
Teleco Oilfield Services Inc.

17 May 1988

D I R E C T I O N A L S U R V E Y L I S T I N G

Company: AGIP SpA

Well: CLARA W 10 DIR

Field: CLARA OVEST

Job No: TIY 077

Survey Calculation Method: Minimum Curvature

Vert Sect Calculation Method: Overall

Proposal Azimuth:	105.00
Total Azimuth Correction:	-.50
Proposal Origin North:	0.00
Proposal Origin East:	0.00



DIRECTIONAL SURVEY LISTING

Company: AGIP SpA
Well: CLARA W 10 DIR

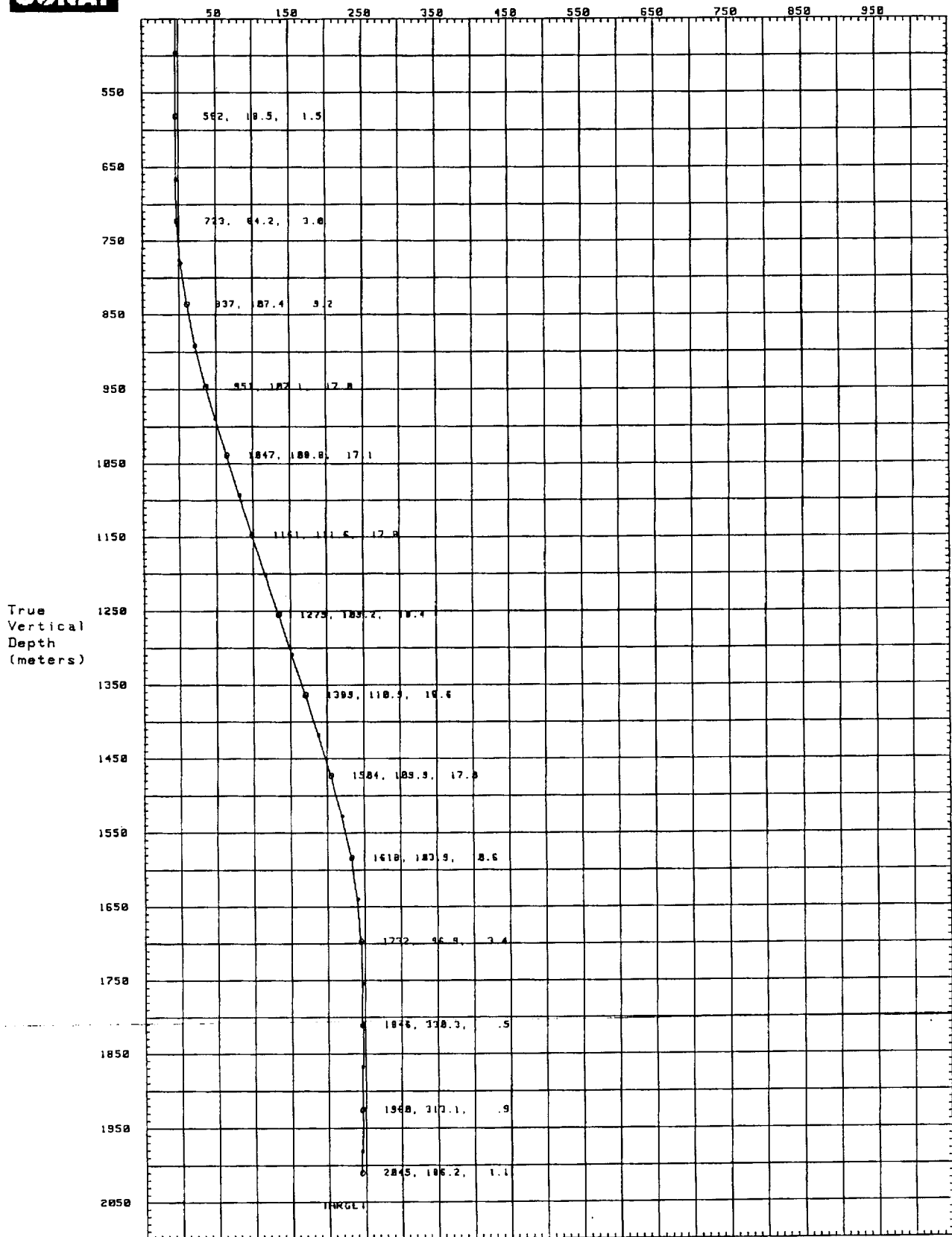
Page: 1

M.DEPTH Meters	Inc Deg	Azt Deg	North Meters	East Meters	Tvd Meters	DLS Deg/30m	VS Meters
TIE-ON COORDINATES							
286.00	1.50	4.00	6.19	-.42	285.92	0.00	-2.01
326.00	1.20	354.60	7.13	-.42	325.91	.28	-2.25
411.00	1.00	352.80	8.75	-.60	410.89	.07	-2.84
496.00	1.10	355.30	10.30	-.76	495.88	.04	-3.40
582.00	1.50	18.50	12.19	-.47	581.86	.23	-3.61
667.00	1.80	23.80	14.47	.42	666.82	.12	-3.34
723.00	3.00	64.20	15.91	2.10	722.78	1.09	-2.09
781.00	8.00	113.10	14.99	7.18	780.51	3.38	3.06
837.00	9.20	107.40	12.12	15.04	835.88	.80	11.39
894.00	12.60	107.80	8.85	25.31	891.85	1.82	22.15
951.00	17.00	107.10	4.50	39.20	946.94	2.35	36.70
995.00	17.10	108.10	.60	51.49	989.01	.21	49.58
1047.00	17.10	108.80	-4.24	66.00	1038.71	.12	64.85
1104.00	17.50	109.50	-9.80	82.01	1093.13	.24	81.75
1161.00	17.80	111.60	-15.87	98.19	1147.45	.38	98.95
1218.00	18.80	109.20	-22.10	114.96	1201.57	.67	116.77
1275.00	18.40	109.20	-28.08	132.13	1255.59	.21	134.90
1332.00	18.30	109.50	-34.02	149.07	1309.69	.07	152.79
1389.00	18.60	110.90	-40.25	165.99	1363.76	.29	170.75
1446.00	17.40	111.30	-46.59	182.43	1417.97	.65	188.27
1504.00	17.00	109.90	-52.63	198.48	1473.38	.30	205.34
1561.00	14.20	107.40	-57.55	212.99	1528.27	1.54	220.63
1618.00	10.60	103.90	-60.91	224.75	1583.93	1.97	232.86
1675.00	5.60	89.50	-62.14	232.63	1640.35	2.87	240.79
1732.00	3.40	96.90	-62.32	237.09	1697.17	1.21	245.14
1789.00	.80	35.00	-62.20	238.99	1754.14	1.66	246.95
1846.00	.50	330.30	-61.66	239.10	1811.13	.40	246.91
1903.00	.60	319.40	-61.21	238.78	1868.13	.08	246.49
1960.00	.90	313.10	-60.68	238.26	1925.12	.17	245.85
2016.00	1.00	328.90	-59.96	237.69	1981.12	.15	245.11
2045.00	1.10	186.20	-60.02	237.53	2010.12	2.09	244.97





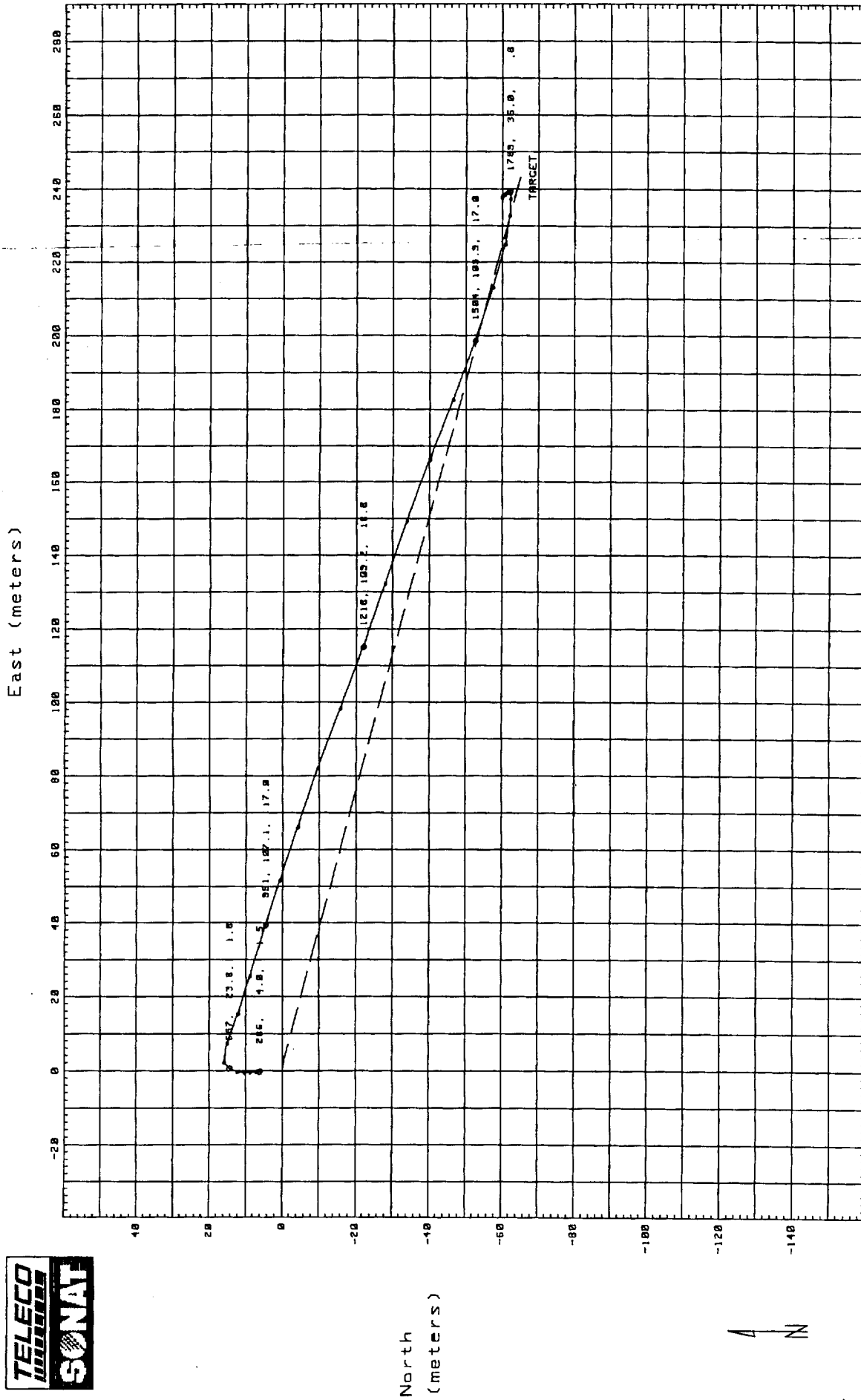
Horizontal Distance (meters)



VERTICAL SECTION

Date: 17 May 1988
Company: AGIP SpA
Well: CLARA W 10 DIR

Labeled Surveys: M.Depth Azimuth Inclination
V.S. Calc. Method: Overall
Scale: 1cm= 50(meters)



Scale: 1cm= 10(meters)

Labeled Surveys: M.Depth Azimuth Inclination

PLAN VIEW

Company: AGIP SpA

Well: CLARA W 10 DIR

Date: 17 May 1988

N

North
(meters)



TELECO INC., RAVENNA, ITALY

PERFORMANCE REPORT

Teleco MWD Services were used in the 12 $\frac{1}{4}$ " and 8 $\frac{1}{2}$ " hole sections with directional only in the 12 $\frac{1}{4}$ " and directional/resistivity in the 8 $\frac{1}{2}$ " hole section.

12 $\frac{1}{4}$ " Hole Section (300m - 1013m)

This section was completed in one run using a steerable mud motor system and Teleco to kick off the well. Tool B 884-14 was used and gave no problems.

8 $\frac{1}{2}$ " Hole Section (1013m - 2063m)

Tool DHE 1592-7 was used throughout this hole section with no problems. A good resistivity log was obtained. Towards the end of run no. 3 the hookload started giving problems and an average value for weight on bit was used on the log.

Well T.D. was reached before the hookload problem was cured. In the past problems with the hookload have been associated with the DAQ and the same problem may have occurred on this job too.

To knock the well back down to vertical there was quite a bit of orientation. So to obtain a resistivity log each oriented section had to be reamed. Where they reamed too quickly data density was less than elsewhere although log quality was still good generally.



TELECO INC., RAVENNA, ITALY

MAINTENANCE REPORT

EQUIPMENT DESCRIPTION: TR400-210

OPERATIONAL PROBLEM: Fuses F3-F5 constantly blowing due to bad power supply

FAULT FOUND: -

COMMENTS: Turned s.g. off whenever drew works were used to save on fuses

—oOo—

EQUIPMENT DESCRIPTION: 8½" D-MTF 884-14

OPERATIONAL PROBLEM: None - operated to Teleco specifications

FAULT FOUND: -

COMMENTS: Completed the 12¼" section with no problems

—oOo—

EQUIPMENT DESCRIPTION: 8½" D-MTF 866-21

OPERATIONAL PROBLEM: None - not used

FAULT FOUND: -

COMMENTS:

—oOo—



TELECO INC., RAVENNA, ITALY

MAINTENANCE REPORT

EQUIPMENT DESCRIPTION: 6 $\frac{1}{4}$ " RD-MTF
(Number 1592-7)

OPERATIONAL PROBLEM: None

FAULT FOUND: None

COMMENTS: Drilled to the end of the
8 $\frac{1}{2}$ " hole section

—oOo—

EQUIPMENT DESCRIPTION: 6 $\frac{1}{4}$ " RD-MTF
(Number 1543-6)

OPERATIONAL PROBLEM: None - not used

FAULT FOUND: -

COMMENTS: -

—oOo—

EQUIPMENT DESCRIPTION: TR 2300-015 Surface Gear

OPERATIONAL PROBLEM: Hookload down at end of run 3

FAULT FOUND: Possible fault with hookload counter
board in DAQ

COMMENTS: Used an average valve for WOB which was
manually inputed on the log at intervals

—oOo—



TELECO INC., RAVENNA, ITALY.

