

LOBITOS COSTA AFUERA

LO16-11

GRADIENTE DE PRESION INICIAL

NOV. 29, 90



## SUBSURFACE PRESSURE MEASUREMENTS

|                         |                              |                                                                                 |                                                                                         |
|-------------------------|------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| COMPANY                 | PETROMAR S.A.                | WELL NAME                                                                       | LOBITOS COSTA AFUERA                                                                    |
| ADDRESS                 | NEGRITOS                     | LOCATION                                                                        | LO16-11                                                                                 |
| FIELD and POOL          | LOBITOS                      | STATUS: OIL <input type="checkbox"/> GAS <input type="checkbox"/> OTHER SPECIFY |                                                                                         |
| TYPE OF TEST            | GRADIENTE DE PRESION INICIAL | DATE OF TEST                                                                    | 90/11/29 TO                                                                             |
| PRODUCING INTERVAL (CF) | 7750-7800                    | PRODUCING THROUGH                                                               | IN. TUBING <input type="checkbox"/> IN. CASING <input type="checkbox"/>                 |
| ELEVATION (CF)          | FT. (KB)                     | MID-POINT OF PRODUCING (MPP) INTERVAL (CF)                                      | FT.                                                                                     |
| POOL DATUM              | FT. (subsea)                 | DATUM DEPTH OF WELL (FROM CF)                                                   | FT.                                                                                     |
| ELEMENT SERIAL NO.      | 9758N                        | CLOCK RANGE                                                                     | 03 h S <input checked="" type="checkbox"/> D <input type="checkbox"/> 2359 I.H. # 14358 |
| CALIBRATION EQUATION    | PC = 2654.16 x D + (6.11)    | DATE OF LAST CALIBRATION                                                        | 90/08/25                                                                                |

## 2. STATIC TEST

|                          |                                                                  |                        |            |           |
|--------------------------|------------------------------------------------------------------|------------------------|------------|-----------|
| PRESSURE (GAUGE): TUBING | PSI. GAUGE <input type="checkbox"/> DWG <input type="checkbox"/> | SHUT-IN DATE           | @          | h         |
| CASING                   | PSI. GAUGE <input type="checkbox"/> DWG <input type="checkbox"/> | DATE ON BOTTOM         | 90/11/29 @ | 15:32 h   |
| RUN DEPTH (FROM CF)      | 7775 (7404.12 TVD.)                                              | DATE OFF BOTTOM        | 90/11/29 @ | 16:32 PSI |
| B.H. TEMP                | 124 °F.                                                          | MPP PRESSURE (GAUGE)   | 3491.02    | PSI       |
| R.D. PRESSURE (GAUGE)    | 3491.02                                                          | DATUM PRESSURE (GAUGE) |            | PSI       |
| PSI. GRADIENT            | 0.4714                                                           |                        |            |           |

## 3. ACOUSTIC WELL SOUNDER TEST

|                             |         |                                |   |     |
|-----------------------------|---------|--------------------------------|---|-----|
| DEPTH OF TUBING             | FT.     | SHUT-IN DATE                   | @ | h   |
| AVERAGE TUBING JOINT LENGTH | FT.     | CURRENT WATER CUT              |   | %   |
| NO. OF JOINTS TO LIQUID     |         | CASING PRESSURE (GAUGE)        |   | PSI |
| LENGTH OF GAS COLUMN        | FT.     | GAS COLUMN PRESSURE (GAUGE)    |   | PSI |
| LENGTH OF LIQUID COLUMN     | FT.     | LIQUID COLUMN PRESSURE (GAUGE) |   | PSI |
| GAS GRAVITY                 |         | MPP PRESSURE (GAUGE)           |   | PSI |
| GAS GRADIENT                | PSI/FT. | DATUM DEPTH PRESSURE (GAUGE)   |   | PSI |
| OIL GRAVITY                 |         |                                |   |     |
| OIL GRADIENT                | PSI/FT. |                                |   |     |

