <u>35</u> 83 <u>/</u> 2301/37 |
| Date - time | Meter | * | Mod | | 1 - Shr | | 0 | Oil Gravity | | | Net volume | Net STO | Cumulative | |
| Time Interval | - | \$ | W CB | 20.A | Factor | Temp. | Gravity | Temp. | Grav. 60 ^o F | × | of STO: Vo | product. rate | production | |
| HR/MIN MIN | N BBL | BBLS | 0/0 | BBLS | | оF | | оF | | | BBL. | M3 /day | M3 | Units |
| | | | 16.09.83 | 83 | | | | | | | | | | |
| | | | | | | | | | | | | | + | |
| ! | 1 | | | | | | | | | | | 5 | | |
| 1 | 1 | | | | | | | | | | | | 4 3 1 4 | ł |
| 17:30 | 98.20 | ESTIMA | TED CUMU | ESTIMATED CUMULATIVE OIL PRODUCTION | PRODUCT | | DURING CLEAN UP | AN UP | | | | | 17.5 | .7994 |
| 17:45 | 125.75 | 27.55 | 0 | 22.02 | 1 | 65 | .786 | 66 | .7882 | 0.9974 | 22.0 | 335.3 | 21.0 | |
| 18:00 | 152.25 | 26.50 | 0 | 21.18 | 1 | 65 | .786 | 99 | .7882 | 0.9975 | 21.1 | 322.5 | 24.7 | , |
| 18:30 | 204.55 | 52.30 | 0 | 41.81 | 1 | 65 | .786 | 99 | .7882 | 0.9974 | 41.7 | 318.2 | 31.3 | , |
| 19:00 | 256.3 | 51.76 | 0 | 41.37 | 1 | 65 | .786 | 99 | .7882 | 0.9974 | 41.3 | 314.9 | 37.9 | 1 |
| 19:30 | 304.20 | 52.00 | 0 | 41.57 | 1 | 65 | .789 | 64 | .7905 | 0.9974 | 41.5 | 316.4 | 44.5 | |
| 20:00 | 355.00 | 50.80 | 0 | 40.61 | 1 | 65 | .785 | 72 | .7895 | 0.9974 | 40.5 | 309.1 | 50.9 | |
| 20:30 | 406.14 | 51.14 | 0 | 40.88 | П | 65 | .785 | 72 | .7895 | 0.9974 | 40.8 | 311.2 | 57.4 | |
| 21:00 | 457.08 | 50.94 | 0 | 40.72 | 1 | 65 | .785 | 72 | .7895 | 0.9974 | 40.6 | 310.0 | 63.9 | |
| 21:30 | 507.90 | 50.82 | 0 | 42.17 | 1 | 65 | .788 | 69 | . 7913 | .9974 | 42.1 | 321.0 | 70.6 | .8298 |
| 22:00 | 555.90 | 50.93 | 0 | 42.26 | 1 | 73 | .785 | 76 | .7910 | 0.9933 | 42.0 | 320.3 | 773 | |
| Shrinkage factor measured by Shrinkage tester \Box Tank $ X $ • $\overline{V'o} = Vs \times f \times (1 - BSW) = Net oil volume at separator conditions. f =$ | measured by Shri - BSW) = Net oi | inkage tester 🗌 | Tank 🕅 arator condi | | .7994 | | | | Tested interval : _ Perforations : | srval : | | | | ; |
| | | | | | | | | | | | | | | |

| No · DOP | 123 | | | | | | | | | | | | | | |
|----------|----------|---------|-----------|-------------------------|---------------------------------|----------|----------|----------|-------------------|------------|----------------|------------|--------------------------|--|--------|
| Ц Ц | | | BOL | ME | MEASUREMENT | MITH | H METER | ER -(Co | -(Continuation) | tion) | Page Report | " z | <u>36.</u> 83/2301/37 | Section - ANNEX | ณ ณ |
| DATE - | - TIME | Meter | > | W J | `> | 5-6 | Shr | 011 | GRAVITY | × | 2 | Net volume | Net STO | Cumulative | |
| Time | Interval | reading | SA | | 0 | Factor | Temp. | Gravity | Temp. | Grav. 60°F | 2 | of STO· Vo | fuct. | | - |
| 22:00 | NTM | 555.90 | 27199 | 0, 03 (0) 16, 03 (0) | BBLS | | J. | | 4 | | | BBL | Abdy CM | M3 | Units |
| 22:30 | 30 | 606.57 | 50.67 | 0 | 42.04 | 1 | 73 | .785 | 76 | .7910 | .9933 | 41.8 | 318.7 | 83.9 | .8298 |
| 23:00 | 30 | 657.83 | 50.76 | 0 | 42.12 | 1 | 73 | .785 | 76 | .7910 | .9933 | 41.8 | 319.3 | 90.5 | .8298 |
| 23:30 | 30 | 705.72 | 49.90 | 0 | 41.41 | 1 | 73 | .786 | 76 | .7919 | .9933 | 41.1 | 313.9 | 97.1 | .8298 |
| 24:00 | 30 | 753.0 | 50.27 | 0 | 41.71 | - | 73 | .786 | 69 | .7893 | .9932 | 41.4 | 316.2 | 103.7 | .8298 |
| | • | | | 17.09.83 | ~~~~ | | | | | | | | |] | |
| 00:30 | 30 | 800.47 | 50.07 | 0 | 41.55 | 1 | 73 | . 786 | 69 | .7893 | .9932 | 41.3 | 314.9 | 110.2 | .8298 |
| 01:00 | 30 | 850.36 | 49.89 | 0 | 41.40 | 1 | 73 | .786 | 69 | .7893 | .9932 | 41.1 | 313.8 | 116.8 | .8298 |
| 01:00 | | | BYPASS 5 | SEPARATOR | <u>e</u> | | | | | | | | 1 2 2 | 1 | 1 1 |
| 01:01 | | | WELL SHUT | UT IN AT | CHOKE MANIFOLD | FOLD AND | D LPR | | | | | | | 2 1 2 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 | r |
| | | | THIRD FI | FLOW | | | | | | | | | | , , | 1 |
| 10:45 | | | ESTIMATI | D CONDE | ESTIMATED CONDENSATE PRODUCTION | | DURING C | CLEAN-UP | | | | 0.06 | | 131.1 | |
| 10:45 | | 6392.4 | | | | | | | | | | | | | |
| 11:00 | 15 | 6422.9 | 30.50 | 0 | 26.38 | 1 | 71 | .785 | 82 | .7932 | .9943 | 26.2 | 400.3 | 135.3 | .8649 |
| 11:15 | 15 | 6453.5 | 30.60 | 0 | 26.46 | 1 | 71 | .785 | 82 | .7932 | .9943 | 26.3 | 401.6 | 139.5 | .8649 |
| 11:30 | 15 | 6484.1 | 30.60 | 0 | 26.46 | 1 | 71 | .785 | 82 | .7932 | .9943 | 26.3 | 401.6 | 143.7 | .8649 |
| 12:00 | 30 | 6540.0 | 59.00 | 0 | 51.03 | - | 71 | . 785 | 82 | .7932 | .9943 | 50.7 | 387.2 | 151.8 | .8649 |
| 12:30 | 30 | 6598.1 | 58.10 | 0 | 50.25 | 1 | | .785 | 82 | . 7932 | .9943 | 50.0 | 381.3 | 159.7 | .8649 |
| | | | | | | | | | | | | | | | |