ENGINEER DEPLOYMENT SUMMARY

<u>ENGINEER</u>	<u>DEPARTURE TIME/DATE</u>	<u>RETURN TIME/DATE</u>
JOHN WATTAM	08:00 11.05.88	17:00 18.05.88
MARK ROBSON	08:00 13.05.88	17:00 18.05.88



TELECO INC., RAVENNA, ITALY.

TOOL DEPLOYMENT SUMMARY

<u>TOOL NO:</u>	<u>O.D.</u>	<u>SERVICE TYPE</u>	<u>TOTAL CIRC. HOURS</u>
884-14	8 $\frac{1}{4}$ "	DIR	29.0
866-21	8 $\frac{1}{4}$ "	DIR	0.0 (Back-up)
1592-7	6 $\frac{3}{4}$ "	RES/DIR	52.5
1543-6	6 $\frac{3}{4}$ "	RES/DIR	0.0 NOT USED (Back-up)



TELECO INC., RAVENNA, ITALY.

RESISTIVITY/GAMMA SERVICE REPORT

The Teleco Resistivity/Gamma MWD Service was utilized on this occasion for the following purposes:

LITHOLOGY IDENTIFICATION

CASING SEAT DETECTION

REAL TIME CORRELATION

RESERVOIR DETECTION

RESERVOIR THICKNESS DETERMINATION

RESERVOIR PAY ZONE THICKNESS DETERMINATION

RESERVOIR FLUID DETERMINATION



TELECO INC., RAVENNA, ITALY

BHA RECORD LISTING

TELECO RUN NUMBER	1	2	3		
BIT TYPE	STC FDS	STC FDS	HTC J1		
HOLE SIZE	12¼"	8½"	8½"		
JETS/TFA	3 x 18	3 x 15	3 x 14		
DEPTH START	300	1013	1293		
DEPTH END	1013	1293	2062		
MIN/MAX/WOB	4 - 9	6-10	6-10		
MIN/MAX/RPM	55-65	60-70	60-70		
ROTARY DRILLING HRS	23.5	13.5	21		
MONEL ABOVE DIR SENSOR	18.2	20.76	20.76		
MONEL BELOW DIR SENSOR	6.15	9.00	9.00		
PREDOMINANT FORMATION	CLAYSTONE	CLAYSTONE	CLAYSTONE SAND		



TELECO INC., RAVENNA, ITALY

MUD RECORD

DATE:	11.05.88	12.05.88	13.05.88	14.05.88	15.05.88
TIME:	00:00	00:00	00:00	00:00	00:00
DEPTH:	300m	411m	1013m	1013m	1200m
MW:	1.1160	1.200	1.200	1.20	1.23
PV:	14	25	12	12	15
YP:	5.5	8	7	7	5.5
GELS:	1.5 / 8	3 / 16	2.5 / 10	2.5 / 10	1.5 / 7.5
FILTRATE:	7	7	6.6	6.6	5.8
CHLORIDES:	6.8	8.5	6.8	6.8	7.6
pH:	10.5	10.5	10.0	10.0	10.5
SOLIDS:	12	15	15	15	16
SAND:	1	0.8	0.5	0.5	0.3
OIL:	-	-	-	-	-
WATER:	88	85	85	85	84
TYPE					



TELECO INC., RAVENNA, ITALY

MUD RECORD

DATE:	16.05.88				
TIME:	00:00				
DEPTH:	1541				
MW:	1.35				
PV:	14				
YP:	8.5				
GELS:	3/12				
FILTRATE:	4.3				
CHLORIDES:	5.8				
pH:	9.0				
SOLIDS:	19				
SAND:	0.3				
OIL:	-				
WATER:	81				
TYPE					



TELECO INC., RAVENNA, ITALY

MWD LOG REPORT

Introduction

MWD Formation Evaluation Services began below the 9 $\frac{1}{2}$ " casing shoe and ended at 2063m BDF.

A 16" short normal resistivity device was used, readings having been corrected for downhole mud resistivity (Rm), collar and borehole sizes.

A complete resistivity log was produced, corrections being very slight due to the fresh water mud system. Response of resistivity allowed good correlation with offset data of sands containing hydrocarbons (dominantly methane gas).

Runs 2 and 3 (1013m to 2063m)

Run 2 showed dominantly a shale/claystone trend of relatively consistent resistivity. Slight decrease over the run was due to the resistivity following a normally pressured shale trend line.

Run 3 showed similar trends in the shale/claystone but with frequent deflections in sand stringers. These stringers showed good relation on depth to gas peaks - those over 1 % being annotated on the log (Valves courtesy of Exlog).

Towards the end of the run, expected T.D. of 2000m was extended due to the absence of an expected sand and the resistivity showed no such sand nor did the gas rise significantly. At 2063 metres bottoms up was circulated as orders were awaited regarding further continuation as a previous well had taken an H₂S kick below the missing sand. On examination of the resistivity log and formation/gas data, it was decided to stop drilling.

As shown on the log, a failure of the hookload sensor was experienced and average WOB was manually input at frequent intervals.

A G I P

GEOL/SNOR

CLARA W 10 DIR

RELAZIONE FINALE

RAVENNA: LUGLIO 1990

REDATTORE

R E L A Z I O N E F I N A L E

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- 1.02 PAESE
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- 1.04 COMUNE E PROVINCIA
- 1.05 PERMESSO / CONCESSIONE
- 1.06 TITOLARI DEL PERMESSO / CONCESSIONE
- 1.07 UBICAZIONE
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- 1.09 QUOTE (riferite al livello del mare)
- 1.10 OBIETTIVO DEL POZZO
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- 1.12 CLASSIFICAZIONE FINALE
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- 1.14 ESITO MINERARIO
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 - CAROTE DI PARETE
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- 2.03 TEMPERATURE DAI LOGS
- 2.04 FORMAZIONI - ETA'
- 2.05 DESCRIZIONE LITOLOGICA DELLE FORMAZIONI
- 2.06 RISULTATI GEOLOGICI

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- 3.02 MINERALIZZAZIONI
- 3.03 STIMOLAZIONI
- 3.04 PROVE DI STRATO
- 3.05 PROVE DI PRODUZIONE
- 3.06 BOLLETTINI ANALISI FLUIDI
- 3.07 WIRELINE FORMATION TESTS
- 3.08 RISULTATI MINERARI

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- 4.04 PROFONDITA' FINALE POZZO (da perforazione)
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- 4.20 SQUEEZING
- 4.21 BRIDGE PLUG
- 4.22 PROBLEMI TECNICI IN POZZO
- 4.23 PERDITE ED ASSORBIMENTI

NOTE: -le profondita' sono in metri e riferite al p.t.r.
-le pressioni sono espresse in Kg/cm²
-le temperature sono espresse in gradi C.
-i tempi sono espressi in ore e minuti
-le densita' del fango sono espresse in gr/l
-i cloruri sono espressi in gr/l (NaCl)
-le inclinazioni del foro in gradi sessagesimali e
le frazioni di grado in centesimi di grado

FIGURE NEL TESTO

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- 1- CARTA INDICE
- 2- SITUAZIONE POZZO
- 3- DEVIAZIONE DEL POZZO (da DATADRIL)
- 4- MAPPA TOP PLQ-J1

ALLEGATI

=====

- 1- PROFILO 1:1000
- 2- MASTER LOG
- 3- STRATIGRAFIA DESUNTA DA CORRELAZIONI ELETTRICHE (Vedi Allegato 1)
- 4- STRATIGRAPHIC HIGH-RESOLUTION DIPMETER m 1012-2057
- 5- ISF-SLS-GR-SP m 1010,5-2061
- 6- LDL-CNL-EATT m 1500-2062
- 7- RFT m 1577-2028
- 8- CBL-VDL-CNL-CCL m 1175-2028
- 9- Interpretazione logs (CPI-SCHLUMBERGER Maggio 88)

PARTE I --- DATI GENERALI ED UBICAZIONE

1.01 POZZO

=====

Codice : 05616
Nome : CLARA W 10 DIR
Sigla : B.C14.AS/10

1.02 PAESE

=====

Codice : 101
Nome : ITALIA

1.03 MARE

=====

ADRIATICO

1.05 PERMESSO / CONCESSIONE

=====

B.C14.AS

1.06 TITOLARE DEL PERMESSO / CONCESSIONE

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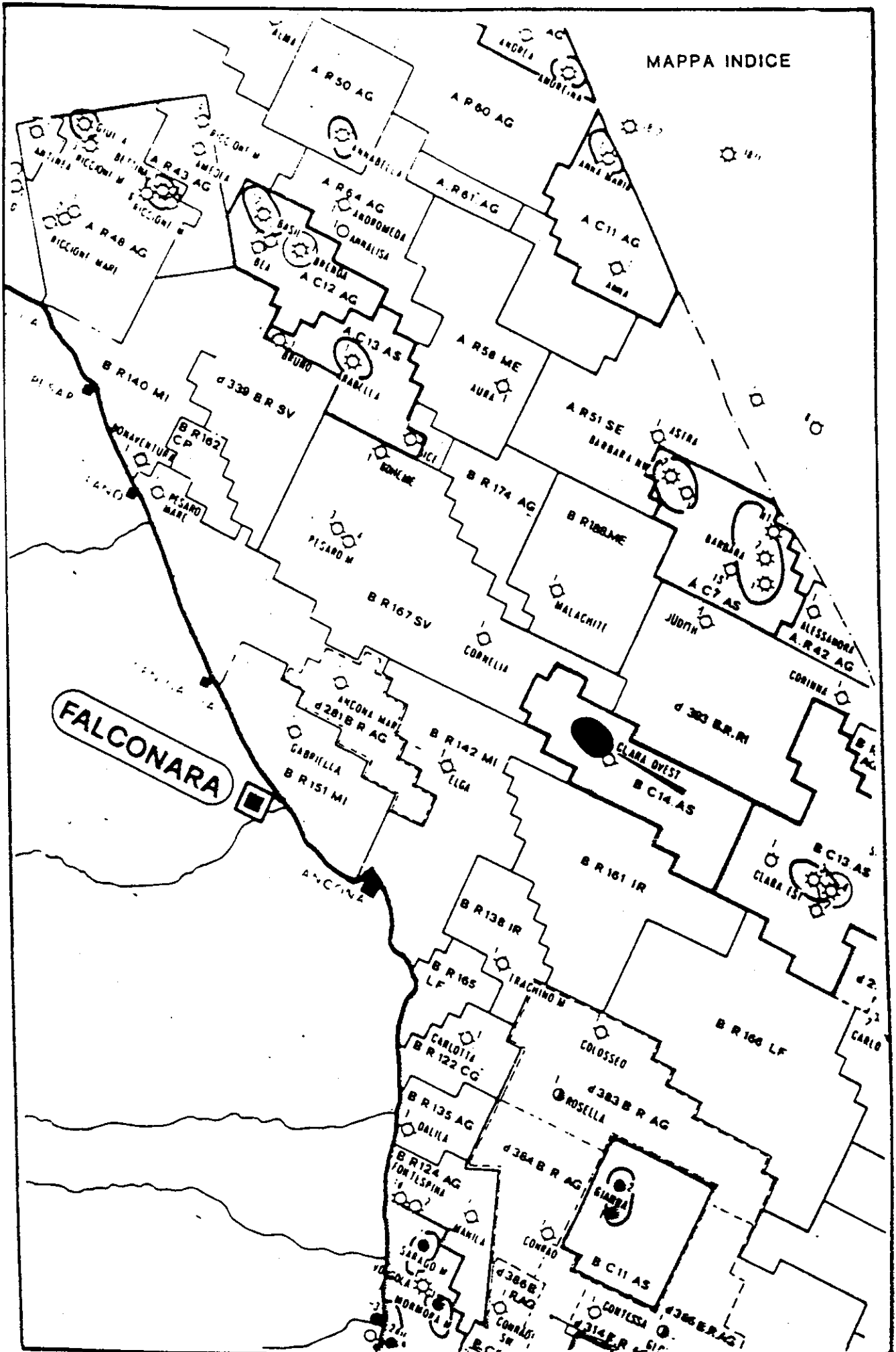
AGIP DEUTSCHE SHELL		(Titolare)
AGIP	51.000 %	(Operatore)
DEUTSCHE SHELL	49.000 %	(Partner)

1.07 UBICAZIONE

=====

Carta : NAUTICA
Foglio : 923
Linea Sismica :
S.P. :
Coordinate
Geogr. Long : E 013°42'42".0 Lat. : N 43°49'40".9. GREENWICH

Fig. 1



1.08 COORDINATE FONDO POZZO

Geogr. Long :E 013°42'52".6 Lat.:N 43°49'39".0. GREENWICH
 Geogr. Long :E 001°15'44".2 Lat.:N 43°49'40".9. MONTE MARIO

1.09 QUOTE (riferite al livello del mare)

Fondo Marino : -72.0
 Tavola Rotary : 28.0
 Prima Flangia : 13.4

1.10 OBIETTIVO DEL POZZO

Il giacimento di Clara Ovest, ubicato nell'off-shore Adriatico a circa Km.28 a NE di Ancona, e' caratterizzato da una struttura anticlinalica, con asse WNW - ESE, suddivisa trasversalmente in diversi blocchi separati da faglie dirette. Il campo presenta la mineralizzazione a gas metano distribuita su una serie di livelli sabbiosi della formazione Porto Garibaldi (Pliocene medio - superiore) e della formazione argille del Santerno (Pliocene Superiore - Pleistocene).
 L'ipotesi di sviluppo di Clara Ovest prevedeva la perforazione di 6 pozzi, successivamente e' stato ritenuto opportuno perforare un ulteriore pozzo di coltivazione (Clara Ovest 10 dir) per esplorare il blocco "E" e accertare se anche in questo blocco sono mineralizzati a gas gli stessi livelli gia' rinvenuti a gas nei blocchi "A"- "B"- "C"- "D".