## 4. BUILD UP OR DRAWDOWN TEST (Attach Forms 0-12A)

|                                     |                                                            |                                                 |       |                    |       |                  |          |
|-------------------------------------|------------------------------------------------------------|-------------------------------------------------|-------|--------------------|-------|------------------|----------|
| RESERVOIR/WELL PARAMETERS: POROSITY | %                                                          | WELL RADIUS                                     | FT.   | THICKNESS          | FT.   | WATER SATURATION | %        |
| B.H. TEMP.                          | °F                                                         | DATE AND DESCRIPTION OF LAST WELLBORE TREATMENT |       |                    |       |                  |          |
| CASING I.D.                         | IN.                                                        | TUBING I.D.                                     | IN.   | TUBING WEIGHT/MASS |       |                  | LBS./FT. |
| COMPRESSIBILITY                     | μZ                                                         |                                                 |       |                    |       |                  |          |
| OIL VISCOSITY                       | CC                                                         | GAS VISCOSITY                                   | μZ    |                    |       |                  |          |
| BUBBLE POINT PRESSURE (GAUGE)       | PSI                                                        | Z at RESERVOIR CONDITIONS                       |       |                    |       |                  |          |
| B <sub>0</sub> = VOL. AT RES. COND. |                                                            | RELATIVE DENSITY G                              |       |                    |       |                  |          |
| WELL PRODUCING RATE DURING          | <input type="checkbox"/> PRIOR TO <input type="checkbox"/> | TEST OIL                                        | BBL/D | GAS                | MCF/D | WATER            | BBL/D    |
| TOTAL PRODUCTION - DURING           | <input type="checkbox"/> PRIOR TO <input type="checkbox"/> | TEST OIL                                        | BBL.S | GAS                | MCF   | WATER            | BBL      |

## 5. CHART READINGS AND CALCULATIONS

| DATE |    |     | DEPTH BELOW<br>CF FT. | ACC. TIME<br>h | TIME<br>h | DEFLECTION<br>IN | CALCULATED<br>PRESSURE<br>PSIG | CORRECTION<br>DEVIATION<br>PSI | CORRECTED<br>PRESSURE<br>PSIG | GRADIENT<br>PSI/FT. |
|------|----|-----|-----------------------|----------------|-----------|------------------|--------------------------------|--------------------------------|-------------------------------|---------------------|
| YR   | MO | DAY |                       |                |           |                  |                                |                                |                               |                     |
| 90   | 11 | 29  | Superficie            | Superficie     | 14:00     | 0.0175           | 52.55                          |                                |                               | -                   |
|      |    |     | 484.46                | 500            | 14:06     | 0.0780           | 213.13                         |                                |                               | 0.3314              |
|      |    |     | 970.03                | 1000           | 14:12     | 0.1510           | 406.88                         |                                |                               | 0.3990              |
|      |    |     | 1457.51               | 1500           | 14:18     | 0.2230           | 597.98                         |                                |                               | 0.3920              |
|      |    |     | 1946.11               | 2000           | 14:24     | 0.2980           | 797.04                         |                                |                               | 0.4074              |
|      |    |     | 2428.37               | 2500           | 14:30     | 0.3750           | 1001.42                        |                                |                               | 0.4237              |
|      |    |     | 2901.39               | 3000           | 14:36     | 0.4598           | 1226.49                        |                                |                               | 0.4758              |
|      |    |     | 3369.37               | 3500           | 14:42     | 0.5475           | 1459.26                        |                                |                               | 0.4973              |
|      |    |     | 3848.10               | 4000           | 14:49     | 0.6513           | 1734.76                        |                                |                               | 0.5754              |
| 90   | 11 | 29  | 4325.95               | 4500           | 14:56     | 0.7570           | 2015.30                        |                                |                               | 0.5770              |

## REMARKS

Perf: 7380.20' - 7428.05' T.V.D. PTO. MEDIO: 7404.12' T.V.D.

SURVEY COMPANY TEST BY G. PRECIADO COMPUTED BY CHECKED BY

## SUBSURFACE PRESSURE MEASUREMENTS

COMPANY PETROMAR S.A.