| ณ ณ | | , | Units | .8649 | .8649 | .8649 | .8649 | .8649 | .8649 | .8649 | .8649 | .8649 | 1 | 1 | 1 | | , | | | | |
|-------------------------------|------------|-----------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----------------------|------------------|---|-----------|--------|---|-------------------------------|---|---------------------------------------|
| Section - ANNEX | Cumulative | production | M3 | 167.8 | 175.8 | 183.7 | 191.7 | 199.7 | 207.5 | 215.3 | 223.0 | 230.8 | 1 | 1 |] | | | | | , | + + |
| 1 1 | Net STO | uct. rate | Vady Vady | 387.9 | 384.6 | 378.7 | 386.5 | 382.3 | 375.5 | 374.5 | 370.8 | 371.1 | - - - - - | | | | | | | 1 | |
| t N = $\frac{37}{83/2301/37}$ | Net volume | of STO: Vo | BBL | 50.8 | 50.4 | 49.6 | 50.6 | 50.1 | 49.2 | 49.1 | 48.6 | 48.6 | | | | | | | | | · · · · · · · · · · · · · · · · · · · |
| Page Report | 5 | ۷ | | .9943 | .9943 | .9943 | .9943 | .9943 | .9943 | .9943 | .9943 | .9944 | | | | | | | | 1 | 1 |
| ation) | ۲۲ | Grav. 60°F | | .7932 | .7932 | .7932 | .7932 | .7932 | .7932 | .7931 | .7931 | .7942 | | , ; ; ; | | | | | 1 | 1 | |
| ontinua | GRAVITY | Temp. От | 4 | 82 | 82 | 82 | 82 | 82 | 82 | 79 | 79 | 82 | | | | | | | | | |
| METER -(Continuation) | 011 | Gravity | | . 785 | .785 | .785 | .785 | .785 | .785 | .786 | .786 | .786 | | | 3 | | | | 1 | | |
| | Shr | Temp. Оъ | | γl | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | | | | | | | , | | -+- |
| WITH | 1 - SI | Factor | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | I | | | | | | | ; ; ; ; | | |
| MEASUREMENT | `> | RI C | 0000 | 51.11 | 50.68 | 49.90 | 50.93 | 50.38 | 49.49 | 49.36 | 48.86 | 48.90 | R | | | | | | | | +- |
| MEA | N N | -70 -70 | 1 100 183 T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | SEPARATOR | | | | | | | | |
| Р | ٨c | | | 59.10 | 58.60 | 57.70 | 58.89 | 58.25 | 57.22 | 57.07 | 56.50 | 56.54 | BY-PASS | | | | | | | I | |
| OPETROL | Meter | reading RRI. | 6598.1 | 6657.2 | 6710.7 | 6768.4 | 6826.1 | 6882.3 | 6937.5 | 6988.0 | 7044.5 | 7098.1 | | | | | | | | | |
| | - TIME | Interval MTN | | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | | | 1 | | t t | , | | | |
| FLO | | Time HR/MTN | 12:30 | 13:00 | 13:30 | 14:00 | 14:30 | 15:00 | 15:30 | 16:00 | 16:30 | 17:00 | 17:01 | | | | | 1 | | | |

| No DOP 122 | | | | | | | | | | | | | | |
|--|-------------------|-----------------|--------------|-------------|---------|-------|---------|-------------|-------------------|--------------------------|------------|---------------|--|--|
| FLOPETROL | DETE | | Client : | STATOIL | | | | - WATED | | PPODIICTION RATE - | RATF - | Ň | Section : Annex | ณุ |
| | | | Field : | 34/10 ALPHA | НА | | | | MEASURE | - MEASUREMENT WITH METER | H METER - | | Page : 38 | 1 |
| Base : | NWB | | Well : | 34/10-16 | | | | 1 | | | | × | Report N°: <u>83/2</u> 301/37 | 301/37 |
| Date - time | Meter | ×7 | BSW | ۰,v* | 1 - Shr | | 0 | Oil Gravity | | × | Net volume | Net STO | Cumulative | |
| Time Interval | reading | | 7/0 | | Factor | Temp. | Gravily | Temp. | Grav. 60°F | | of STO: Vo | product. rate | production | - Thite |
| HR/MIN | | BBLS | B/_ | | | | | | | | | (ap) | | |
| | | | 16.09.83 | 5 | | | | | | | | | | |
| 21:30 | 55.59 | | | | | | | | | | | | | |
| 21:36 | 58.52 | 2.93 | WATER DUMPED | DUMPED | | | | | | | | | , , , , | |
| 23:00 | | | | | | | | | | | | | | , , , |
| 23:01 | 60.53 | 2.01 | WATER 1 | DUMPER | | | | | | | | | | |
| 23:30 | | | | | | | | | | | | | , | |
| 23:35 | 63.52 | 2.99 | WATER | DUMPED | | | | | | | | | | |
| 1 | | | 17.09.83 | 83 | | | | • | | | | | | |
| 00:01 | 66.10 | 2.6 | WATER DUMPED | DUMPED | | | | | | | | | | |
| 01:05 | 69.35 | 3.25 | WATER DUMPED | DUMPED | | | | | | | | | | |
| 11:30 | - | | | | | | | | | | | | | 1 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
| 11:35 | 72.51 | 3,16 | WATER DUMPED | DUMPED | | | | | | | | | 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | |
| 13:23 | 1 | | | | | | | | | | | | | |
| 13:25 | 77.59 | 5.08 | WATER 1 | DUMPED | | | | | | | | A. | | |
| , , | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Shrinkage factor | measured by Shrii | nkage tester | Tank | | | | | | Tested interval : | terval : | | | | |
| $\cdot \overline{V} o = V_{s} \times f \times (1 - BSW) = Net oil volume at separator conditions. f =$ | - BSW) = Net oil | l volume at sep | barator cond | ilions. f = | | | | | Perforations | i suo | - | | | t t |

| 100 | 2 |
|---------------------|---|
| | |
| N | 2 |

| ณ ณ | | | Units | | | | | 1 | | | | | | | | | | 1 | | | | |
|-------------------------|-------------|------------------------|--------|------------|--------------|-------|--------|--------------|-------|----------------|-------|--------|-------|--------|--------|-------------|---|---|---|---------------|-------------|--|
| Section=ANNEX | Cumulative | production | | | | | | | | | | , | | | r 1 | | | | | | | |
| 2301/36 | Net STO | product. rate | /day | | 1 | | 1 | | | | | | | | | | | | | | | |
| - 39 N - 83/ | Net volume | ofSTO Vo | | | | | | | | | | | | | | | | | | | | |
| Page Report | ч | ۷ | | | | | | | | | | | | | | | | | | , , , , | | |
| ation) | TΥ | Grav.60 [°] F | | | | | | | | | | | | | | | | | | | } | |
| ontinu | L GRAVITY | Temp. | | | | | | | | | | | | | | | 1 | I | | 1 | | |
| METER -(Continuation) | OIL | Gravity | | | | | | | | | | | | | | | | | | | 4 T | |
| | hr | Temp. | | | | | | | | | | | | | | | | | | |] | |
| - WITH | 1 - Shr | Factor | | | | | | | | | | | | | | | | | | | | |
| MEASUREMENT | `> | • | | 33 | WATER | | | WATER | | WATER | | WATER | | WATER | | | | | | |] 3 7 | |
| MEA | M S G | N O | 0/0 | 68. 60. 11 | DUMPED WATER | | | DUMPED WATER | | DUMPED | | DUMPED | | DUMPED | | | | | | | | |
| D | 7 | ۶۸ | BBLS | | 1.20 | | | 2.05 | | 2.02 | | 6.57 | | 2.94 | | | | | | | | |
| FLOPETROI | Meter | reading | | | 77.59 | 78.78 | , , | 80.83 | 5 | 82.85 | | 89.42 | | 92.36 | | 1 1 1 | | | 1 | | | |
| | TIME | Interval | | | | | | | 3 | 1 | | ţ | 4 | | | 1 | 1 | 1 | 1 | 1 | | |
| | DATE - TIME | Time | HR/MIN | | 14:02 | 14:04 | 14:32 | 14:34 | 15:00 | 15:03 | 16:02 | 16:04 | 16:48 | 16:52 | 1 | 1 | 1 | 1 | 1 | | | |

| FLOPETROL | Client : <u>STATOIL</u> Field : <u>34/10 ALPHA</u> | Section : Annex 3 Page : 40 |
|--------------|---|---|
| Base :NWB | Well :34/10-16 | Report Nº : <u>83/2301/37</u> |
| - GAS PRODUC | CTION RATE MEASUREMENT by orifice me | eter - |

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

a) Equations -

$$Q = C \sqrt{hw \times Pf}$$

- : Production rate at reference conditions. 0
- С : Orifice flow coefficient.
- hw : Differential pressure in inches of water.
- Pf : Flowing pressure in psia

$$C = Fu x Fb x Fg x Y x Ftf X Fpv$$

- Fu : Unit conversion factor in desired reference conditions.
- Fb : Basic orifice factor (Q in Cu. ft/hour).
- Fg : Specific gravity factor.
- Y : Expension factor.
- Ftf : Flowing temperature factor.
- Fpv : Supercompressibility factor (estimated).