1.11 CLASSIFICAZIONE INIZIALE

OUTPOST O EXTENSION TEST

1.12 CLASSIFICAZIONE FINALE

EXTENSION WELL

1.13 PROFONDITA' FINALE (da perforazione)

2063.0 (v. 2028.0)

1.14 ESITO MINERARIO

GAS

1.15 SITUAZIONE ATTUALE
=====

COMPLETATO

1.16 GIACIMENTO
=====

CLARA OVEST

1.17 INIZIO PRODUZIONE
=====

02/03/89

1.18 INTERVALLO IN PRODUZIONE
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1816-1830 1638-1650

PARTE II ---- DATI GEOLOGICI

2.01 CAMPIONATURA IN FORMAZIONE

CUTTINGS

Nr.Fr.	Top	Bottom	Freq.Camp.	Tipo
1	120.0	2063.0	10.0	Lavati

CAROTE DI FONDO

Nessuna

CAROTE DI PARETE

Nessuna

2.02 OPERAZIONI DI WELL LOGGING

Fr.	Nr.	D.	Codice	Run	Top	Bottom	Data	Contrattista
1	1	1	MWDR	1	1013.0	2047.0	14/05/88	TELECO
1	2	1	GR	1	1010.5	2045.0	17/05/88	SCHLUMBERGER
1	2	1	ISF	1	1010.5	2062.0	17/05/88	SCHLUMBERGER
1	2	1	SLS	1	1010.5	2052.0	17/05/88	SCHLUMBERGER
1	2	1	SP	1	1010.5	2063.0	17/05/88	SCHLUMBERGER
1	2	2	SHDT	1	1010.5	2058.0	17/05/88	SCHLUMBERGER
1	2	3	CNL	1	1495.0	2057.0	18/05/88	SCHLUMBERGER
1	2	3	EATT	1	1495.0	2049.5	18/05/88	SCHLUMBERGER
1	2	3	GR	2	1495.0	2042.0	18/05/88	SCHLUMBERGER
1	2	3	LDL	1	1495.0	2062.0	18/05/88	SCHLUMBERGER
1	2	4	CBLVDL	1	366.0	1007.0	18/05/88	SCHLUMBERGER
1	2	5	RFT	1	1583.0	2028.0	18/05/88	SCHLUMBERGER
1	3	1	CBLVDL	2	1170.0	1975.0	22/05/88	SCHLUMBERGER
1	3	1	CNLCCL	1	1500.0	1970.0	22/05/88	SCHLUMBERGER

2.03 TEMPERATURE DAI LOGS

Fr.	Nr.	D.	Prof.Mis.	Prof.V.	T.Misur.	t.	Dt.	T.Calc.
1	2	1	2050.0	2015.1	51.0	2.00	6.44	54.0
1	2	1	2050.0	2015.1	51.0	2.00	6.44	54.0
1	2	1	2050.0	2015.1	51.0	2.00	6.44	54.0
1	2	1	2050.0	2015.1	51.0	2.00	6.44	54.0
1	2	2	2050.0	2015.1	52.0	2.00	11.16	54.0
1	2	3	2050.0	2015.1	52.5	2.00	13.59	54.0
1	2	3	2050.0	2015.1	52.5	2.00	13.59	54.0
1	2	3	2050.0	2015.1	52.5	2.00	13.59	54.0
1	2	3	2050.0	2015.1	52.5	2.00	13.59	54.0

2.04 FORMAZIONI - ETA'

INTERVALLO	-1- FORMAZIONE	-2- ETA'
1010.5		
	-1-ARGILLE DEL SANTERNO	
	-2-PLEISTOCENE	
1517.0		
	-1-ARGILLE DEL SANTERNO	
	-2-PLIOCENE	SUPERIORE
1589.5		
	-1-PORTO GARIBALDI	
	-2-PLIOCENE	SUPERIORE
2063.0		

2.05 DESCRIZIONE LITOLOGICA DELLE FORMAZIONI

Intervallo : 1010.5 - 1589.5
 Formazione : ARGILLE DEL SANTERNO
 Descrizione :
 Argille ed argille siltose grigie, con qualche livello di sabbia a grana da fine a finissima.

Intervallo : 1589.5 - 2063.0
 Formazione : PORTO GARIBALDI
 Descrizione :
 Sabbia a grana medio-fine e finissima con intercalazioni di argille e argille siltose-sabbiose grigie.

2.06 RISULTATI GEOLOGICI

Il giacimento di Clara Ovest e' costituito da una struttura anticlinale, con asse principale diretto WNW - ESE, divisa in vari blocchi da una serie di faglie dirette, ad orientamento NE - SW.

Il pozzo Clara Ovest 10 dir ha interessato il blocco "D" fino al livello PLQ "I" (faglia a m. 1593), il "D1" fino al livello PL3 "B" (faglia a m. 1692), il "D2" fino al livello PL3 "D1" (faglia a m. 1805) indi il "D4" fino al fondo.

La serie litostratigrafica attraversata dal sondaggio e' costituita da sabbie ed argille depositatesi in facies prevalentemente torbiditica a partire dal Pliocene superiore (F.ne Porto Garibaldi) fino al Pleistocene (F.ne Argille del Santerno), dove il rapporto sabbia/argilla e' decisamente a favore di quest'ultima.

Le correlazioni elettriche con i pozzi vicini sono buone e permettono di riconoscere con buona approssimazione tutti i livelli del campo, evidenziandone nel contempo la loro continuita' laterale.

Eta' e formazioni sono state desunte da correlazioni elettriche con i pozzi precedenti. L'interpretazione dello SHDT, registrato da m 1010.5 a m 2058, mostra una situazione strutturale in armonia con quanto esposto.

Da m 1010 a m 1475 responsi discreti, pendenze che vanno da 1 a 40*, azimut di direzione variabile con prevalenza nel quadrante SE, si notano pattern rossi e blu e probabili slumping. Da m 1475 a m 1810 responsi buoni e ben organizzati, pendenze fra 2 e 12* con qualche punto fino a 40*, azimut di direzione preferenziale SE, si notano pattern rossi e blu, in questo intervallo sono evidenti 3 faglie, la prima a m 1593 che separa il blocco "D" dal "D1", la seconda a m 1692 che separa il blocco "D1" dal "D2" e la terza a m 1805 che separa il blocco "D2" dal "D4", sono probabilmente presenti anche altri disturbi tettonici di piu' modesta entita'. Da m 1810 a m 2058 responsi buoni e ben organizzati, pendenze da 1 a 5* con qualche raro punto fino a 15*, azimut di direzione preferenziale SSW, e' presente qualche piccolo pattern rosso e blu.

In definitiva il pozzo ha attraversato i blocchi "D"-"D1" e "D2" sul loro fianco sud orientale e il blocco "D4" sul fianco sud occidentale in posizione molto vicina al culmine.

PLQ-J₁
Scale 1:25,000

CLARA OVEST

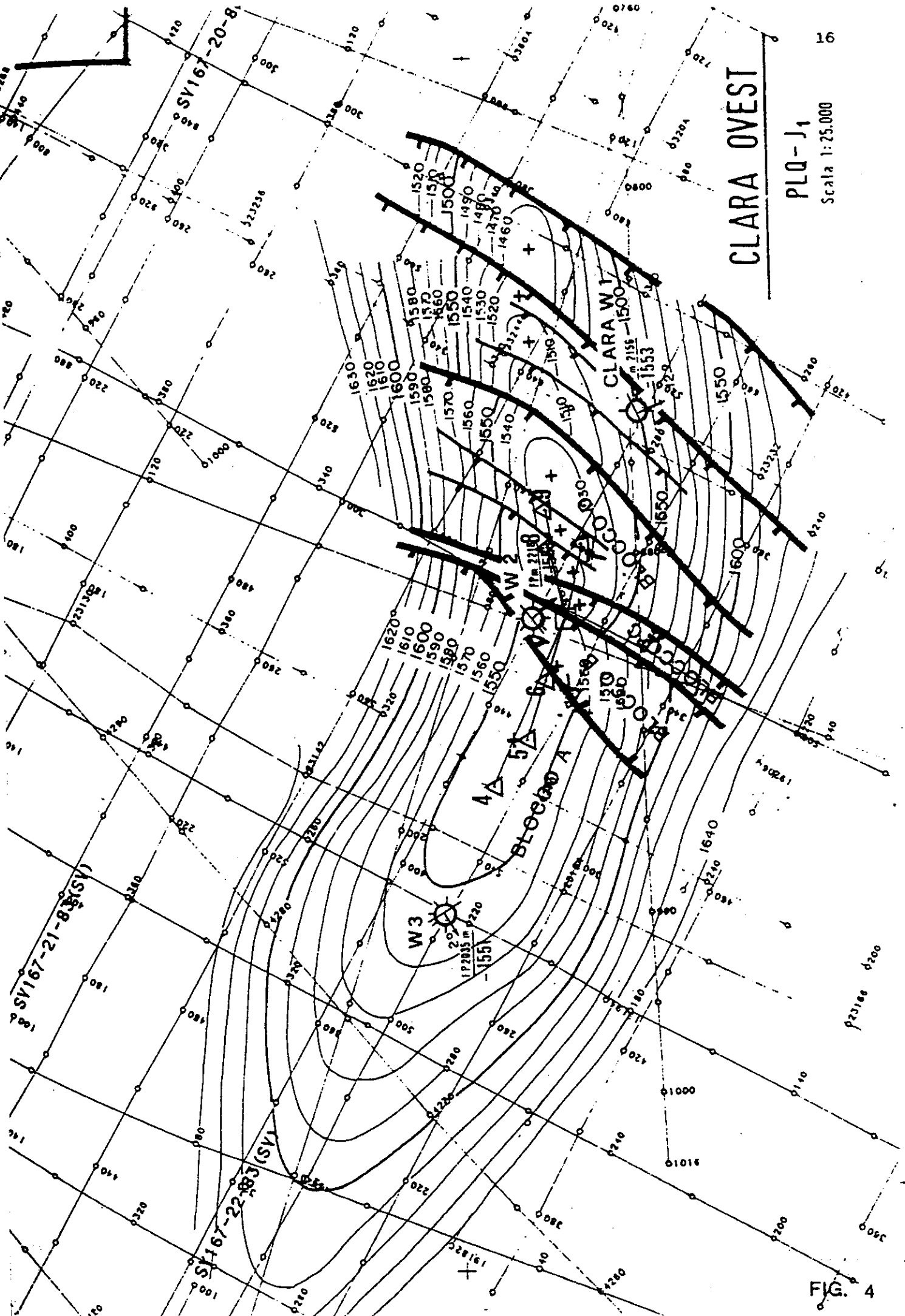


FIG. 4

PARTE III --- DATI MINERARI

3.01 MANIFESTAZIONI

- Foro : 1
 Intervallo : 150.0 - 2063.0
 Operazione in corso : PERFORAZIONE
 Descrizione :
 Durante la perforazione al detector continuo EXLOG, sono state registrate diverse manifestazioni a gas. I valori piu' significativi, di gas totale, rilevati sono i seguenti: m 1638-1640 = 2.4 % ; m 1644-1646 = 2.2 % ; m 1732-1738 = 2.6 % ; m 1816-1821 = 2.9 % ; m 1829-1832 = 2.6 % ; m 1879-1881 = 2.8 % ; m 1909-1911 = 2.2 % .