WELL NAME LOBITOS COSTA AFUERA

DATE OF TEST 90 11 29 TO           
YR MO DAY YR. MO. DAY

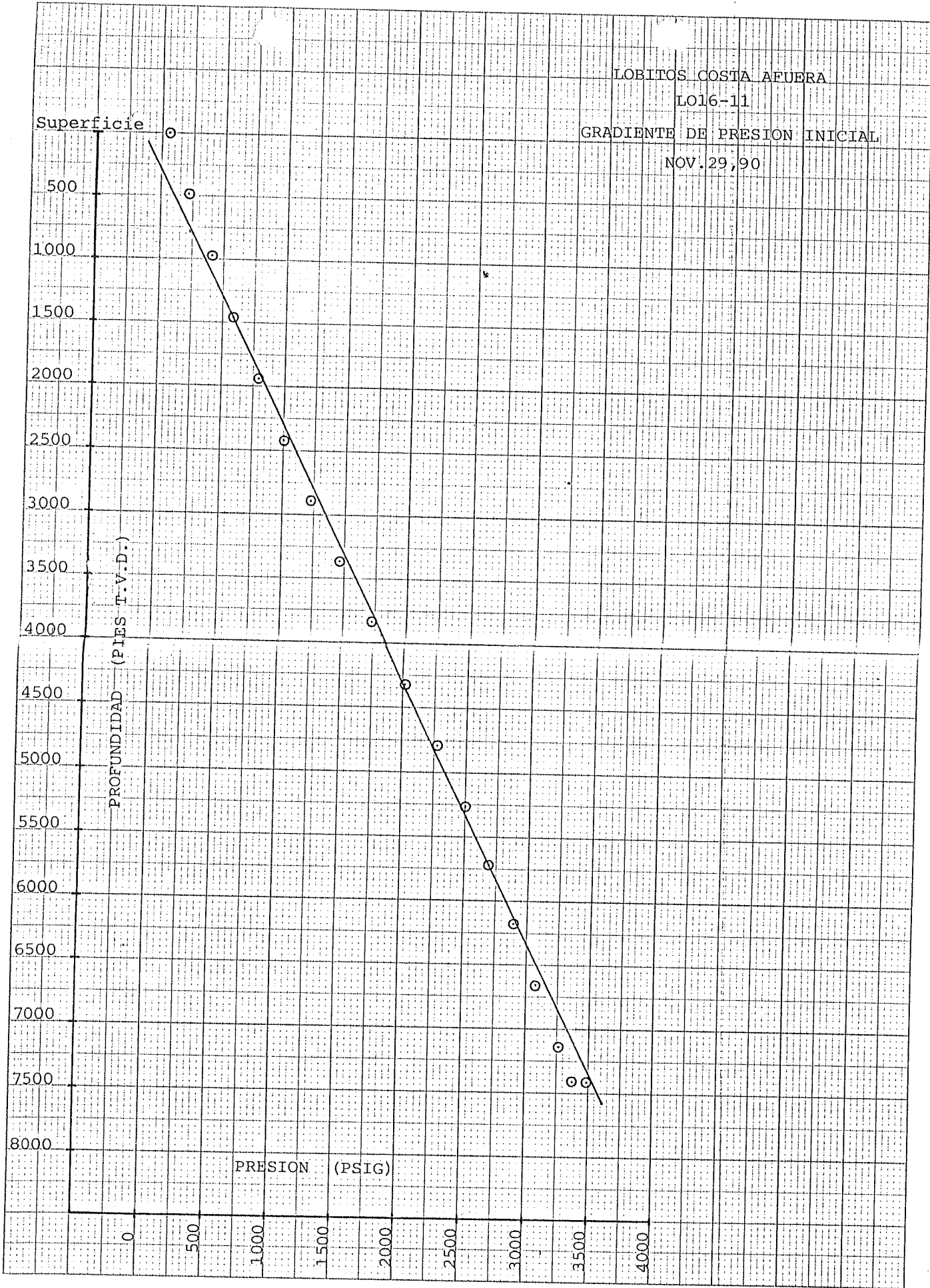
LOCATION L016-11

### CHART READINGS AND CALCULATIONS

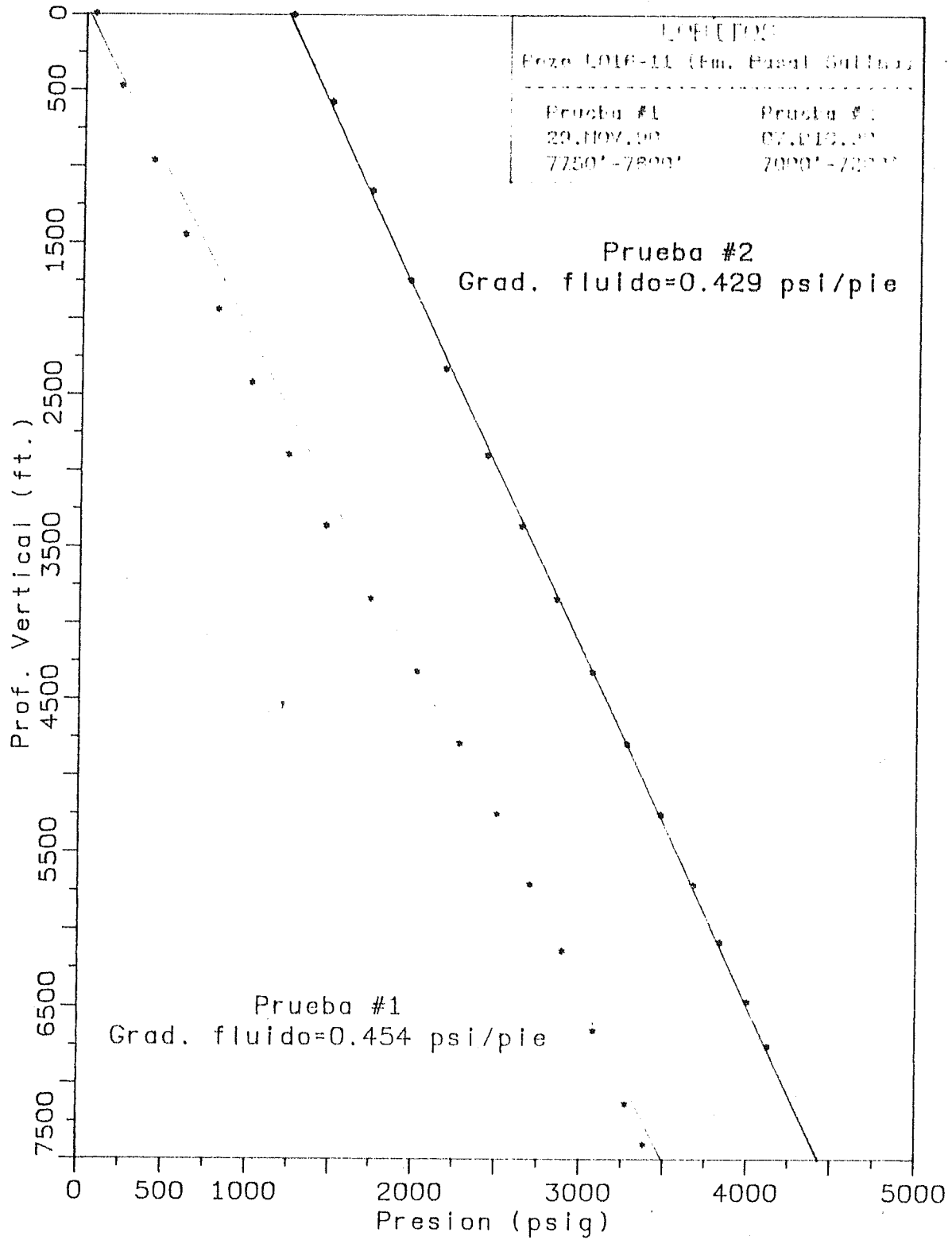
PAGE 02 of 02

[illegible]

LOBITOS COSTA AFUERA  
LO16-11  
GRADIENTE DE PRESION INICIAL  
NOV. 29, 90



# PRUEBA DE PRESION INICIAL



**PETROMAR****MEMORANDO****RECIBIDO**No. PM.RSRV.107.90

|                                          |                                                                 |
|------------------------------------------|-----------------------------------------------------------------|
| <b>A:</b><br><br>GERENCIA DE RESERVORIOS | <b>Lugar y Fecha</b><br><br>S.I., 20 de Diciembre de 1990       |
| <b>De:</b><br><br>MARTIN POLACK B.       | <b>Asunto</b><br><br>PRUEBAS DE PRESION INICIAL<br>POZO LO16-11 |

A continuación encontrará el análisis de las pruebas de presión inicial tomadas en el pozo de la referencia, los días 29 de Noviembre y 7 de Diciembre, ambas por Basal Salina. Cada prueba fue tomada inmediatamente después de balearse el intervalo indicado. La segunda prueba se realizó luego de aislar el primer intervalo perforado.

|                          | Prueba 1                               | Prueba 2                                |
|--------------------------|----------------------------------------|-----------------------------------------|
| Fecha de la Prueba:      | 29.11.90                               | 07.12.90                                |