Remarks

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

| | TABL | E OF Fu FACTOR | | |
|-------------|------------|----------------|-------------------|-------------------|
| | | REFERENCE | CONDITIONS | |
| UNITS | 60° F | 0° C | 15 ⁰ C | 15 ⁰ C |
| | 14.73 psia | 760 mm Hg * | 760 mm Hg* | 760 mm Hg* |
| Cu. ft/hour | 1 | 0.9483 | 1.0004 | 1.0137 |
| Cu. ft/day | 24 | 22.760 | 24.009 | 24.329 |
| m3/hour | 0.02832 | 0.02685 | 0.02833 | 0.02870 |
| m3/day | 0.6796 | 0.6445 | 0.6799 | 0.6889 |

* Mercury at 32 F

b) Meter data -

| Meter type : | | _ Flange taps - Pf tal | ken down/up stream |
|----------------------|--------|------------------------|--------------------|
| Flow recorder type : | BARTON | _ID of meter tube : | |

c) Specific gravity source -

Sampling point : <u>TOP_SEPARATOR_OUTLE</u> Gravitometer type : <u>KIMRAY</u>

d) Supercompressibility factor Fpv -

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

| No DOP | 125 | | | | | | | | | | | | | | |
|----------------|--------------------|------------------|----------------------------|------------------|---|-------------------------|-----------------|----------------|----------------|--------|-----------------|-----------------|-------------------------------|----------------------------|--------------------------------------|
| Ц Ц | OPETRO | | | L | Client : | STATOIL | | | | | | | | Section : ANNEX | : ANNEX 3 |
| Base : | | NWB | | | Field : Well : | 34/10- AL 34/10-16 | ALPHA -16 | | - GAS I | PRODUC | CT. RAI | E MEA | GAS PRODUCT. RATE MEASUREMENT | - Page Report | . <u>41</u> N : <u>83/2301/37</u> |
| DATE - Time | - TIME Interval | Flowing Temp. | P _∱ absolute | hw | $\sqrt{h_w \times P_f}$ | Orifice diameter | Gas gravity | Ъ ^р | F _g | 7 | F _{tf} | F _{pv} | J | Gas production rate : Q | Cumulative Production |
| HR/MIN | MIN | OF | psia | "of wat. | | Inches | | | | | | | | | MSCM |
| | | | 16.0 | 16.09,83 | | | | | | | | | | 1 3 | |
| | | | ZND FLOW | MOT | | | | | | | | | | | |
| 17:30 | | | ESTI | ESTIMATED C | CUMULATIVE | CAS PROD | PRODUCTION D | DURING CI | CLEAN UP | | | | | | 53.42 |
| 17:30 | 15 | 102 | 930 | 324 | 548.926 | 3.5 | .655 | 2695.1 | 1.2356 | 1.0019 | .9619 | 1.0703 | 2335 | 1.282 | 53.42 |
| 17:45 | 15 | 105 | 925 | 328 | 550.818 | 3.5 | .655 | 2695.1 | 1.2356 | 1.0019 | .9594 | 1.0684 | 2325 | 1.281 | 66.76 |
| 18:00 | 15 | 107 | 915 | 334 | 552.820 | 3.5 | .655 | 2695.1 | 1.2356 | 1.0020 | .9577 | 1.0666 | 2317 | 1.281 | 80.11 |
| 18:30 | 30 | 111 | 910 | 344 | 559.500 | 3.5 | .655 | 2695.1 | 1.2356 | 1.0020 | .9543 | 1.0644 | 2304 | 1.289 | 106.96 |
| 19:00 | 30 | 113 | 905 | 348 | 561.195 | 3.5 | .664 | 2695.1 | 1.2272 | 1.0021 | .9526 | 1.0647 | 2285 | 1.282 | 133.67 |
| 19:30 | 30 | 113 | 885 | 356 | 561.302 | 3.5 | .664 | 2695.1 | 1.2272 | 1.0022 | .9526 | 1.0632 | 2282 | 1.281 | 160.36 |
| 20:00 | 30 | 114 | 885 | 358 | 562.877 | 3.5 | .664 | 2695.1 | 1.2272 | 1.0022 | .9518 | 1.0628 | 2279 | 1.283 | 187.09 |
| 20:30 | 30 | 114 | 890 | 360 | 566.039 | 3.5 | .660 | 2695.1 | 1.2309 | 1.0022 | .9815 | 1.0618 | 2284 | 1.293 | 214.03 |
| 21:00 | 30 | 117 | 890 | 363 | 568.392 | 3.5 | .660 | 2695.1 | 1.2309 | 1.0022 | .9493 | 1.0605 | 2276 | 1.293 | 240.96 |
| 21:30 | 30 | 118 | 890 | 364 | 569.174 | 3.5 | .660 | 2695.1 | 1.2309 | 1.0022 | .9485 | 1.0601 | 2273 | 1.294 | 267.92 |
| 22:00 | 30 | 120 | 890 | 365 | 569.956 | 3.5 | .660 | 2695.1 | 1.2309 | 1.0022 | .9469 | 1.0593 | 2267 | 1.292 | 294.84 |
| 22:30 | 30 | 120 | 890 | 365 | 569.956 | 3.5 | .660 | 2695.1 | 1.2309 | 1.0022 | .9469 | 1.0593 | 2267 | 1.292 | 321.75 |
| | | | | | | | | | | | | | | | |
| Eu Eu | .6799 | | Record hw = | der rang 0-40 | Recorder ranges : Pf = <u>C</u> hw = 0-400 IN H ₂ 0 _ T | 0-1500 P: Temp. = _(| PSIG 0-300°F | | - TESTED | 1 7 | INTERVAL : | 3177-3187 | 87 | | |
| | | 1 | | | | | | | | | | | | | |

| No.: DOP | 126 | | | | | | | | | | | | | | |
|----------------|--------------------|------------------|----------------------------|-----------|----------------------------------|---------------------|--|------------------|-------------------------|-------------|-----------------|-----------------|---|--------------------------|--------------------------|
| Ц Ц | | ретро | | ٦L | GAS PRODUC. RATE MEA | DUC. R | ATE MI | EASURE | SUREMENT-(Continuation) | (Continu | ation) | Page Report | Page : 42 Report N ⁻ : 83/2301/37 | Section : ANNEX | |
| DATE - Time | - TIME Interval | Flowing Temp. | P _f absolute | | √h _w × P _f | Orifice diameter | Gas gravity | F _b | F _g | 7 | F _{tf} | F _{pv} | C | Gas production rate Q | Cumulative Production |
| HR/MIN | MIM | OF | psia | "of wat. | | Inches | (air = 1) | | | | | | | MMSCM/O | MSCM |
| 22:30 | | | 16.0 | 16.09.83 | | | 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1 | and the second a | 2 2 2 | 4 4 2 | × * | | | | |
| 23:00 | 30 | 120 | 890 | 368 | 572.294 | 3.5 | • 660 • | 2695.1 | 1.2309 | 1.0022 | .9469 | 1.0593 | 2267 | 1.297 | 348.67 |
| 23:30 | 30 | 121 | 890 | 368 | 572.294 | 3.5 | .660 | 2695.1 | 1.2309 | 1.0022 | .9460 | 1.0589 | 2264 | 1.296 | 375.7 |
| 24:00 | 30 | 123 | 890 | 368 | 572.294 | 3.5 | .660 | 2695.1 | 1.2309 | 1.0022 | .9444 | 1.0580 | 2259 | 1.293 | 402.6 |
| | | | 17.0 | 17.09.83 | | | | | | | | | | | |
| 00:30 | 30 | 123 | 890 | 368 | 572.294 | 3.5 | .660 | 2695.1 | 1.2309 | 1.0022 | .9444 | 1.0580 | 2259 | 1.293 | 429.5 |
| 01:00 | 30 | 123 | 890 | 368 | 572.294 | 3.5 | . 668 | 2695.1 | 1.2309 | 1.0022 | .9444 | 1.0580 | 2259 | 1.293 | 456.5 |
| 01:00 | | | BYPASS | | SEPARATOR | | | | | | | | | | |
| 01:01 | | | WELL | SHUT | IN AT CHOKE | MANIFOLD | D AND LPR | R | | | | | | | |
| | | | 3RD | FLOW | | | | | | | | | | | |
| | | | ESTI | ESTIMATED | CUMULATIVE | GAS PROD | PRODUCTION I | DURING C | CLEAN-UP | | | | | 51.16x10 ³ | |
| 10:45 | | 114 | 935 | 288 | 518.922 | 4.0 | .663 | 3718.2 | 1.2281 | 1.0014 | :9518 | 1.0662 | 3155 | 1.637 | 507.6 |
| 11:00 | 15 | 117 | 940 | 292 | 523.908 | 4.0 | .663 | 3718.2 | 1.2281 | 1.0014 | .9493 | 1.0651 | 3143 | 1.647 | 524.8 |
| 11:15 | 15 | 120 | 935 | 296 | 526.808 | 4.0 | .663 | 3718.2 | 1.2281 | 1.0014 | .9469 | 1.0634 | 3130 | 1.647 | 542.0 |
| 11:30 | 15 | 123 | 935 | 296 | 526.080 | 4.0 | .665 | 3718.2 | 1.2263 | 1.0014 | .9444 | 1.0624 | 3115 | 1.639 | 559.0 |
| 12:00 | 30 | 125 | 930 | 300 | 528.205 | 4.0 | .665 | 3718.2 | 1.2263 | 1.0014 | .94282 | 1.0606 | 3104 | 1.640 | 593.2 |
| 12:30 | 30 | 126 | 925 | 302 | 528.536 | 4.0 | .665 | 3718.2 | 1.2263 | 1.0014 | .9420 | 1.0598 | 3099 | 1.638 | 627.3 |
| 13:00 | 30 | 127 | 925 | 304 | 530.283 | 4.0 | .663 | 3718.2 | 1.2281 | 1.0015 | .9412 | 1.0591 | 3099 | 1.643 | 661.5 |
| | | | | | | | | | | | | | | | |