3.02 MINERALIZZAZIONI

Intervallo	-1- Mineralizzazione -2- Formazione
1010.5 - 1017.0	- ***** Codice mineralizzazione non presente
1017.0 - 1031.0	-1- TRACCE D'ACQUA SALATA -2-ARGILLE DEL SANTERNO
1307.0 - 1327.5	-1- TRACCE D'ACQUA SALATA -2-ARGILLE DEL SANTERNO
1346.0 - 1362.0	-1- TRACCE D'ACQUA SALATA -2-ARGILLE DEL SANTERNO
1405.0 - 1435.5	-1- TRACCE D'ACQUA SALATA -2-ARGILLE DEL SANTERNO
1526.5 - 1534.0	-1- TRACCE DI GAS -2-ARGILLE DEL SANTERNO -Zona PLQ -Livello H
1541.5 - 1547.5	-1- GAS -2-ARGILLE DEL SANTERNO -Zona PLQ -Livello H1
1553.0 - 1559.5	-1- GAS -2-ARGILLE DEL SANTERNO

Intervallo	-1- Mineralizzazione -2- Formazione
	-Zona PLQ -Livello H2
1565.0 - 1580.5	-1- TRACCE DI GAS E TRACCE DI ACQUA SALATA -2-ARGILLE DEL SANTERNO -Zona PLQ -Livello I
1580.5 - 1589.5	-1- ACQUA SALATA E TRACCE DI GAS -2-ARGILLE DEL SANTERNO -Zona PLQ -Livello I
1595.0 - 1596.5	-1- GAS -2-PORTO GARIBALDI -Zona PLQ -Livello J
1596.5 - 1604.0	-1- ACQUA SALATA E TRACCE DI GAS -2-PORTO GARIBALDI -Zona PLQ -Livello J1
1606.0 - 1614.0	-1- GAS -2-PORTO GARIBALDI -Zona PLQ -Livello K
1614.0 - 1624.0	-1- GAS E TRACCE DI ACQUA SALATA -2-PORTO GARIBALDI -Zona PLQ -Livello K
1624.0 - 1626.5	-1- ACQUA SALATA -2-PORTO GARIBALDI -Zona PLQ -Livello K
1638.0 - 1650.0	-1- GAS -2-PORTO GARIBALDI -Zona PL3 -Livello A
1650.0 - 1659.0	-1- GAS E TRACCE DI ACQUA SALATA -2-PORTO GARIBALDI -Zona PL3 -Livello A
1659.5 - 1669.0	-1- ACQUA SALATA E TRACCE DI GAS -2-PORTO GARIBALDI -Zona PL3 -Livello A1

Intervallo	-1- Mineralizzazione -2- Formazione
1674.5 - 1684.5	-1- TRACCE DI GAS -2-PORTO GARIBALDI -Zona PL3 -Livello B
1684.5 - 1687.0	-1- GAS -2-PORTO GARIBALDI -Zona PL3 -Livello B
1687.0 - 1692.0	-1- ACQUA SALATA -2-PORTO GARIBALDI -Zona PL3 -Livello B
1693.0 - 1695.5	-1- GAS -2-PORTO GARIBALDI -Zona PL3 -Livello B
1695.5 - 1707.5	-1- ACQUA SALATA -2-PORTO GARIBALDI -Zona PL3 -Livello B
1714.0 - 1717.0	-1- ACQUA SALATA E TRACCE DI GAS -2-PORTO GARIBALDI -Zona PL3 -Livello C
1720.0 - 1725.0	-1- GAS E TRACCE DI ACQUA SALATA -2-PORTO GARIBALDI -Zona PL3 -Livello C1
1726.0 - 1743.0	-1- ACQUA SALATA -2-PORTO GARIBALDI -Zona PL3 -Livello C2
1750.0 - 1756.0	-1- TRACCE DI GAS -2-PORTO GARIBALDI -Zona PL3 -Livello C3
1760.0 - 1768.0	-1- TRACCE DI GAS -2-PORTO GARIBALDI -Zona PL3 -Livello D

Intervallo	-1- Mineralizzazione -2- Formazione
1768.0 - 1772.5	-1- GAS -2-PORTO GARIBALDI -Zona PL3 -Livello D
1772.5 - 1796.0	-1- GAS E TRACCE DI ACQUA SALATA -2-PORTO GARIBALDI -Zona PL3 -Livello D
1797.5 - 1800.5	-1- GAS -2-PORTO GARIBALDI -Zona PL3 -Livello D1
1815.5 - 1830.0	-1- GAS -2-PORTO GARIBALDI -Zona PL3 -Livello E
1831.5 - 1847.5	-1- GAS E TRACCE DI ACQUA SALATA -2-PORTO GARIBALDI -Zona PL3 -Livello E1
1860.5 - 1879.5	-1- GAS E TRACCE DI ACQUA SALATA -2-PORTO GARIBALDI -Zona PL3 -Livello F
1880.5 - 1884.5	-1- GAS -2-PORTO GARIBALDI -Zona PL3 -Livello F1
1884.5 - 1890.5	-1- GAS E TRACCE DI ACQUA SALATA -2-PORTO GARIBALDI -Zona PL3 -Livello F1
1890.5 - 1903.0	-1- ACQUA SALATA -2-PORTO GARIBALDI -Zona PL3 -Livello F1
1906.0 - 1910.0	-1- GAS E TRACCE DI ACQUA SALATA -2-PORTO GARIBALDI -Zona PL3 -Livello G
1910.0 - 1915.5	-1- ACQUA SALATA -2-PORTO GARIBALDI -Zona PL3 -Livello G

Intervallo	-1- Mineralizzazione -2- Formazione
1922.5 - 1934.0	-1- TRACCE DI GAS -2-PORTO GARIBALDI -Zona PL3 -Livello H
1934.0 - 1941.5	-1- GAS E TRACCE DI ACQUA SALATA -2-PORTO GARIBALDI -Zona PL3 -Livello H
1954.5 - 1992.0	-1- ACQUA SALATA -2-PORTO GARIBALDI -Zona PL3 -Livello H1
1998.5 - 2018.5	-1- TRACCE DI GAS E TRACCE DI ACQUA SALATA -2-PORTO GARIBALDI -Zona PL3 -Livello H2
2027.5 - 2058.0	-1- ACQUA SALATA -2-PORTO GARIBALDI -Zona PL3 -Livello I

3.03 STIMOLAZIONI

=====

Nessuna

3.04 PROVE DI STRATO

=====

Nessuna

3.05 PROVE DI PRODUZIONE

=====

Nessuna

3.06 BOLLETTINI ANALISI FLUIDI

=====

Nessuno

3.07 WIRELINE FORMATION TESTS

- Foro nr. : 1
 RFT n. : 1
 Data : 18/05/88
 Intervallo : 1582.0 - 2028.0
 Scopo : RILEVAMENTO PRESS.

Rilevamenti effettuati

Stazione n.	Profondita'	Minuti Risalita	Pressioni Kg/cm ² - stabilizzata
1	1583.0	9	195.8 - si
2	1596.0	4	197.4 - si
3	1623.0	0	44.7 - no
4	1651.5	0	- no
5	1652.0	0	- no
6	1668.5	2	205.3 - si
7	1686.0	4	207.5 - si
8	1702.0	3	208.9 - si
9	1736.0	9	213.8 - si
10	1780.5	9	219.7 - si
11	1798.5	3	221.0 - si
12	1829.0	2	223.7 - si
13	1843.0	0	- no
14	1883.0	2	229.6 - si
15	1893.0	3	230.4 - si
16	1908.0	2	231.9 - si
17	1934.5	9	236.5 - si
18	1966.5	3	240.2 - si
19	1999.5	4	244.2 - si
20	2028.0	2	248.9 - si

Campionamento

Nessuno

3.08 RISULTATI MINERARI

1010.00 - 2063.00

Dall'analisi dei log elettrici il pozzo Clara Ovest 10 dir e' risultato mineralizzato a gas metano in diversi livelli torbiditici della formazione Porto Garibaldi (PLQ-J1-K; PL3-A-B-D-E-F1) e delle Argille del Santerno (PLQ H1 e H2), indizi di gas sono presenti anche nei livelli PLQ H ed I, PL3-C1-C3-E1-F-G-H.

La zona interessata da mineralizzazione a gas va da m 1526.5 a m 1941.5 ed e' costituita da alternanze di livelli da metrici a centimetrici di sabbie e argille. Le sabbie presentano saturazioni in acqua che vanno dal 38 al 75 % e porosita' del 25-35 %.

Il pozzo e' stato completato in doppio selettivo. La string corta e' stata aperta sul livello PL3-A che ha prodotto dal 6-3-89 al 11-7-89 quando e' stato chiuso per elevata venuta di sabbia.

Escluso con un tappo PX il livello PL3-A, il 20-8-89 veniva aperto alla produzione il PLQ-K che ha prodotto fino al 20-2-90 quando e' stato chiuso per pareggio di pressione al collettore. Il 18-4-90 veniva rimesso in produzione il livello PL3-A dopo aver fissato un filtro S.P.S. a m 1634 per eliminare la venuta di sabbia. La string lunga e' stata aperta sul livello PL3-F1 che ha prodotto dal 2-3-89 al 8-12-89 quando e' stato chiuso per venuta di acqua e sabbia. Il 3-3-90 escluso il livello PL3-F1 con un tappo FWG a m 1869 e' stato aperto alla produzione il livello PL3-E.

Agip

SITUAZIONE DEL POZZO

Fig. 2

Aggiornata al

18-04-90

Settore SNOR

Campo CLARA DWEST

Pozzo N. 10 DIR

UNITÀ TECNICA PRODUZIONE

Fine completamento ☐

Fine intervento ☒

Completamento singolo ☐

Selettivo ☐

Completamento doppio ☒

Selettivo ☒

Informazioni generali

Pozzo perforato nel periodo 08-5-88
 Impianto usato per la perforazione CORROPLAN
 Altezza p.t.r. sulla 1° flangia mt. 14.65
 Profondità max raggiunta 2063
 Tappi di cementazione a mt. 2022
 Tappi di cemento _____
 Bridge Plug a mt. _____
 Densità fango casing UABV 1390 gr/l
 Controllo fondo * TOP PESCE A MT 1984

Colonne Tubate	0.378"	0.948"	0.7"	
Testa a mt.	SUP	SUP	SUP	
Scarpe a mt.	296	1011	2061	
CEMENT	1° R. salita mt.	AGWUO	475	1235 a CBL
	2° R. salita mt.			
	D.V. collar mt.			

☐ line hanger _____ a mt. _____
 Foro scoperto a _____ da mt. _____ a mt. _____

Profilo diametri interni

nom.	fino a mt.	grado	spess.	lbs/ft	a interno
7"	1380	555		23	161.7
7"	2061	180		23	161.7

INTERVALLI APERTI

STRING LUNGA			STRING CORTA		
PL 3-B	1684.5-1826		PL Q-H	1544-1547	
	1693-1694			1553-1558	
PL 3-E	1816-1818		PL Q-K	1612.5-1613.5	
1819-1823	1826-1830		K10.5	1619.5	1622.5-1623.5
PL 3-F	1824-1825		PL 3-A	1638-1639	
				1645.5-1650	

DATA	Scopo	S/C
21-8-89	PX PLUG MT 1626 ESC PL 3A	
	APERTO PL QK (SSA MT 1598)	
14-3-90	FISSATO SPS MT 1597	
21-3-90	ESTRATTO SPS DA MT 1597	
20-6-90	CH. SPS P PX & SPS MT 1634	

NOTE: DA CORRELAZIONE CON TDT-K
 BHA + BASSO DI 53cm
 * L. TO DI VI 624 VAN CANTIA FONDO POZZO
 TOP A MT 1984

Caratteristiche

	STRING LUNGA	STRING CORTA
nom. - Giunto	2 3/4 IPT	2 3/4 IPT
Grado acciaio	P 105	P 105
lbs/ft	4.7	4.7
fino a mt.		
o	7'	7'
Mc dolo	A5	A5
tipo	47C2	47C2
Casa costrutt.	BAKER	BAKER
Fissato a mt.	1503.4	1503.3

Attrezzi in pozzo

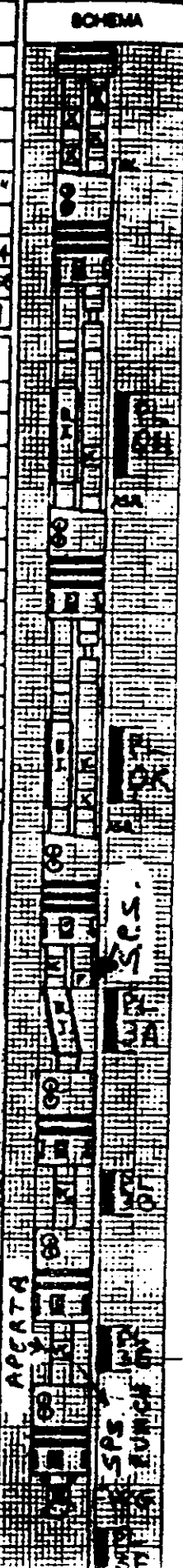
	I.D. mm	O.D. mm	a mt.
TBG HANGER DP 14	8PV	#2	13.44
L.N. OTIS X + 2 F.C.	476	710	959.37
L.N. OTIS X + 2 F.C.	476	710	1056.04
SAFETY JOINT (S.O.C. 6)	500	784	1511.37
BLAST J. 2 3/4 IPT	DA 150	05 A	1563.67 MT
SAFETY JOINT (S.O.C. 16)	500	784	1584.77
BLAST J. 2 3/4 IPT	DA 160	51 A	1626.32 MT
SSD OTIS "AA"	476	776	1632.23
BLAST J. 2 3/4 IPT	DA 1634	5 A	1655.18 MT
SSD OTIS "XA"	476	776	1678.72
SSD OTIS "XA"	476	776	1804.82
S.N. BAKER F 18	466	784	1819.62
SCARPA - MULE SHOE 2 1/2 IN			1870.00

TBG HANGER BORDA #14 BN #2	TSB	13.44
L.N. OTIS X + 2 FC	476	710
L.N. OTIS X + 2 FC	476	710
SNAP LATCH BAKER	493	730
TELE JOINT BAKER	490	784
SSD OTIS XA	476	776
L.N. OTIS X	476	710
ANCHOR S.R. BAKER	490	73/78
TELESCOPIC JOINT BAKER	490	784
SSD OTIS XA	476	776
L.N. OTIS X	476	710
ANCHOR S.R. BAKER	490	73/78
S.N. BAKER "F" 181	4602	732
SCARPA - BOTTOM S.N.F 4602	732	1634.05

DATA	Scopo	S/L
3-3-90	ESC PL 3F (FWG) AP. PL 3E	
22-3-90	PUNCHER MT 1837	
11-4-90	FISSATO SPS MT 1805	

Assistente W.O.
 GALLI - DELLA LUCIA
 PORTELLI - TOFFI

Respons. Unità Tecn.