| Formación:               | Basal Salina                           | Basal Salina                            |
| Intervalo Perforado:     | 7750'-7800' (P.M)<br>7380'-7428' (P.V) | 7000'-7200' (P.M.)<br>6662'-6854' (P.V) |
| Profundidad de la Bomba: | 7775' (P.M)<br>7404' (P.V)             | 7109' (P.M)<br>6758' (P.V)              |
| Presión al P.M.P.:       | 3,491 psig                             | 4123 psig                               |
| Presión en la cabeza:    | 900 psig                               | 1233 psig                               |
| Nivel de fluidos:        | Superficie                             | Superficie                              |
| Gradiente de formación:  | 0.4715                                 | 0.6100                                  |
| Gradiente de fluidos:    | 0.454                                  | 0.429                                   |

En el caso de la prueba No. 1, la bomba se mantuvo en el fondo una hora, lapso en el cual la presión subió 113 psi, indicando que el pozo no se estabilizó; igualmente, para la Prueba No. 2, el registrador estuvo en el fondo 45 minutos, aumentando la presión en 124 psi.

El segundo intervalo probado (7000' á 7200') mostró una producción inicial de 288 BP/D x 124 BA/D, declinando a 34 BP/D x 1 BA/D en tan sólo tres días; este intervalo no fue fracturado.

Atentamente,

*Martin Polack B.*  
Ing. Martín Polack B.

Adj.

cc.: Supt. de Ingeniería de Petróleo  
Supt. de Producción  
RES.2201.105  
Archivo del Pozo

smg