| | M | Cumulative Production | | | .7 | 6. | 0 | .2 | .6 | 6 | .2 | .5 | | | | | | |
|----------|---|---------------------------------|-----------|----------|---------|---------|---------|---------|---------|---------|---------|---------|-------------------|--|--|--|--|---|
| | - ANN | | MSCM | | 695. | 729. | 764.0 | 798. | 832. | 866.9 | 901. | 935. | | | | | | |
| | Section : ANNEX 3 | Gas production rate : O | MMSCM/0 | | 1.642 | 1.640 | 1.639 | 1.642 | 1.647 | 1.646 | 1.649 | 1.647 | | | | | | |
| | Page | ູ ບ | | | 3095 | 3091 | 3089 | 3086 | 3086 | 3084 | 3084 | 3080 | | | | | | |
| | Page Report N | F _{pv} | | | 1.0584 | 1.0580 | 1.0581 | 1.0581 | 1.0581 | 1.0575 | 1.0575 | 1.0571 | | | | | | |
| | ation) | F _{tf} | | | .9404 | .9396 | .9396 | .9388 | .9388 | .9380 | .9380 | .9372 | | | | | | |
| | Continu | ۲ | | | 1.0015 | 1.0015 | 1.0015 | 1.0015 | 1.0015 | 1.0015 | 1.0015 | 1.0015 | | | | | | |
| | MENT–(| F _g | | | 1.2281 | 1.2281 | 1.2272 | 1.2272 | 1.2272 | 1.2281 | 1.2281 | 1.2281 | | | | | | - |
| | ASURE | ц ц | | У | 3718.2 | 3718.2 | 3718.2 | 3718.2 | 3718.2 | 3718.2 | 3718.2 | 3718.2 | | | | | | |
| | ATE ME | Gas gravity | (air = 1) | A . W . | .663 | .663 | .664 | .664 | •664 | .663 | .663 | .663 | | | | | | |
| | DDUC. R | Orifice diameter | + | 1 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | | | | | |
| | GAS PRODUC. RATE MEASUREMENT-(Continuation) | V ^h w×P _f | | × | 530.585 | 530.585 | 530.585 | 532.024 | 533.760 | 533.760 | 534.626 | 534.626 | ARATOR | | | | | |
| | Ľ | hw V | "of wat. | 9,83 | 306 | 306 | 306 | 306 | 308 | 308 | 309 | 309 | BY-PASS SEPARATOR | | | | | |
| | | P _f absolute | psia | 17.09.83 | 920 | 920 | 920 | 925 | 925 | 925 | 925 | 925 | вҮ-Р/ | | | | | |
| | OPETROL | Flowing Temp. 8 | _ | | 128 | 129 | 129 | 130 | 130 | 131 | 131 | 132 | | | | | | |
| 126 | D D | - TIME Interval | | | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | | | | | | |
| No : DOP | | DATE - Time | IN | 13:00 | 13:30 | 14:00 | 14:30 | 15:00 | 15:30 | 16:00 | 16:30 | 17:00 | 17:01 | | | | | |

FLOPETROL

Client : STATOIL Field : 34/10 ALPHA Well : 34/10-16

____Section : ____Page : 44

Report Nº: 83/2301/37

1

Base :

NWB

SURFACE SAMPLING

2ND FLOW 52/64" POSITIV CHOKE

16.09.83

23:03 START SAMPLING 1ST SET PVT SAMPLE

OIL BOTTLE NO. 8308922 GAS BOTTLE NO. A 14786 GAS BOTTLE NO. A 14681

17.09.83

00:05 START SAMPLING 2ND SET PVT SAMPLE

OIL BOTTLE NO. 83021217 GAS BOTTLE NO. A 14695 GAS BOTTLE NO. A 14761

DEAD OIL SAMPLES

- 1 x 200 LITER DRUM OF CONDENSATE
- 6 x 1 LITER GLASS OF CONDENSATE

2 x 10 LITER JERRY CANS OF CONDENSATE

4 x 1 LITER PLASTIC CANS OF WATER

3RD FLOW 80/64" POSITIV CHOKE

START TAKING 3RD SET PVT SAMPLE

OIL BOTTLE NO. 8208308 GAS BOTTLE NO. A 14668 GAS BOTTLE NO. A 14751

START TAKING 4TH SET PVT SAMPLE

OIL BOTTLE NO. 83021209 GAS BOTTLE NO. A 14789 GAS BOTTLE NO. A 14688

| FLO | PETRO | Client :SI | ATOIL | | Section | | | | | | |
|---|--|---------------------------------------|-----------------------------|-------------------|--------------------------|---------------------------|--|--|--|--|--|
| Base _{NWB} | | Field : <u>34</u> Well : <u>34</u> | /10 ALPHA /10-16 | | Page Report | : <u>45</u> №3/2301/37 | | | | | |
| | - | SURFACE SA | | | | _ | | | | | |
| Date of sam Sample nati | pling: <u>16.09.83</u> ure : <u>CONDENSATE</u> | Service ord | er : Sampling poir | nt: <u>SIG</u> | HT GLASS | OUTLET | | | | | |
| | zone BRENT | | 3177-3187M | Samplir | - | | | | | | |
| Depth origi Surface ele | n : <u>RKB</u> vation1 <u>60 m</u> | Tubing Dia : Shoe : | 5" VAM 3180.95m | Casing Shoe | Dia : : | 5/8" | | | | | |
| Bottom hole static conditions | Initiai pressure Latest prassure mea Temperature | sured : | at depth: | | date | | | | | | |
| Time at which | <u>B – MEASU</u> ch sample was taken: | REMENT AND SA | MPLING CONE Time elapsed | DITIONS _ | sation: | 5 hr 30 min | | | | | |
| Bottomhole dynamic conditions | Choke size :52/6 Bottom hole pressure Bottom hole temp | • | _ at depth: | | date : | - | | | | | |
| Flow measur Values used | rement of sampled gas for calculations : Fb= | | | | | | | | | | |
| <u>Separator</u> | Fb= Pressure : <u>875</u> P3 Temp : <u>121</u> | F Oil (separator c | ond): <u>3808.</u> | <u>83 m</u> -600P | D B (sep | arator con:) | | | | | |
| <u>Stock</u> tank | Atmosphere : Tank temperature : | mmHg • | | 91 60 F:_ | 313.9 M ³ | L®OPD ABCat | | | | | |
| | % WLR:_ | <u> 3 </u> % | Transfer duration | | 29 MIN | | | | | | |
| Final conditi | luid : <u>Hg</u> | <u>tle :</u> | Vol on | bottle 7 | 700cc | Ore He is het | | | | | |
| | 620 PSI Temp: | | | Сар | 50 cc | Occ Hg in bot | | | | | |
| C_IDENTIFICATION OF THE SAMPLE _ Shipping bottle No: 8308922 sent on : STATOIL Shipping order No: Addressee : | | | | | | | | | | | |
| Coupled with | h | LIQUID | | | GAS | | | | | | |
| Bottom he | ble samples No | | | | | | | | | | |
| Surface s | amples No | | | | - <u>14786</u> -14681 | | | | | | |
| <u>Measuremen</u> Al Tark | t conditions, | B_ Meter_ with shrinkage te | ster. D . Cor | | _Dump_ h_tank_ | | | | | | |
| <u></u> | D _ REMAR | KS _ | | | V sa | Chief Operator | | | | | |
| ALL READIN | GS FROM 23:30 | | | | А. | BERGENSEN | | | | | |
| | | | | | | | | | | | |