PARTE IV --- PERFORAZIONE

=====

Nr. : 1
 Tipo : IMPIANTO SU PIATTAFORMA FISSA E TENDER
 Nome : NATIONAL 110 UE-CORMORANT

4.02 CONTRATTISTA

=====

FORAMER

4.03 TEMPI DI ATTIVITA'

=====

Inizio perforazione : 08/05/88
 Fine perforazione : 16/05/88
 Fine completamento : 28/07/88
 Rilascio impianto : 28/07/88

4.04 PROFONDITA' FINALE POZZO (da perforazione)

=====

Misurata : 2063.0
 Verticale : 2028.0

4.05 PROFONDITA' FINALE POZZO (da log)

=====

Misurata : 2064.0
 Verticale : 2029.0

4.06 TOTALE METRI PERFORATI

=====

1963.0

4.07 FASI DI PERFORAZIONE

=====

Nr.Fr.	Nr.Fase	Top	Bottom	Diametro
1	1	110.0	300.0	17"1/2
1	2	300.0	1013.0	12"1/4
1	3	1013.0	2063.0	8"1/2

4.08 DISTRIBUZIONE TEMPI

Foro numero :1

CODICE	FASE 1 17"1/2	FASE 2 12"1/4	FASE 3 8"1/2	FASE	FASE	FASE	FASE	TOTALI
A01	8.00	12.00	0.00	0.00	0.00	0.00	0.00	20.00
A04	0.00	11.30	45.15	0.00	0.00	0.00	0.00	56.45
A07	1.30	8.30	7.15	0.00	0.00	0.00	0.00	17.15
A11	1.00	6.00	6.30	0.00	0.00	0.00	0.00	13.30
A20	5.30	4.30	1.30	0.00	0.00	0.00	0.00	11.30
A21	1.00	2.00	6.30	0.00	0.00	0.00	0.00	9.30
A22	0.30	1.00	5.45	0.00	0.00	0.00	0.00	7.15
A23	1.00	1.00	5.15	0.00	0.00	0.00	0.00	7.15
A25	0.00	2.30	4.00	0.00	0.00	0.00	0.00	6.30
A26	0.00	0.00	3.00	0.00	0.00	0.00	0.00	3.00
A27	0.00	0.00	3.00	0.00	0.00	0.00	0.00	3.00
TOTALI	18.30	49.00	88.00	0.00	0.00	0.00	0.00	155.30

CODICE	FASE 1 17"1/2	FASE 2 12"1/4	FASE 3 8"1/2	FASE	FASE	FASE	FASE	TOTALI
C02	0.30	0.30	0.30	0.00	0.00	0.00	0.00	1.30
C03	2.00	5.00	8.00	0.00	0.00	0.00	0.00	15.00
C04	0.30	1.30	1.30	0.00	0.00	0.00	0.00	3.30
C05	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
C06	1.30	0.00	1.30	0.00	0.00	0.00	0.00	3.00
C07	4.00	5.00	8.00	0.00	0.00	0.00	0.00	17.00
C10	0.00	0.30	2.30	0.00	0.00	0.00	0.00	3.00
C20	3.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00
TOTALI	11.30	13.30	22.00	0.00	0.00	0.00	0.00	47.00

CODICE	FASE 1 17"1/2	FASE 2 12"1/4	FASE 3 8"1/2	FASE	FASE	FASE	FASE	TOTALI
D02	0.00	0.00	25.00	0.00	0.00	0.00	0.00	25.00
D20	0.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00
TOTALI	0.00	0.00	27.00	0.00	0.00	0.00	0.00	27.00

CODICE	FASE 1 17"1/2	FASE 2 12"1/4	FASE 3 8"1/2	FASE	FASE	FASE	FASE	TOTALI
E01	12.00	7.00	3.00	0.00	0.00	0.00	0.00	22.00
E02	16.00	3.30	0.00	0.00	0.00	0.00	0.00	19.30
E03	0.00	6.00	0.00	0.00	0.00	0.00	0.00	6.00
E04	0.00	1.00	3.30	0.00	0.00	0.00	0.00	4.30
E08	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
E20	0.00	1.00	1.30	0.00	0.00	0.00	0.00	2.30
TOTALI	29.00	18.30	8.00	0.00	0.00	0.00	0.00	55.30

CODICE	FASE 1 17"1/2	FASE 2 12"1/4	FASE 3 8"1/2	FASE	FASE	FASE	FASE	TOTALI
005	0.00	0.00	14.00	0.00	0.00	0.00	0.00	14.00
TOTALI	0.00	0.00	14.00	0.00	0.00	0.00	0.00	14.00

CODICE	FASE 1 17"1/2	FASE 2 12"1/4	FASE 3 8"1/2	FASE	FASE	FASE	FASE	TOTALI
Q01	0.00	0.00	9.00	0.00	0.00	0.00	0.00	9.00
TOTALI	0.00	0.00	9.00	0.00	0.00	0.00	0.00	9.00

CODICE	FASE 1 17"1/2	FASE 2 12"1/4	FASE 3 8"1/2	FASE	FASE	FASE	FASE	TOTALI
R02	0.00	0.00	6.30	0.00	0.00	0.00	0.00	6.30
R20	0.00	2.00	1.00	0.00	0.00	0.00	0.00	3.00
TOTALI	0.00	2.00	7.30	0.00	0.00	0.00	0.00	9.30

CODICE	FASE 1 17"1/2	FASE 2 12"1/4	FASE 3 8"1/2	FASE	FASE	FASE	FASE	TOTALI
T03	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
TOTALI	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00

CODICI	FASE 1 17"1/2	FASE 2 12"1/4	FASE 3 8"1/2	FASE	FASE	FASE	FASE	FASE
A	18.30	49.00	88.00	0.00	0.00	0.00	0.00	155.30
C	11.30	13.30	22.00	0.00	0.00	0.00	0.00	47.00
D	0.00	0.00	27.00	0.00	0.00	0.00	0.00	27.00
E	29.00	18.30	8.00	0.00	0.00	0.00	0.00	55.30
O	0.00	0.00	14.00	0.00	0.00	0.00	0.00	14.00
Q	0.00	0.00	9.00	0.00	0.00	0.00	0.00	9.00
R	0.00	2.00	7.30	0.00	0.00	0.00	0.00	9.30
T	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
TOTALI	60.00	83.00	175.30	0.00	0.00	0.00	0.00	318.30

CODICE	DECODIFICA
A	PERFORAZIONE
C	TUBAGGI E CEMENTAZIONI
D	LOSS ELETTRICI
E	INFLANGIATURA E MONTAGGIO APPARECCHIATURE DI SICUREZZA
O	ABBANDONO POZZO
Q	COMPLETAMENTO POZZO
R	SOSTE PER RIPARAZIONI E MANUTENZIONE
T	SPOSTAMENTO IMPIANTO

A	PERFORAZIONE
A01	VERTICALE REGOLARE
A011	VERTICALE REGOLARE TURBODRILLING
A02	VERTICALE A PERDITA
A03	VERTICALE A SCHIUMA, ARIA, FANGO AERATO
A04	DIREZIONATA REGOLARE ROTARY
A041	DIREZIONATA REGOLARE TURBODRILLING
A042	IMPOSTAZIONE DEVIAZIONE
A05	DIREZIONATA A PERDITA
A06	DIREZIONATA A SCHIUMA, ARIA, FANGO AERATO
A07	CIRCOLAZIONE PER CONDIZIONAMENTO FANGO
A071	CIRCOLAZIONE PER CAMBIO BIT
A072	CIRCOLAZIONE PER SURVEY
A08	RIPASSO FORO E RELATIVA MANOVRA
A081	RIPERFORAZIONE E RELATIVE MANOVRE
A09	ALLARGAMENTO FORO E UNDERREAMING
A11	SHORT TRIPS
A12	CAMBIO COMPOSIZIONE BATTERIA
A13	RILEVAMENTO DEVIAZIONE CON SISTEMI STANDARD
A14	RILEVAMENTO DEVIAZIONE CON SISTEMA MWD
A19	NOTIZIE NON CHIARE O NON DISPONIBILI
A20	ALTRE OPERAZIONI
A21	RISALITA BIT DA FONDO - BIT ALLA SCARPA
A22	RISALITA BIT ALLA SCARPA - PRIMA DC A GIORNO
A23	RISALITA PRIMA DC A GIORNO - BIT A GIORNO
A24	CAMBIO BIT
A25	DISCESA BIT DA GIORNO - ULTIMA DC
A26	DISCESA ULTIMA DC - BIT ALLA SCARPA
A27	DISCESA BIT ALLA SCARPA - BIT AL FONDO
B	CAROTAGGIO
B01	VERTICALE REGOLARE
B04	DIREZIONATO REGOLARE
B07	CIRCOLAZIONE PER CONDIZIONAMENTO FANGO E RELATIVA MANOVRA
B071	CIRCOLAZIONE
B08	RIPASSO FORO E RELATIVA MANOVRA
B11	MANOVRA ANTICIPATA PER CAROTAGGIO
B18	MONTAGGIO E CONTROLLO CAROTIERE
B19	NOTIZIE NON CHIARE O NON DISPONIBILI
B20	ALTRE OPERAZIONI
B21	RISALITA CORE BIT AL FONDO - CORE BIT ALLA SCARPA
B22	RISALITA CORE BIT ALLA SCARPA - PRIMA DC A GIORNO
B23	RISALITA PRIMA DC A GIORNO - CORE BIT A GIORNO
B24	RECUPERO CAROTA
B25	DISCESA CORE BIT A GIORNO - ULTIMA DC
B26	DISCESA ULTIMA DC - CORE BIT ALLA SCARPA
B27	DISCESA CORE BIT ALLA SCARPA - CORE BIT AL FONDO
C	TUBAGGI E CEMENTAZIONI
C01	RIPASSO E CONTROLLO FORO
C011	CIRCOLAZIONE PER CONDIZIONAMENTO FANGO E RELATIVE MANOVRE
C02	PREPARATIVI PER IL TUBAGGIO
C021	ASSIEMAGGIO HANGER
C022	RECUPERO WEAR BUSHING

C03	DISCESA DEL CASING
C031	DISCESA CON DRILL PIPES
C04	CIRCOLAZIONI INTERMEDIE E FINALI
C041	CIRCOLAZIONI DOPO CEMENTAZIONI
C05	ESTRAZIONI DEL CASING
C06	CEMENTAZIONI PRIMARIE A STADIO UNICO
C061	CEMENTAZIONI A PIU' STADI
C062	CEMENTAZIONI TIE BACK
C07	ATTESA PRESA CEMENTO
C08	RICEMENTAZIONE, SQUEEZE, INCLUSA MANOVRA PER BRIDGE PLUG
C081	DISCESA E FISSAGGIO PACKER SU TESTA LINER
C09	SCREPERAGGIO E CONDIZIONAMENTO FANGO
C10	FRESAGGIO CEMENTO, BRIDGE PLUG, DV, SCARPA, COLLARE
C11	PROVA DI TENUTA TESTA LINER, CASING, ECC.
C12	SOSPENSIONE DI EMERGENZA DEL CASING
C13	DISCESA CASING DI TIE BACK
C14	MANOVRE PER FRESAGGIO CEMENTO, BRIDGE PLUG, DV, SCARPA, COLLARE
C19	NOTIZIE NON CHIARE O NON DISPONIBILI
C20	ALTRE OPERAZIONI
D	LOGS ELETTRICI
D01	RIPASSO E CONTROLLO FORO
D011	CIRCOLAZIONE E CONDIZIONAMENTO FANGO
D02	REGISTRAZIONE LOGS E CAROTE DI PARETE
D021	REGISTRAZIONI LOGS CON DRILL PIPES (TLC, ECC, ECC.)
D03	DISCESE A VUOTO
D04	PESCAGGIO ATTREZZI
D19	NOTIZIE NON CHIARE O NON DISPONIBILI
D20	ALTRE OPERAZIONI
E	INFLANGIATURA E MONTAGGIO APPARECCHIATURE DI SICUREZZA
E01	MONTAGGIO INFLANGIATURE/PACK OFF
E011	SALDATURA FLANGIA BASE
E02	MONTAGGIO APPARECCHIATURE DI SICUREZZA
E03	COLLAUDI RELATIVI
E031	RECUPERO E DISCESA WEAR BUSHING
E04	MANOVRE DISCESA E RECUPERO BOP
E05	MANOVRE DISCESA E RECUPERO RISER
E06	MANOVRE DISCESA E RECUPERO PODS
E07	MONTAGGIO E DISCESA TGB e PGB
E08	PIT DRILLS
E19	NOTIZIE NON CHIARE O NON DISPONIBILI
E20	ALTRE OPERAZIONI
F	PROVE DI STRATO (DST)
F01	PROVE IN FORO TUBATO
F011	PROVE IN FORO SCOPERTO
F02	PROVE NON RIUSCITE PER DIFETTO ATTREZZATURA
F03	PROVE NON RIUSCITE PER ALTRE CAUSE
F04	RIPASSO FORO E SCREPERAGGIO COLONNA
F05	CONDIZIONAMENTO FANGO E RELATIVE MANOVRE
F06	SPARI
F07	BRIDGE PLUGS E RELATIVE MANOVRE
F071	TAPPI DI CEMENTO E RELATIVE MANOVRE
F072	TAPPI DI SABBIA E RELATIVE MANOVRE
F08	MANOVRE E FRESAGGIO BRIDGE PLUG