| | FLO | PETR | OL | Client | :STATOIL | | Section | | | |
|---|-------------------------------------|--|--------------------|----------------------------|---|---|-------------------------|---|--|--|
| | Base _{NWB} | | | Field Well | : <u>34/10_ALP</u> : <u>34/10-16</u> | на | Page Report | : _46 N:: <u>83/2301/37</u> | | |
| | | | <u>_</u> SU | RFACE | SAMPLIN | <u>G _</u> | | | | |
| | Date of sam Sample natu | pling : <u>16.09.8:</u> ure : <u>GAS</u> | 3 | Service | order : Samplı | ng point :GA | mpling No : S OUTLET | 2 SEPARATOR | | |
| | Producing | <u>A – RES</u> zone B <u>RENT</u> | ERVOIR | AND WE Perforation | ELL CHARACT | <u>TERISTICS</u> 187M Sampli | ing interval | ; | | |
| | Depth origi Surface ele | n : <u>RKB</u> vation1 <u>60 m</u> | | Tubing D Shoe | bia.: <u>5" VAM</u> : <u>3180.9</u> | 5m Casing 5m Shoe | g D:a : <u>9</u> : | 5/8" | | |
| | Bottom hole static conditions | Initial pressure Latest pressure Temperature | measured | ı : | at o | depth: depth: depth: | date | : | | |
| | Time at whic | <u>B – ME</u> ch sample was tal | ASUREME ken :23 | NT AND | SAMPLING | CONDITIONS apsed since stabi | - lisation: | 5 hr 30 min | | |
| | Bottomhole dynamic conditions | Bottom hole pres | sure : | | at depth: | pressure: <u>230.9</u> | date : | | | |
| | Flow measur Values used f | rement of sampled for calculations : | | | | | | | | |
| | <u>Separator</u> | Pressure : 875 Temp : 121 | PSIG R C F C | lates - Gas In (separat | s :1 | .296 MMSCM SCF 3808.83 m ³ / 50 F | D GOR | 0 : <u>3395,2 m³/m³</u> arator conc) | | |
| | <u>Stock</u> <u>tank</u> | Atmosphere Tank temperature | | | | Oil at 60 °F :_ | 313.9 M ³ | | | |
| | | ⁰₀ ₩l | | | | | | | | |
| | | uid: <u>Hg</u> | | | | duration : | <u>29 MIN</u> | | | |
| | | ons of the shipping 875 PSI Ter | | | | | | | | |
| <u>C_IDENTIFICATION OF THE SAMPLE</u> Shipping bottle No: <u>17-14786</u> sent on :by:Shipping order No:. Addressee : | | | | | | | | | | |
| | Coupled with | 1 L | | LIQUID | | | GAS | | | |
| | Bottom ho | le samples No | - | | • | | | | | |
| | <u>Surface sa</u> | imp l es No | 83089 | 922 | - | A | -14681 | | | |
| | Measurement AL Tank . | | ted with | B_ Mete shrinkage | er. e tester. b | C - Corrected wit | _ Dump _ h tank _ | | | |
| | | <u>D _ RE</u> | MARKS - | | | | Visa | Chief Operator | | |
| No DOP 127 | ALL READING | S FROM 23:30 | | | | | А. | BERGENSEN | | |

| FLO | PETR | | ATOIL | S(| | |
|--------------------------------------|--|--|--|---|--|--|
| Base : _{NWB} | | Field : <u>34</u> Well : <u>34</u> | /10 ALPHA /10-16 | P | age : 47 eport N*:83/2301/37 | |
| | | _SURFACE SA | MPLING - | | | |
| Date of sam Sample nate | pling: <u>16.09.83</u> ure : <u>GAS</u> | Service ord | er:Sampling poin | t : <u>GAS</u> | Ung No :3 | |
| Producing | <u>A – RESI</u> zone B <u>RENT</u> | ERVOIR AND WELL Perforations: | CHARACTERISTI 3177-3187M | <u>CS _</u> Sampling | interval : | |
| Depth origi Surface ele | n : <u>RKB</u> vation1 <u>60 m</u> | Tubing Dia: Shoe : | 5" VAM 3180.95m | Casing 1 Shoe | Dia :5/8" : | |
| Bottom hole static conditions | Latest pressure | : measured : : | at depth: | | date : | |
| Time at which | <u>B – MEA</u> ch sample was tak | SUREMENT AND SA en: | MPLING COND Time elapsed s | ITIONS _ since stabilisa | 5 hr 30 min | |
| Bottom hole dynamic conditions | Bottom hole press | 2/64"since: <u>16:21</u> sure: | _ at depth: | | Well head temp :81°C date : date : | |
| Flow measur Values used | rement of sampled for calculations : | $gas = Gravity(air 1):$ $F_r = 2695 1 F_r = 1$ | .660 F | actor $Fpv = -$ | $\frac{1}{\sqrt{2}}$: <u>1.0589</u> = 0.9460 | |
| <u>Separator</u> | Pressure : 875 Temp : 1210 | PSIG <u>Rates</u> – Gas C F Oil (separator ci | : <u>1.296 1</u> ond): <u>3808.8</u> | MMSCMSCFD 33 m ³ 60 PD | = 0.9460 GCR: <u>3395,2 m³/m³</u> B (separator cond) | |
| <u>Stock</u> tank | Atmosphere Tank temperature | :mmHg | | t 60 °F : <u>3</u> | <u>13.9 М³/</u> ВОР <u>D</u> [А]В]С[а] b | |
| | | R:3%º/o | | | | |
| | luid :VACCIIM | | Transfer duratio | on:29 | MIN | |
| | ons of the shipping 875_PSTTen | | | | | |
| | | | | Sh | ipping order No : | |
| Coupled with | h [| LIQUID | | | GAS | |
| Bottom ho | ole samples No | | | | | |
| Surface si | Surface samples No A-14786 | | | | | |
| Measuremen Al Tank - | t conditions, a_Correc | B_ Meter . ted with shrinkage te | ster. D_ Corr | C_ C | Dump _ tank _ | |
| | <u>D –</u> REN | 1ARKS - | | | Visa Chief Operator | |
| ALL READIN | GS FROM 23:30 | | | | A. BERGENSEN | |
| | | | | alat a tight and a time to a time to a time out | | |

| FLOPETROL | Client :SI | CATOIL | | | | | | | |
|--|---|--|---|--|--|--|--|--|--|
| Base NWB | Field : 34 Well : 34 | | Page : 48 Report N 83/2301/37 | | | | | | |
| | | | | | | | | | |
| | | MPLING _ | | | | | | | |
| Date of sampling : <u>17.09.83</u> Sample nature : <u>CONDENSATE</u> | _ Service ord | er:Sampling point:SI | GH GLAS SEPARATOR | | | | | | |
| Producing zone <u>BRENT</u> | _ Perforations: | | - | | | | | | |
| Depth origin : <u>RKB</u> Surface elevation: <u>160 m</u> | _ Tubing Dia: _ Shoe : | 5" VAM Casin 3180.95m Shoe | g Dia :9 5/8" : | | | | | | |
| Bottom hole Initial pressure | | at depth : | | | | | | | |
| <u>static</u> Latest prassure measure <u>conditions</u> Temperature | | at depth : at depth : | | | | | | | |
| B – MEASUBEM | ENT AND SA | MPLING CONDITIONS | | | | | | | |
| $\frac{B - MEASUREM}{Time at which sample was taken:$ | | | | | | | | | |
| | | Well head pressure: 231.8 | | | | | | | |
| | | _ at depth: _ at depth: | | | | | | | |
| Flow measurement of sampled gas - G Values used for calculations : | ravity(air 1): | .660 Factor Fpv | $=\frac{1}{\sqrt{Z}}:$ 1.0589 | | | | | | |
| $F_b = 26$ Separator Pressure: 875 PSIG | 95.1, F _g = 1 Rates - Gas Oil (separator c | .2309, $y = 1.0022$, F_{L} : <u>1.293 MMSCM scr</u> ond): <u>380:76 m³/</u> BOR | f = 0.9444 = D GOR: <u>3395, 2 m³/m³</u> = D B (separator cond) | | | | | | |
| <u>Stock</u> Atmosphere : <u>tank</u> Tank temperature : | mmHg • | F Oil at 60 °F : . | <u>313.9 М³/Лворр</u> Авсар | | | | | | |
| BSW:% WLR: | <u>3%</u> º/o | | | | | | | | |
| Transfering fluid : <u>HG</u> | | Transfer duration : | 30 MIN | | | | | | |
| Final conditions of the shipping bottle : Pressure : 620 PSI Temp : 5 | 7°F | BOTTLE 700cc SAMPLE 600cc 50 GAS 50 cc | Hg left in bottle | | | | | | |
| <u>C_IDENTIFICA</u> Shipping bottle No: <u>8302127</u> sen Addressee: | | SAMPLE _ | Shipping order No : | | | | | | |
| Coupled with | LIQUID | | GAS | | | | | | |
| Bottom hole samples No | | | | | | | | | |
| A-14695 | | | | | | | | | |
| Surface samples No A-14761 | | | | | | | | | |
| Measurement conditions. A. Tank B. Meter C. C. Dump a a. Corrected with shrinkage tester. b. Corrected with tank a | | | | | | | | | |
| D - REMARKS | D _ REMARKS _ Visa Chief Operato | | | | | | | | |
| ALL READINGS FROM 01:00 | | | A. BERGENSEN | | | | | | |
| | | | | | | | | | |

No DOP 127

| FLO | PETR | DL Client | : STATOIL | | | | | | |
|--------------------------------------|--|---|---|---------------------------------|--|--|--|--|--|
| Base : _{NWB} | | Field Well | = <u>34/10 ALPHA</u> = <u>34/10-16</u> | | Page : <u>49</u> Report N::8 <u>3/2301/37</u> | | | | |
| | _SURFACE SAMPLING _ | | | | | | | | |
| Date of sam Sample natu | Date of sampling : 17.09.83 Service order : Sampling No :5 Sample nature : GAS Sampling point :GAS | | | | | | | | |
| Producing | <u>A – RESE</u> zone B <u>RENT</u> | RVOIR AND WE | LL CHARACTER ns:3177-3187 | ISTICS _ MSamplin | g interval : | | | | |
| Depth origi Surface ele | n : <u>RKB</u> vation1 <u>60 m</u> | Tubing Di Shoe | a: <u>5" VAM</u> : <u>3180.95</u> m | Casing Shoe | Dia :9 5/8" : | | | | |
| Bottom hole static conditions | · · · | neasured : | at dep | th: | date : date : date : date : | | | | |
| Time at which | <u>B- MEAS</u> ch sample was take | DUREMENT AND | SAMPLING CO | ONDITIONS _ ed since stabili | 6 hr 30 min | | | | |
| Bottom hole dynamic conditions | Bottom hole press | ure : | at depth: | | ARVell head temp :81°C _ date : _ date : | | | | |
| Flow measur Values used t | | | | | $\frac{1}{\sqrt{Z}}$: <u>1.0589</u> | | | | |
| <u>Separator</u> | Pressure : 875 Temp : 1230 | _PSIG <u>Rates</u> _ Gas C F Oil (separato | | 93 MMSCMSCF | = 0.9444 $GOR: 3395, 8 m^3/m^3$ B (separator cond) | | | | |
| <u>Stock</u> tank | Atmosphere : Tank temperature : | mmHg . | ·`F (| Dil at 60 °F : | 313.8 M ³ /BOPD [A]B]C]a]b | | | | |
| | %o WLF | | _º/o | | | | | | |
| | buid : VACCUM | | Transfer du | ration :3 | 0 MIN | | | | |
| Pressure : | <u>875 PSI</u> Tem | p: <u>57°F</u> | _ | | | | | | |
| | | | | S | hipping order No : | | | | |
| Coupled with | <u> </u> | LIQUID | | | GAS | | | | |
| Bottom ho | <u>ble samples No</u> | | | | | | | | |
| Surface sa | Surface samples No A-14761 | | | | | | | | |
| Measuremen A. Tank . | Measurement conditions, A. Tank B. Meter C. C. Dump - a. Corrected with shrinkage tester. b. Corrected with tank . | | | | | | | | |
| | D _ REM | ARKS - | | | Visa Chief Operator | | | | |
| | GS FROM 01:00 | | | | A. BERGENSEN | | | | |
| | | | | | | | | | |

| FLOPETE | | ATOIL | Se | ction:ANNEX 42 | | | | | |
|---|--|---|---|---|--|--|--|--|--|
| Base _{NWB} | | /10 ALPHA /10-16 | Pa | age : 50 eport N*8 <u>3/2301/37</u> | | | | | |
| | | | | | | | | | |
| Date of sampling : <u>17.09.8</u> Sample nature : CAS | _ SURFACE SAMPLING _ Date of sampling : <u>17.09.83</u> Service order : Sampling No :6 Sample nature : <u>GAS</u> Sampling point : <u>GAS</u> OUTLET SEPARATOR | | | | | | | | |
| A _ RE | SERVOIR AND WELL | CHARACTERISTIC | :s _ | | | | | | |
| Producing zoneBRENT Perforations: 3177-3187M Sampling interval: Depth origin : RKB Tubing Dia : 5'' VAM Casing Dia : 9 5/8'' Surface elevation: 60 m Shoe : 3180.95m Shoe : 3180.95m | | | | | | | | | |
| Bottomhole Initial pressure | | at depth: | | | | | | | |
| | e measured : | | | date : | | | | | |
| $\frac{B - M}{T_{\text{Ime}}}$ | ASUREMENT AND SA | MPLING CONDI Time elapsed si | TIONS _ nce stabilisat | tion:6 hr 30 min | | | | | |
| dynamic Bottom hole pre | 52/64"since: 16:21 essure: | _ at depth: | (| date : | | | | | |
| | np : | | | | | | | | |
| Flow measurement of sample Values used for calculations : | | | | - | | | | | |
| Separator Pressure : 875 Temp : 123 | $F_{b} = 2695.1, F_{g} = 1,$ $F_{b} = 2695.1$ | : <u>1.293 MM</u> ond): <u>380.76</u> | <u>ISCM</u> SCFD m ³ /DBOPD | GOR: <u>3395,8 m³/m³</u> (separator cond) C | | | | | |
| <u>Stock</u> Atmosphere <u>tank</u> Tank temperatu | :mmHg re : | F Oil at | 60 F : <u>31</u> | 3.8 M ³ /DBOPD ABCab | | | | | |
| BSW:º/o W | /LR: <u>3%</u> 0/0 | | | | | | | | |
| Transfering fluid :VACCU | ۹ | Transfer duration | 1: <u>30</u> | MIN | | | | | |
| Final conditions of the shippin Pressure : 875 PSI T | | | | | | | | | |
| <u>C_ID</u> Shipping bottle No: <u>1476</u> Addressee: | | | Shij | oping order No : | | | | | |
| Coupled with | LIQUID | 1 | | GAS | | | | | |
| Bottom hole samples No | | | | | | | | | |
| Surface samples No | 5 | | | | | | | | |
| Measurement conditions, A_ Tank . B_ Meter . C_ Dump . a_ Corrected with shrinkage tester. b_ Corrected with tank . | | | | | | | | | |
| <u>D _ R</u> | EMARKS - | | | Visa Chief Operator | | | | | |
| ALL READINGS FROM 01:00 | | A. BERGENSEN | | | | | | | |
| | | | | | | | | | |