F081	MANOVRE E FRESAGGIO TAPPI DI CEMENTO
F082	MANOVRE E FRESAGGIO TAPPI DI SABBIA
F09	SQUEEZE CEMENTO
F091	RELATIVE MANOVRE
F10	MONTAGGIO ATTREZZATURE E SMONTAGGIO E TESTS
F11	MANOVRA DISCESA BATTERIA DI PROVA
F12	MANOVRA RISALITA BATTERIA DI PROVA
F13	ATTESA PRESA CEMENTO
F19	NOTIZIE NON CHIARE O NON DISPONIBILI
F20	ALTRE OPERAZIONI
G	PERDITE DI CIRCOLAZIONE
G01	PREPARAZIONE E POMPAMENTO CUSCINI
G011	RELATIVE MANOVRE
G02	PREPARAZIONE E POMPAMENTO TAPPI, SQUEEZES
G021	RELATIVE MANOVRE
G03	CIRCOLAZIONE E CONDIZIONAMENTO FANGO
G031	RELATIVE MANOVRE
G04	FRESAGGIO TAPPI, BP, ECC.
G041	RELATIVE MANOVRE
G05	MANOVRE PER RAGIONI VARIE
G06	OSSERVAZIONE POZZO, CONTROLLO LIVELLO
G07	PROVE DI TENUTA E RELATIVE MANOVRE
G08	ATTESA PRESA CUSCINO DI INTERVENTO
G19	NOTIZIE NON CHIARE O NON DISPONIBILI
G20	ALTRE OPERAZIONI
H	MANIFESTAZIONI ED ERUZIONI
H01	CIRCOLAZIONE E CONDIZIONAMENTO FANGO
H02	CIRCOLAZIONE E CONDIZIONAMENTO FANGO SOTTO DUSE
H03	PREPARAZIONE FANGO
H04	TAPPI CEMENTO, SQUEEZE, MISCELE SPECIALI
H05	FRESAGGIO DEGLI STESSI
H06	MANOVRE PER RAGIONI VARIE
H07	OSSERVAZIONI POZZO, CONTROLLO PRESSIONI
H08	CONTROLLO TERZIARIO
H09	OPERAZIONI DI STRIPPING/SNUBBING
H19	NOTIZIE NON CHIARE O NON DISPONIBILI
H20	ALTRE OPERAZIONI
I	PRESE DI BATTERIA E WASHOUT
I01	TIRI E RILASCI, OPERAZIONI CON JAR E BUMPER SUB
I02	PREPARAZIONE E SPIAZZAMENTO CUSCINI
I03	ATTESA EFFETTO CUSCINI
I04	CIRCOLAZIONI E CONDIZIONAMENTO FANGO
I05	ESECUZIONE FREE POINT E BACK OFF
I06	SVITAMENTO, ESTRAZIONE E RIPRISTINO BATTERIA
I07	.....
I07	ESTRAZIONE BATTERIA PER CONTROLLO E SOSTITUZ. MATERIALE DANNEGGIA
I19	NOTIZIE NON CHIARE O NON DISPONIBILI
I20	ALTRE OPERAZIONI
L	PESCAGGIO
L01	TAGLIO ASTE E MANOVRE RELATIVE
L02	STRUMENTAZIONE CON OVERSHOT E RELATIVE MANOVRE
L03	STRUMENTAZIONE CON MAGNETICO E RELATIVE MANOVRE
L04	STRUMENTAZIONE CON ALTRI PESCATORI E RELATIVE MANOVRE
L05	STRUMENTAZIONE CON PORTAIMPRONTA E RELATIVE MANOVRE

L06	STRUMENTAZIONE CON ARPIONE E RELATIVE MANOVRE
L061	STRUMENTAZIONE CON JUNK BASKET E RELATIVE MANOVRE
L07	FRESAGGIO SCALPELLO
L071	RELATIVE MANOVRE
L08	FRESAGGIO ASTE DI PERFORAZIONE
L081	RELATIVE MANOVRE
L09	FRESAGGIO ASTE PESANTI E RIDUZIONI
L091	RELATIVE MANOVRE
L10	STRUMENTAZIONI CON TUBI DI LAVAGGIO
L101	RELATIVE MANOVRE
L11	RIPASSO FORO E CONDIZIONAMENTO FANGO
L19	NOTIZIE NON CHIARE O NON DISPONIBILI
L20	ALTRE OPERAZIONI
M	SIDE TRACKING
M04	PERFORAZIONE DIREZIONATA/DEVIATA REGOLARE ROTARY
M041	PERFORAZIONE DIREZIONATA/DEVIATA REGOLARE TURBODRILL
M05	PERFORAZIONE DIREZIONATA/DEVIATA A PERDITA
M06	PERFORAZIONE DIREZIONATA/DEVIATA A SCHIUMA,ARIA,FANGO AREATO
M07	CIRCOLAZIONE PER CONDIZIONAMENTO FANGO
M071	CIRCOLAZIONE PER CAMBIO BIT
M072	CIRCOLAZIONE PER SURVEY
M08	RIPASSO FORO E RELATIVA MANOVRA
M09	ALLARGAMENTO FORO E UNDERREAMING
M10	MANOVRE PER CAMBIO SCALPELLO
M11	SHORT TRIPS
M12	CAMBIO COMPOSIZIONE BATTERIA
M13	RILEVAMENTO DEVIAZIONE CON SISTEMI STANDARD
M14	RILEVAMENTO DEVIAZIONE CON SISTEMA MWD
M15	ESECUZIONE E CONTROLLO TAPPO CEMENTO
M16	FINISTRATURA CASING CON SECTION MILL
M161	FINISTRATURA CASING CON WHIPSTOCK
M17	IMPOSTAZIONE DEVIAZIONE
M18	MANOVRE PER RAGIONI VARIE
M19	NOTIZIE NON CHIARE O NON DISPONIBILI
M20	ALTRE OPERAZIONI
N	ROTTURA CASING
N01	PROVE PER INDIVIDUARE PROFONDITA' ROTTURA (MANOV.,CIRC.,ECC.)
N02	OPERAZIONI VARIE PER ELIMINARE CONSEGUENTI ASSORBIMENTI E REL. MA
N03	OPERAZIONI VARIE PER CONTROLLARE ED ELIMINARE CONSEGUENTI MANIFE-
N03A	STAZIONI E RELATIVE MANOVRE
N04	PREPARAZIONE FANGO
N05	FRESAGGIO TAPPI, BRIDGE PLUGS, ECC. E RELATIVE MANOVRE
N06	RIPASSO FORO E CONDIZIONAMENTO FANGO
N07	TAGLIO E CIRCOLAZIONE
N071	SMONTAGGIO TESTA POZZO
N072	RECUPERO CASING
N08	REINTEGRO COLONNA E REINFLANGIATURA
N09	CEMENTAZIONE REINTEGRO
N10	MONTAGGIO TESTA POZZO E COLLAUDI
N19	NOTIZIE NON CHIARE O NON DISPONIBILI
N20	ALTRE OPERAZIONI
O	ABBANDONO POZZO
O01	TAGLIO CASING E RELATIVE MANOVRE
O02	ESECUZ. TAPPI,FISSAG. BRIDGE PLUGS,SQUEEZES,COLLAUDI E REL. MANOV

003	CIRCOLAZIONE E CONDIZIONAMENTO FANGO E MANOVRE
004	RECUPERO CASING E TESTA POZZO
005	SDOPPIAGGIO LUNGHEZZE
006	CHIUSURA BOCCA POZZO
019	NOTIZIE NON CHIARE O NON DISPONIBILI
020	ALTRE OPERAZIONI
P	PROVE DI PRODUZIONE
P01	PROVE
P02	PROVE NON RIUSCITE PER DIFETTO ATTREZZATURA
P03	PROVE NON RIUSCITE PER ALTRE CAUSE
P04	RIPASSO FORO E SCREPERAGGIO COLONNA
P05	CONDIZIONAMENTO FANGO E RELATIVE MANOVRE
P06	SPARI
P07	BRIDGE PLUGS, TAPPI CEMENTO, TAPPI SABBIA E RELATIVE MANOVRE
P08	FRESAGGIO DEGLI STESSI E RELATIVE MANOVRE
P09	SQUEEZE CEMENTO E RELATIVE MANOVRE
P10	MONTAGGIO ATTREZZATURA, RELATIVI COLLAUDI E MANOVRE DI DISCESA
P101	MANOVRA DI ESTRAZIONE E SMONTAGGIO ATTREZZATURA
P11	CONFEZIONAMENTO FLUIDO DI COMPLETAMENTO (BRINE)
P12	SOSTITUZIONE FANGO CON FLUIDO DI COMPLETAMENTO E RELATIVE MANOVRE
P19	NOTIZIE NON CHIARE O NON DISPONIBILI
P20	ALTRE OPERAZIONI
Q	COMPLETAMENTO POZZO
Q01	COMPLETAMENTO PROVVISORIO
Q02	COMPLETAMENTO DEFINITIVO CON UNA STRING
Q03	COMPLETAMENTO DEFINITIVO CON DUE STRING
Q19	NOTIZIE NON CHIARE O NON DISPONIBILI
Q20	ALTRE OPERAZIONI
R	SOSTE PER RIPARAZIONI E MANUTENZIONE
R01	IMPIANTO
R02	POMPE FANGO
R03	ATTREZZATURE TRATTAMENTO FANGO E REFLUI
R04	ATTREZZATURE TUBAGGIO E CEMENTAZIONE
R05	APPARECCHIATURE SICUREZZA
R06	ATTREZZATURE COMPAGNIE DI SERVIZIO
R07	POSTAZIONE
R08	TAGLIO E SCORRIMENTO CAVO
R19	NOTIZIE NON CHIARE O NON DISPONIBILI
R20	ALTRE RIPARAZIONI
S	ATTESE
SA01	CONDIZIONI METEO-MARINE- PERFORAZIONE
SA02	MATER-SERV COMMITTENTE - PERFORAZIONE
SA03	MATER-PERS CONTRAT.PERF- PERFORAZIONE
SA04	MATER-PERS ALTRI CONTRAT-PERFORAZIONE
SA06	ORDINI-PERFORAZIONE
SB01	CONDIZIONI METEO-MARINE- CAROTAGGIO
SB02	MATER-SERV COMMITTENTE - CAROTAGGIO
SB03	MATER-PERS CONTRAT.PERF- CAROTAGGIO
SB04	MATER-PERS ALTRI CONTRAT-CAROTAGGIO
SB06	ORDINI-CAROTAGGIO
SC01	CONDIZIONI METEO-MARINE- TUBAGGI E CEMENTAZIONI
SC02	MATER-SERV COMMITTENTE - TUBAGGI E CEMENTAZIONI
SC03	MATER-PERS CONTRAT.PERF- TUBAGGI E CEMENTAZIONI
SC04	MATER-PERS ALTRI CONTRAT-TUBAGGI E CEMENTAZIONI

SC06	ORDINI-TUBAGGI E CEMENTAZIONI
SD01	CONDIZIONI METEO-MARINE- LOGS ELETTRICI
SD02	MATER-SERV COMMITTENTE - LOGS ELETTRICI
SD03	MATER-PERS CONTRAT.PERF- LOGS ELETTRICI
SD04	MATER-PERS ALTRI CONTRAT-LOGS ELETTRICI
SD06	ORDINI-LOGS ELETTRICI
SE01	CONDIZIONI METEO-MARINE- INFLANGIATURA
SE02	MATER-SERV COMMITTENTE - INFLANGIATURA
SE03	MATER-PERS CONTRAT.PERF- INFLANGIATURA
SE04	MATER-PERS ALTRI CONTRAT-INFLANGIATURA
SE06	ORDINI-INFLANGIATURA
SF01	CONDIZIONI METEO-MARINE- DST
SF02	MATER-SERV COMMITTENTE - DST
SF03	MATER-PERS CONTRAT.PERF- DST
SF04	MATER-PERS ALTRI CONTRAT-DST
SF06	ORDINI-DST
SG01	CONDIZIONI METEO-MARINE- PERDITE DI CIRCOLAZIONE
SG02	MATER-SERV COMMITTENTE - PERDITE DI CIRCOLAZIONE
SG03	MATER-PERS CONTRAT.PERF- PERDITE DI CIRCOLAZIONE
SG04	MATER-PERS ALTRI CONTRAT-PERDITE DI CIRCOLAZIONE
SG06	ORDINI-PERDITE DI CIRCOLAZIONE
SH01	CONDIZIONI METEO-MARINE- MANIFEST. ERUZIONI
SH02	MATER-SERV COMMITTENTE - MANIFEST. ERUZIONI
SH03	MATER-PERS CONTRAT.PERF- MANIFEST. ERUZIONI
SH04	MATER-PERS ALTRI CONTRAT-MANIFEST. ERUZIONI
SH06	ORDINI-MANIFEST. ERUZIONI
SI01	CONDIZIONI METEO-MARINE- PRESE DI BATTERIA
SI02	MATER-SERV COMMITTENTE - PRESE DI BATTERIA
SI03	MATER-PERS CONTRAT.PERF- PRESE DI BATTERIA
SI04	MATER-PERS ALTRI CONTRAT-PRESE DI BATTERIA
SI06	ORDINI-PRESE DI BATTERIA
SL01	CONDIZIONI METEO-MARINE- PESCAGGIO
SL02	MATER-SERV COMMITTENTE - PESCAGGIO
SL03	MATER-PERS CONTRAT.PERF- PESCAGGIO
SL04	MATER-PERS ALTRI CONTRAT-PESCAGGIO
SL06	ORDINI-PESCAGGIO
SM01	CONDIZIONI METEO-MARINE- SIDE TRACKING
SM02	MATER-SERV COMMITTENTE - SIDE TRACKING
SM03	MATER-PERS CONTRAT.PERF- SIDE TRACKING
SM04	MATER-PERS ALTRI CONTRAT-SIDE TRACKING
SM06	ORDINI-SIDE TRACKING
SN01	CONDIZIONI METEO-MARINE- ROTTURA CSG
SN02	MATER-SERV COMMITTENTE - ROTTURA CSG
SN03	MATER-PERS CONTRAT.PERF- ROTTURA CSG
SN04	MATER-PERS ALTRI CONTRAT-ROTTURA CSG
SN06	ORDINI-ROTTURA CSG
SO01	CONDIZIONI METEO-MARINE- ABBANDONO POZZO
SO02	MATER-SERV COMMITTENTE - ABBANDONO POZZO
SO03	MATER-PERS CONTRAT.PERF- ABBANDONO POZZO
SO04	MATER-PERS ALTRI CONTRAT-ABBANDONO POZZO
SO06	ORDINI-ABBANDONO POZZO
SP01	CONDIZIONI METEO-MARINE- PROVE DI PRODUZIONE
SP02	MATER-SERV COMMITTENTE - PROVE PRODUZIONE
SP03	MATER-PERS CONTRAT.PERF- PROVE PRODUZIONE

SP04	MATER-PERS ALTRI CONTRAT-PROVE PRODUZIONE
SP06	ORDINI-PROVE PRODUZIONE
SQ01	CONDIZIONI METEO-MARINE- COMPL. POZZO
SQ02	MATER-SERV COMMITTENTE - COMPL. POZZO
SQ03	MATER-PERS CONTRAT.PERF- COMPL. POZZO
SQ04	MATER-PERS ALTRI CONTRAT-COMPL. POZZO
SQ06	ORDINI-COMPL. POZZO
SR01	CONDIZIONI METEO-MARINE- RIPARAZ. E MANUTENZ.
SR02	MATER-SERV COMMITTENTE - RIPARAZ.E MANUTENZ.
SR03	MATER-PERS CONTRAT.PERF- RIPARAZ.E MANUTENZ.
SR04	MATER-PERS ALTRI CONTRAT-RIPARAZ.E MANUTENZ.
SR06	ORDINI-RIPARAZ.E MANUTENZ.
ST01	CONDIZIONI METEO-MARINE- SPOSTAMENTO IMPIANTO
ST02	MATER-SERV COMMITTENTE - SPOSTAMENTO IMPIANTO
ST03	MATER-PERS CONTRAT.PERF- SPOSTAMENTO IMPIANTO
ST04	MATER-PERS ALTRI CONTRAT-SPOSTAMENTO IMPIANTO
ST06	ORDINI-SPOSTAMENTO IMPIANTO
SU01	CONDIZIONI METEO-MARINE- CONDUCTOR PIPE
SU02	MATER-SERV COMMITTENTE - CONDUCTOR PIPE
SU03	MATER-PERS CONTRAT.PERF- CONDUCTOR PIPE
SU04	MATER-PERS ALTRI CONTRAT-CONDUCTOR PIPE
SU06	ORDINI-CONDUCTOR PIPE
S05	POSTAZIONE
T	SPOSTAMENTO IMPIANTO
T01	SMONTAGGIO IMPIANTO
T02	RECUPERO ANCORE
T03	SPOSTAMENTO IMPIANTO
T04	MONTAGGIO IMPIANTO
T05	POSIZIONAMENTO E ORMEGGIO
T06	COLLAUDI IMPIANTO
T19	NOTIZIE NON CHIARE O NON DISPONIBILI
T20	ALTRE OPERAZIONI
U	CONDUCTOR PIPE
U01	BATTITURA CONDUCTOR PIPE
U02	SALDATURA CONDUCTOR PIPE
U03	LAVAGGIO INTERNO C.P. E RELATIVE MANOVRE
U04	TAGLIO E MONTAGGIO TUBO PIPA
U05	DISCESA CONDUCTOR PIPE CON JETTING
U19	NOTIZIE NON CHIARE O NON DISPONIBILI
U20	ALTRE OPERAZIONI

4.09 NOVITA'GIORNALIERE DI PERFORAZIONE

DATA	DESCRIZIONE OPERAZIONI
08/05/88	MONTAGGIO DIVERTER
da ore	a ore
08.00	09.00: INIZIO LAVORI SU CLARA OVEST 10 DIR 08.00 DEL 08/05/88
	09.00:Preparativi e skiddaggio impianto da Clara Ovest 11 Dir a secondo foro a Clara Ovest 10 Dir.
09.00	17.00:Montato Hydrill 20" MPS 2000 - Montato linea Diverter 12" Direzione NE - Seconda linea non posizionabile causa interferenza con struttura piattaforma.

17.00 18.00:Test funzionalita' diverter = OK (apertura 2 sec) -Chiuso 20"
Hydrill e provato tenuta testa pozzo a 150 PSI x 10' = OK
(tempo chiusura 15 sec)
18.00 21.00:Disceso Bit n.1 (usato) componendo nuova BHA a mt 110.
21.00 21.30:Spiazzato H2O di mare in 20" C.P. con fango.
21.30 23.30:Lavato interno 20" C.P. da mt 110 a mt 144.
23.30 24.00:Perforato da mt 144 a mt 156 (perf.= 6 ore,survey= 1 ora,cir-
colato = 30 min.)

09/05/88 TUBAGGIO E CEMENTAZIONE 13"3/8

da ore a ore
00.00 07.30:Perforato da mt 156 a mt 300
07.30 08.00:Circolato
08.00 09.00:Wiper Trip a mt 140 e ridisceso al fondo.
09.00 10.00:Circolazione
10.00 12.30:Estrazione bit n.1
12.30 13.00:Preparativi per tubaggio.
13.00 15.00:Discesi 23 giunti.Scarpa a mt 296.
15.00 16.30:Disceso Stinger e inserito scarpa Weatherford OK
16.30 17.00:Circolato Q=1900 lt/min
17.00 18.30:Cementato colonna 13"3/8
18.30 20.00:Sollevato Stinger a mt 270 circolato 5',estratto Stinger
20.00 24.00:W.O.C

10/05/88 MONTAGGIO BOP

da ore a ore
00.00 12.00:Rilasciato Casing OK.Sollevato Diverter e tagliato CSG.Salda
to flangia base 13"5/8 3000.Atteso raffreddamento.Test a 30
atm x 10' OK.
12.00 20.00:Montato BOP Stack Cameron doppio "U" 16"3/4 x 5000 + Cameron
singolo "U" 16"3/4 + Cameron "D" 16"3/4 x 5000.Collegato Kill
e Choke line sup. e inf. e comandi collegamenti idraulici.
Montato Tubo Pipa.Test ganasce cieche a 40 atm x 15' OK.
20.00 22.30:Montato Bit n.2 FDS 12"1/4 (nuovo) assemblando nuova BHA.
Test Teleco OK.
22.30 24.00:In corso Test BOP

11/05/88 TURBOPERFORAZIONE FASE 12"1/4

da ore a ore
00.00 01.30:BOP Test Bag e Rams Preventers a 40 atm x 15' OK.Kill e Choke
line e valves a 210 atm x 16' OK.Stand Pipe e Upper Kelly
Cock a 210 atm x 10' OK.
01.30 02.00:Scorrimento cavo.
02.00 02.30:Lavato CSG (da anelli di cemento) da mt 260 a mt 293.
02.30 03.00:Fresaggio cemento scarpa.
03.00 07.00:Perforazione da mt 300 a mt 411
07.00 15.00:Turboperforato da mt 411 a mt 713
15.00 15.30:Circolato per controllo foro.
15.30 17.00:Controllo foro in scarpa (mt 296) e ridisceso al fondo libera
mente.
17.00 18.30:Circolazione e controllo funzionalita' computer Teleco.
18.30 23.00:Turboperforato da mt 713 a mt 855
23.00 24.00:Circolato per condizionamento fango.

12/05/88 TURBOPERFORAZIONE E TUBAGGIO 9"5/8

da ore a ore

00.00 06.30:Turboperforato da mt 855 a mt 1010
 06.30 07.00:Circolato per condizionamento fango causa tappi di argilla.
 07.00 07.30:Turboperforato da mt 1010 a mt 1013
 07.30 08.30:Circolazione
 08.30 11.30:Wiper Trip in scarpa (con tentativi di pistonaggio lungo tutto il foro)"Pulito"Stab. (rotazione e circolazione)
 11.30 13.00:Ridisco Bit al fondo.
 13.00 14.30:Circolazione (e pulizia V.V. da tappi di argilla).
 14.30 16.30:Ritirato Bit in scarpa.
 16.30 17.30:Cambiate Upper Pipe Rams con 9"5/8 Rams e provati Seal Bonnet (500 PSI)
 17.30 19.30:Ultimata estrazione sdoppiando Dyna (stereable) e allentando connessioni BHA,Sleeve,Stab.
 19.30 20.00:Preparativi per tubaggio.
 20.00 24.00:In corso tubaggio.

13/05/88 CEMENTAZIONE 9"5/8

da ore a ore

00.00 01.00:Tubato colonna 9"5/8 scarpa a mt 1011.
 01.00 02.30:Circolazione (Q=2000 l/min ,P=84 atm) sino al ritorno pulito (dopo aver asportato tappi di argilla dallo V.V.)
 02.30 03.30:Cementato colonna 9"5/8.
 03.30 08.30:W.O.C. con 150 psi all'anulus (sceso a 0 in un'ora)
 08.30 16.30:Scollegato e sollevato BOP - incuneato colonna 9"5/8 con 70 ton M.D. - Tagliato e recuperato tubo di manovra - Montato corpo intermedio 13"3/8 x 3000 - 11" x 5000 -Test flangia a 110 atm x 15' OK.
 16.30 20.00:Montato BOP stack 16"3/4 x 5000.BOP test:ganasce cieche 70 atm x 15' OK.
 20.00 23.00:Sdoppiato DC 8"1/4,Dynadrill 7"3/4,MWD 8"1/4,Jar 8",Stabilizzatori 12"1/4.
 23.00 24.00:Sostituito ganasce sagomate 9"5/8 con 5"

14/05/88 TURBOPERFORAZIONE 8"1/2

da ore a ore

00.00 03.00:Eseguito test BOP: Anulare a 30/100 atm x 15' OK.Sagomate sup e inf. a 160 atm x 15' OK.-Kill e Choke line sup. e inf. + Kelly Cock+Stand Pipe a 10 atm x 10' OK
 03.00 04.30:Scorrimento e taglio cavo.
 04.30 07.30:Disco Bit n.3 FDS 8"1/2 (nuovo)assemblando nuova BHA con MWD (resistivita') a mt 985
 07.30 10.00:Fresati tappi,cemento,collare,cemento,scarpa da mt 985 a mt 1013
 10.00 10.30:Perforato da mt 1013 a mt 1032.Sospeso per avaria pompe.
 10.30 17.00:Ripristinata aspirazione pompa n.1 - Sostituito Blender Pompa n.2 - Collaudate per 15' OK.
 17.00 24.00:Turboperforato da mt 1032 a mt 1153

15/05/88 TURBOPERFORAZIONE 8"1/2

da ore a ore

00.00 06.15:Turboperforato da mt 1153 a mt 1294.Sospeso per continuo scarso avanzamento.
 06.15 06.30:Circolazione
 06.30 10.00:Estratto Bit n.3 (con Kill Line causa rottura "Mission" Trip Tank)
 10.00 12.00:Disco Bit n.4 con stessa BHA in scarpa.

12.00 12.30:Scorrimento cavo.
 12.30 13.00:Completata discesa al fondo.
 13.00 24.00:Turboperforato da mt 1294 a mt 1552.

16/05/88 TURBOPERFORAZIONE 8"1/2

da ore a ore
 00.00 05.30:Turboperforato da mt 1552 a mt 1693 (registrando resistività)
 05.30 06.00:Circolato per controllo foro.
 06.00 08.00:Controllo foro a mt 1235.Ridisceso al fondo liberamente
 08.00 23.00:Turboperforato da mt 1693 a mt 2063.Registrato resistività
 23.00 24.00:In corso circolazione per controllo foro.

17/05/88 LOG ELETTRICI

da ore a ore
 00.00 00.30:Ultimato circolazione per controllo foro.
 00.30 03.30:Controllo foro in scarpa (mt 1011)
 03.30 04.00:Scorrimento cavo
 04.00 05.30:Ridisceso al fondo liberamente.
 05.30 07.30:Circolato per log
 07.30 12.30:Estratto Bit n.4 (controllo statico in scarpa).Sdoppiato MND
 Monel,Turbina.
 12.30 24.00:Rig UP Schlumberger.In corso registrazioni Log

18/05/88 LOG ELETTRICI

da ore a ore
 00.00 05.30:Ultimato registrazione Log.
 05.30 07.30:Disceso Bit n.4 al fondo per controllo foro e circolazione
 prima degli RFT (mt 1500)
 07.30 08.30:Circolato
 08.30 12.00:Estratto Bit con controllo statico in scarpa x 15' OK
 12.00 13.30:Rig UP Schlumberger.
 13.30 21.30:Eseguiti RFT da mt 1583 a mt 2028.
 21.30 22.00:Rig Down Schlumberger
 22.00 24.00:In corso discesa Bit al fondo per candelata finale.

19/05/88 TUBAGGIO E CEMENTAZIONE 7"

da ore a ore
 00.00 00.30:Ultimata discesa Bit al fondo.
 00.30 02.30:Circolato
 02.30 04.30:Ritirato Bit in scarpa allentando connessioni Drill Pipe
 04.30 06.00:Controllo statico x 15' OK Scorrimento cavo.Sostituito Upper
 Pipe Rams con Casing Rams.Test Seal Bonnet con 500 psi OK.
 06.00 09.30:Estratto Bit n.4 allentando DP e sdoppiando BHA.
 09.30 10.00:Preparativi per discesa CSG.
 10.00 18.00:Tubato colonna 7".Scarpa a mt 2061.
 18.00 19.30:Circolato
 19.30 21.00:Pompato 14,5 m3 di fango a 1,55 kg/lt seguiti da 1 m" di H2O
 Cementato colonna 7".
 21.00 24.00:W.O.C.