No - DOP 127

| FLO | PETR | | ATOIL | | | | | | |
|---|--|---|---|--|--|--|--|--|--|
| Base _{NWB} | | Field :34 Well :34 | | Page :_51 Report N*83/2301/37 | | | | | |
| | | | | | | | | | |
| | _SURFACE SAMPLING _ | | | | | | | | |
| Date of sam Sample nate | pling: <u>17.09.83</u> ure : <u>CONDENS</u> | Service orde | er:Sampling point:Sa | GHT GLASS CONDENSATE | | | | | |
| Producing | <u>A – RES</u> zone <u>BRENT</u> | ERVOIR AND WELL (| CHARACTERISTICS _ 3177-3187M Samp | ling interval: | | | | | |
| Depth origi Surface ele | n : <u>RKB</u> vation <u>160 m</u> | Tubing Dia : . Shoe : . | 5" VAM Casır 3180.95m Shoe | ng Dia : 5/8" : | | | | | |
| Bottom hole static | · · | | at depth : at depth : | | | | | | |
| conditions | Temperature | | at depth: | | | | | | |
| Time at whit | | | MPLING CONDITIONS Time elapsed since stab | | | | | | |
| Bottom hole | Choke size : | 80/64"_since:10:00 | Well head pressure: 145.1 | BARA 76°C | | | | | |
| dynamic conditions | | | at depth: | date : date : | | | | | |
| Flow measured Values used | I rement of sampled for calculations : | $\frac{1}{2} \frac{gas}{a} = Gravity(air 1):$ | .664 Factor Fpv 2272, y = 1.0015, F _t | $r = \frac{1}{\sqrt{2}}$: <u>1.0581</u> r = 0.9388 | | | | | |
| <u>Separator</u> | | 1 | | FD GOR: 3795 PD B (separator cond) | | | | | |
| <u>Stock</u> <u>tank</u> | Atmosphere Tank temperature | :mmHg | | 3/5:5 M ³ /B _{OPD} [A]B]C[a]D | | | | | |
| BSW: | 2.0_% W | LR:% | | | | | | | |
| Transfering f | luid :MERCUR | Y | Transfer duration : | 37 MIN | | | | | |
| Final conditi Pressure : | ons of the shippin 41.4 BAR Te | g <u>bottle :</u> mp :20°F | VOL OF BOTTLE SAMPLE 600 cc CAS CAP 50 cc | 700 cc 50 Hg left in bottle | | | | | |
| Shipping bo Addressee : . | ttle No : 82083 | NTIFICATION OF THE S | <u>SAMPLE _</u> by: | Shipping order No : | | | | | |
| Coupled wit | h | LIQUID | T | GAS | | | | | |
| Bottom ho | <u>pie samples No</u> | | | | | | | | |
| l | | | | | | | | | |
| Surface samples No A=14668 | | | | | | | | | |
| Measurement conditions, A_ Tank . B_ Meter . C_ Dump . a_ Corrected with shrinkage tester. b_ Corrected with tank . | | | | | | | | | |
| D _ REMARKS _ Visa CHier Operator | | | | | | | | | |
| ALL READINGS FROM 15:30 | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Nn DOP 127

| FLOPETROL | Client | STATOIL | |
|--|----------------------------|--|--|
| Base NWB | Field Well | =3 <u>4/10_ALPHA</u> =3 <u>4/10-16</u> | Page : <u>52</u> Report N [*] 83/2301/37 |
| <u>_ SL</u> | JRFACE | SAMPLING _ | |
| Date of sampling : <u>17,09,83</u> Sample nature : <u>GAS</u> | _ Service | order : Sampling po | Sampling No : 8 |
| <u>A - RESERVOIR</u> Producing zoneBR <u>ENT</u> | AND W | ELL CHARACTERIS ons: <u>3177-3187M</u> | TICS _ Sampling interval : |
| Depth origin : <u>RKB</u> Surface elevation160 m | | | |
| | d : | at depth | : date : : date : : date : |
| Time at which sample was taken : | :03 | | since stabilisation: 4 hr |
| dynamic Bottom hole pressure : | | at depth: | date : |
| Flow measurement of sampled gas = G Values used for calculations : Fb= 371 | iravity(air 1 18.2, Fat | = 1.2272, y = 1. | Factor Fpv = $\frac{1}{\sqrt{2}}$: 1.0581 0015, Ftf = 0.9388 |
| Separator Pressure : 910 PSIG Temp : 130°C *F | Rates - Ga Oil (separat | s . <u>1.647</u> for cond): <u>434</u> m | 0015, F _{tf} = 0.9388 <u>MMSCM/D</u> CFD GOE: <u>3795</u> <u>137D</u> BOPD B Separator cond 1 |
| <u>Stock</u> Atmosphere : <u>tank</u> Tank temperature : | mmHg | •`FOıl | at 60 F : <u>375.5 M³/D_{BOPD}</u> |
| BSW: 2.0 % WLR: | | _0/0 | |
| Transfering fluid : <u>VACUUM</u> | | Transfer durat | ion: 37 MIN |
| Final conditions of the shipping bottle : Pressure : 63.7 BAR Temp : 20 | 0 ⁰ F | | |
| <u>C_ IDENTIFICAT</u> Shipping bottle No : <u>8208308</u> sen Addressee : | TION OF 1 | HE SAMPLE _ by: | Shipping order No : |
| Coupled with | LIQUID | | GAS |
| Bottom hole samples No | | | |
| Surface samples No | | • • • • • • • • • • • • • • • • • • • | A-14668 A-14751 |
| Measurement conditions. A. Tank . a. Corrected with | B_ Meti n shrinkag | er. e tester. D. Co | C_ Dump |
| <u>D _ REMARKS</u> . | = | | Visal Chief Operator |
| ALL READINGS FROM 15:30 | | | |
| 900 | | | |
| | | | |

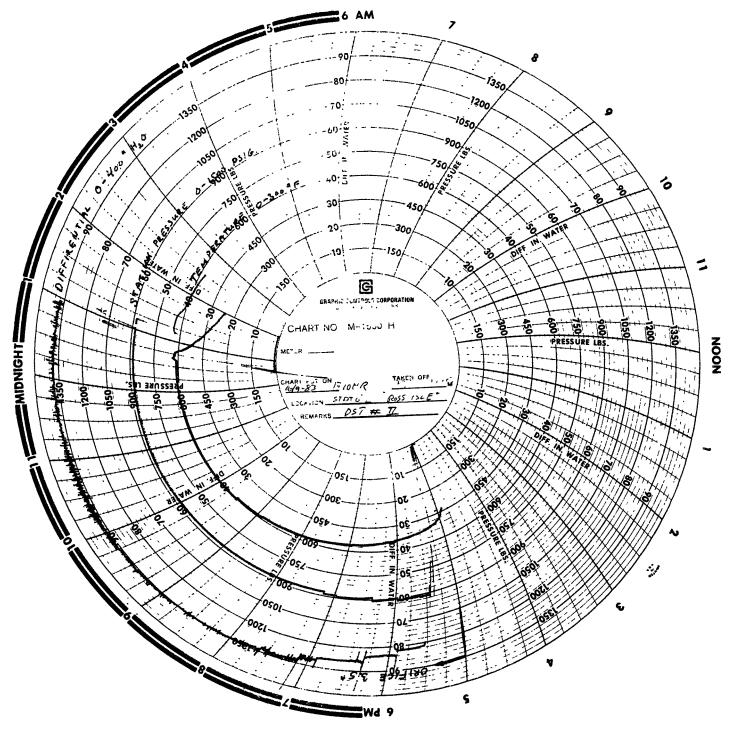
| FLOPETR | Client STATOIL | Section:ANNEX |
|---|--|---|
| Base NWB | Field <u>34/10 ALP</u> Well <u>34/10-16</u> | |
| | _SURFACE SAMPLI | NG_ |
| Date of sampling : <u>17.09.83</u> Sample nature : <u>GAS</u> | Service order : Samp | Sampling No :9 |
| <u>A – RE</u> Producing zone ^{B<u>RENT</u>} | SERVOIR AND WELL CHARAC Perforations: 3177-3 | TERISTICS |
| Depth origin : <u>RKB</u> Surface elevation46 <u>0 m</u> | Tubing Dia : <u>5" VAM</u> Shoe : <u>3180.9</u> | 1 Casing Dia : 9 5/8" 15m Shoe : |
| Bottom holeInitial pressurestaticLatest pressureconditionsTemperature | measured :at | depth: |
| $\frac{B - ME}{T_{I}me \text{ at which sample was ta}}$ | ASUREMENT AND SAMPLING ken: | B CONDITIONS _ 4 hr |
| dynamic Bottom hole pre | ssure : at dept! | 145.1 BARA 76°C d pressure: |
| Flow measurement of sample Values used for calculations : | $\frac{1}{2} gas = Gravity(air 1):$ | Factor Fpv = $\frac{1}{\sqrt{2}}$: $\frac{1.0581}{\sqrt{2}}$ |
| <u>Separator</u> Pressure : 910 Temp : 130 | PSIG Rates - Gas : C *F Oil (separator cond): | $VZ = 1.0015, F_{tf} = 0.9388$.647 MMSCM/D 434 m³/D SCFD GOR: 3795 (separator cond) C |
| Stock Atmosphere | :mmHg* | F Oil at 60 F : 375.5 M3/DBOPD |
| BSW: <u>2.0</u> % W | LR:% | |
| Transfering fluid :VACUUM | Transfe | er duration:37 MIN |
| <u>Final conditions of the shippin</u> Pressure : <u>63.7 BAR</u> Te | g <u>bottle :</u> mp : | |
| C_IDE Shipping bottle No: Addressee: | NTIFICATION OF THE SAMPLE | Shipping order No : |
| Coupled with | LIQUID | GAS |
| Bottom hole samples No | | |
| Surface samples No | 8208308 | A-14668 |
| Measurement conditions, | B_ Meter . cted with shrinkage tester. | C_ Dump . |
| | | |
| ALL READINGS FROM 15:30 | MARKS _ | Visa Chief Operation |
| 400 | | |
| 02 | | |

| FLO | PETR | Client :51 | ATOIL | | | |
|--------------------------------------|--|---|-------------------------------------|-----------------------------------|------------------------------------|-------------------------------------|
| Base _{NWB} | | Field :34 Well :34 | /10 ALPHA /10-16 | | Page Report | : <u>54</u> N°8 <u>3/2301/37</u> |
| Date of sam Sample nati | pling: <u>17,09,83</u> | <u>_SURFACE</u> | ler : | Sam | ipling No : OUTLET S | <u> </u> |
| Producing Depth origi | <u>A – RESE</u> zoneB <u>RENT</u> n : <u>RKB</u> | RVOIR AND WELL Perforations | CHARACTER :_3177-3187 -5" VAM | RISTICS _ /M Samplin Casing | ig interval Dia : <u>9</u> | 5/8'' |
| Surface ele | vation <u>#60_m</u> Initial pressure Latest prassure m | Shoe : | at depat depat dep | Shoe | : date : date : | · |
| Time at which | ch sample was take | DREMENT AND SA | _ Time_elaps | sed since stabili | sation: | |
| Bottom hole dynamic conditions | Bottom hole pressu | /64"since:10:00 ure: | at depth: | | date : | |
| Flow measure Values used | ement of sampled g for calculations : F | $gas = Gravity(air 1):_{b} = 3718.2, F_g = 1$ PSIG Rates = Gas | .663 .2281, y = | Factor Fpv = 1.0015, Ftf | $\frac{1}{\sqrt{2}}$: = 0.9380 | 1.0575 |
| <u>Separator</u> | Temp : <u>131°C</u> | F Oil (separator o | ond 1: 42 | 8.5 ³ /D 50P | D B (sep | arator cond) |
| <u>Stock</u> <u>tank</u> | Atmosphere : Tank temperature : | mmHg | [•] F | Dil at 60 °F : | 370.8 MJ | |
| | | ۵::% | | uration :3 | 9 MIN | |
| Final condition | ons of the shipping t 63.7 BAR Temp | ottle : o:20°F | - | | | |
| | | Sent on : | | S | hipping or | der No : |
| Coupled with Bottom ho | le samples No _ | | | | GAS | |
| Surface se | Surface samples No A-14688 | | | | | |
| <u>Measuremen</u> A Tank | a_Correcto | B_ Meter . ed with shrinkage te | | | .Dump. h tank. | |
| ALL READING | <u>D _ REM</u> GS FROM 16:30 | ARKS _ | | | Visa | Chief Operator |

| FLOPETROL | Client :ST | ATOII. | Section: ANNEX 42 | | | | | |
|---|---------------------------------|---|---|--|--|--|--|--|
| Base : | Field :34 Well :34 | /10_ALPHA/10_16 | Page : 55 Report N°8 <u>3/2301/37</u> | | | | | |
| _SURFACE SAMPLING _ | | | | | | | | |
| Date of sampling : <u>17.09.83</u> Service order : Sampling No :11 Sample nature : <u>GAS</u> Sampling point : <u>GAS_OUTLET_SEPARATOR</u> | | | | | | | | |
| <u>A – RESERVOIR</u> Producing zone <u>BRENT</u> | | CHARACTERISTICS _ 3177-3187M Samp | ling interval : | | | | | |
| Depth origin : <u>RKB</u> Surface elevation <u>1:60 m</u> | | | | | | | | |
| Bottom holeInitial pressurestaticLatest pressureconditionsTemperature | d : | at depth: at depth: at depth: | date : | | | | | |
| <u>BMEASUREM</u> Time at which sample was taken : <u>1</u> 0 | ENT AND SA | MPLING CONDITIONS Time elapsed since stat | 5 hr | | | | | |
| gynamic Bottom hole pressure : | | | BARA temp : date : date : | | | | | |
| Flow measurement of sampled gas _ G Values used for calculations : | | | 12 | | | | | |
| Separator Pressure : <u>910</u> PSIG Temp : <u>1310C</u> F | Rates - Gas Oil (separator c | .2281, y = 1.0015, F : <u>1.649 MMSCM/30</u> ond): <u>428.5³/D</u> BC | CFD GOR: <u>3848</u> OPD B (separator cond.) | | | | | |
| <u>Stock</u> Atmosphere : <u>tank</u> Tank temperature : | mmHg | | - 370.8.M ³ /IBOPD ABCab | | | | | |
| BSW: | | Transfer duration: | 20 MTN | | | | | |
| Transfering fluid : VACUUM Final conditions of the shipping bottle : Pressure : | | | <u> </u> | | | | | |
| Pressure : <u>63.7 BAR</u> Temp : <u>2</u> <u>C IDENTIFICA</u> | ION OF THE | | | | | | | |
| Shipping bottle No : <u>A-14789</u> sen Addressee : | it on : | by: | Shipping order No : | | | | | |
| Coupled with | LIQUID | | GAS | | | | | |
| Bottom hole samples No | Bottom hole samples No | | | | | | | |
| Surface samples No A-14789 | | | | | | | | |
| Measurement conditions, A_ Tank _ B_ Meter . C_ Dump . a_ Corrected with shrinkage tester. b_ Corrected with tank . | | | | | | | | |
| D _ REMARKS _ Visa Chief Operator | | | | | | | | |
| ALL READINGS FROM 16:30 | | | | | | | | |
| | | | | | | | | |

No DOP 127

| FLO | PETROL | Client | STATOIL | | Section: ANNEX 42 |
|--------------------------------------|--|-------------------------------------|---|--|---|
| Base _{NWB} | | | :3 <u>4/10 ALPH4</u> :3 <u>4/10-16</u> | | Page : <u>56</u> Report N*8 <u>3/2301/37</u> |
| Date of sam | pling: 17.09.83 | _ Service | SAMPLINC | Sa | |
| | zo neBRENT | AND WE | | ERISTICS _ | |
| Depth origi Surface ele | n : <u>RKB</u> vation1:50 m | _ Tubing D _ Shoe | ia.: <u>5" VAM</u> : <u>3180.95</u> | Casing | g Dia : <u>9 5/8"</u> : |
| static | Initial pressure Latest prassure measured Temperature | d : | at de | epth: | date : date : date : |
| Time at whit | $\frac{B - MEASUREM}{16}$ | | | | |
| Bottom hole dynamic conditions | Choke size :80764" sir Bottom hole pressure : Bottom hole temp : | | at depth: . | | |
| Flow measured Values used | rement of sampled gas $_$ Gr for calculations : $F_L = 371$ | | | | |
| <u>Separator</u> | F _b = 371 Pressure : <u>910</u> PSIG <u>F</u> Temp : <u>131°C</u> F | <u>lates</u> _ Gas Dil (separati | s : <u>1.</u> or cond): <u>4</u> | 649 MMSCM/90CF 28.5 ³ /D BOF | D GOR: <u>3848</u> 2D B (separator cond.) C |
| <u>Stock</u> <u>tank</u> | Atmosphere : Tank temperature : | | | | 370.8 M ³ /IBOPD ABCab |
| | م WLR: | | | duration : | 39 MIN |
| Final condition | ons of the shipping bottle:_ 41.0 BARTemp:20 | | VOL SAM | OF BOTTLE 7 | 00cc 50 cc Hg left in bottle |
| | C_IDENTIFICAT ttie No: <u>83021209</u> sent | | | | Shipping order No : |
| <u>Coupled with</u> Bottom ho | nie samples No | LIQUID | | | GAS |
| <u>Surface sa</u> | amples No | | | | 14789 14688 |
| <u>Measuremen</u> A Tank . | a_Corrected with | B_ Mete shrinkage | | | _ Dump _ h tank _ |
| ALL READING | <u>D _ REMARKS _</u> S FROM 16:30 | | | | Visa Chief Operator |
| والمراجع والمراجع والمراجع والمراجع | | | ahu- u | | 1 |



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