20/05/88 COMPLETATA TESTA POZZO

da ore a ore
 00.00 05.00:W.O.C.
 05.00 06.00:Sollevati B.O.P.
 06.00 07.30:Incuneato CSG con 80 ton (residuo fine cementazione).Tagliato
 e recuperato tubo di manovra.
 07.30 10.00:Recuperato B.O.P 16"3/4 x 5000 Riser e Adapter
 10.00 13.00:Inflangiato con Spool 11" x 5000 - 7"1/16 x 5000 .Test a 160
 atm x 10' OK

13.00 22.00:Disceso string di TBG 2"7/8 VAM a mt 1007 (n.107 giunti).
 Montato cappellotto 7"1/16 x 5000 - 2"7/16 x 5000 + Master
 Valve 2"9/16 x 5000 ed eseguito test di tenuta a 50 atm OK

22.00 24.00:In corso sdoppiaggio aste (DP e HW)

N.B. A fondo pozzo si trovano n.4 TBG 2"7/8 VAM caduti accidentalmente.Top
 TBG a mt 1984

21/05/88 SDOPPIAGGIO ASTE

Da ore a ore:

00.00 12.00:Ultimato sdoppiaggio aste e preparativi skiddaggio.

4.10 SCALPELLI

=====

Fr.	Disc.	S c a l p e l l i o			Intervallo		Ore	WOB	RPM
		Cd.Uso	Tipo	Diametro			Lavoro		
1	1	A	S33S	17"1/2	110.0	300.0	8.30	3.0	114
1	2	ID	FDS	12"1/4	300.0	1013.0	23.30	7.5	70
1	3	ID	FDS	8"1/2	1013.0	1294.0	13.45	7.5	60
1	4	D	J1	"	1294.0	2063.0	31.30	9.0	70

4.11 COMPOSIZIONE BATTERIA DI PERFORAZIONE

=====

Discesa N. : 1 1
 Intervallo : 110.0 - 300.0

Composizione

N. Attrezzi	Attrezzo	Tipo	Diametro Esterno	Diametro Interno
1	BIT	S33S	17"1/2	
1	NB	....	9"3/8	
1	MDC	....	7"15/16	2"7/16
1	STAB	....	7"3/4	2"15/16
2	DC	....	8"1/4	2"7/8
1	STAB	NRSL	7"3/4	2"15/16
6	DC	....	8"1/4	2"7/8
1	XO	....	8"1/4	
15	HWDP	....	5"	

Discesa N. : 2 2
 Intervallo : 300.0 - 1013.0

Composizione

N. Attrezzi	Attrezzo	Tipo	Diametro Esterno	Diametro Interno
1	BIT	FDS	12"1/4	
1	TURB	....	9"5/8	

N. Attrezzi	Attrezzo	Tipo	Diametro Esterno	Diametro Interno
1	XO	....	7"3/4	2"1/2
1	SHDC	....	8"	3"
1	MSDC	....	8"	2"7/8
1	STAB	NRSL	8"	2"7/8
1	XO	....	8"1/4	2"3/4
1	MWD	....	8"1/4	
1	STAB	NRSL	8"	2"3/4
1	BS	....	8"	2"7/8
1	MDC	....	8"	2"7/8
1	DC	SP	8"1/4	2"7/8
1	STAB	NRSL	8"	2"7/8
4	DC	SP	8"1/4	2"7/8
1	JAR	MEC	8"	2"7/8
1	XO	....		
15	HWDP	....	5"	

Discesa N. : 3 4
Intervallo : 1013.0 - 2063.0

Composizione

N. Attrezzi	Attrezzo	Tipo	Diametro Esterno	Diametro Interno
1	BIT	FDS	8"1/2	
1	TURB	....	6"1/2	
1	XO	....	6"1/4	2"1/4
1	XO	....	6"1/4	2"3/4
1	MSDC	....	6"1/2	2"3/4
1	STAB	IB	6"1/2	2"3/4
1	XO	....	6"7/12	2"13/16
1	XO	....	6"3/4	2"3/4
1	MWD	....	6"3/4	
1	XO	....	6"5/16	2"3/4
1	STAB	IB	6"1/2	2"3/4
1	MDC	....	6"1/4	2"3/4
2	DC	SP	6"1/2	2"13/16
1	STAB	NRSL	6"1/2	2"3/4
3	DC	SP	6"1/2	2"13/16
1	JAR	MEC	6"1/4	2"3/4
1	DC	SP	6"1/2	2"13/16
1	XO	....	6"7/16	2"13/16
15	HWDP		5"	

4.12 MISURE DI VERTICALITA' E DEVIAZIONI

Foro Nr.	Profondita Misurata	Profondita Verticale	Inclinaz. Foro	Direzione Geografica	Scostamento	
					Metri	Azimut
1	192.0	192.0	2.00	N13*00W	3.3	N13*00W
1	220.0	219.9	2.00	N35*00E	4.2	N07*77W
1	248.0	247.9	1.75	N10*00W	5.1	N04*20W
1	286.0	285.9	1.50	N04*00E	6.1	N04*02W
1	326.0	325.9	1.20	N05*40W	7.1	N03*56W
1	411.0	410.9	1.00	N07*20W	8.7	N04*06W
1	496.0	495.9	1.10	N04*70W	10.3	N04*35W
1	582.0	581.8	1.50	N18*50E	12.2	N02*48W
1	667.0	666.8	1.80	N23*80E	14.5	N01*42E
1	723.0	722.8	3.00	N64*20E	16.2	N07*11E
1	781.0	780.5	8.00	S66*90E	17.5	N25*05E
1	837.0	835.8	9.20	S72*60E	20.0	N49*69E
1	894.0	891.8	12.60	S72*20E	27.3	N69*22E
1	951.0	946.9	17.00	S72*90E	39.8	N82*31E
1	995.0	989.0	17.10	S71*90E	51.7	N88*42E
1	1047.0	1038.7	17.10	S71*20E	66.3	S87*05E
1	1104.0	1093.1	17.50	S70*50E	82.7	S83*77E
1	1161.0	1147.4	17.80	S68*40E	99.5	S81*31E
1	1218.0	1201.5	18.80	S70*80E	117.1	S79*53E
1	1275.0	1255.5	18.40	S70*80E	135.1	S78*36E
1	1332.0	1309.6	18.30	S70*50E	152.9	S77*46E
1	1389.0	1363.7	18.60	S69*10E	170.8	S76*65E
1	1446.0	1417.9	17.40	S68*70E	188.3	S75*93E
1	1504.0	1473.3	17.00	S70*10E	205.3	S75*39E
1	1561.0	1528.2	14.20	S72*60E	220.6	S75*10E
1	1618.0	1583.9	10.60	S76*10E	232.9	S75*06E
1	1675.0	1640.3	5.60	N89*50E	240.8	S75*31E
1	1732.0	1697.1	3.40	S83*10E	245.2	S75*52E
1	1789.0	1754.1	0.80	N35*00E	246.9	S75*77E
1	1846.0	1811.1	0.50	N29*70W	246.8	S75*91E
1	1903.0	1868.1	0.60	N40*60W	246.4	S75*99E
1	1960.0	1925.1	0.90	N46*90W	245.7	S76*08E
1	2016.0	1981.1	1.00	N31*10W	245.0	S76*22E
1	2045.0	2010.1	1.10	S06*20W	244.6	S76*17E

4.13 FANGO DI PERFORAZIONE

Nr. Fr.	Top	Bottom	Tipo	Densita'	P.V.	Cloruri	Olio%
1	100.0	300.0	AR	1130		7.4	
1	300.0	600.0	LS	1190	18	8.7	
1	600.0	1013.0	LS	1200	17	8.5	
1	1013.0	1294.0	LS	1320	12	7.8	
1	1294.0	1693.0	LS	1350	15	5.8	
1	1693.0	2063.0	LS	1370	14	5.8	

1 JUN 1988 @ 11:11

COMPAGNIA: AGIP
 POZZO: CLARA OVEST 10 DIR
 DIREZIONE PROPOSTA: S 75 E



DATA DRILL

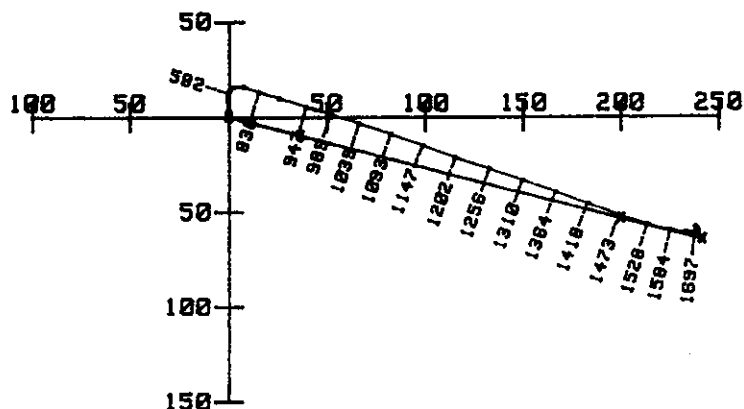
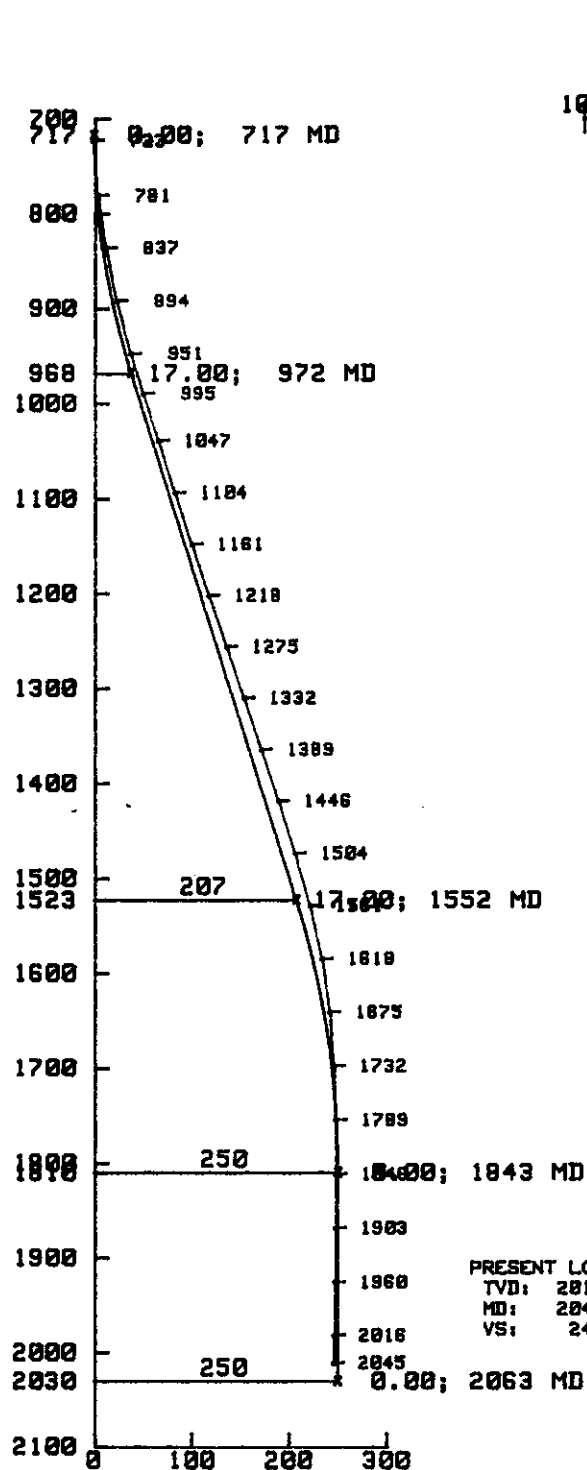
Division of Smith International, Inc.

VERTICAL PLANE

SCALE: 100 METERS/DIVISION

HORIZONTAL PLANE

SCALE: 50 METERS/DIVISION



PRESENT LOCATION:
 TVD: 2010.06 M
 MD: 2045.00 M
 VS: 244.23 M

VERTICAL SECTION PLANE: S 75.00 E

4.14 RIVESTIMENTI

Nr.Fr.	Riv.Nr.	Diametro	Top	Bottom	Grado Acc.	Peso (LB/FT)	Filetto
1	2	13"3/8	14.6	296.0	J55	61.0	ANTARES
1	3	9"5/8	14.6	525.0	J55	43.5	ANTARES
1	3	9"5/8	525.0	1011.0	J55	40.0	ANTARES
1	4	7"	14.6	1380.0	J55	23.0	ANTARES
1	4	7"	1380.0	2061.0	N80	23.0	ANTARES

4.15 CEMENTAZIONI

- Foro N. : 1
 Rivestimento N. : 2
 Diametro Riv. : 13"3/8

Cementazione n. : 1
 Stadio n. : 1
 D.V. a : 0.0
 Risal.Teorica : 14.6

Composizione malta :

N.	Elemento	Descrizione	Quantita'
1	Cemento	Geocem "G" (Densita' malta 1520 g/l)	20.1 t.
1	Additivo	Attapulgit	2.0 %
2	Cemento	Geocem "G" (Densita' malta 1900 g/l)	18.5 t.

Controllo Cementaz. : Nessuno

- Foro N. : 1
 Rivestimento N. : 3
 Diametro Riv. : 9"5/8

Cementazione n. : 1
 Stadio n. : 1
 D.V. a : 0.0
 Risal.Teorica : 600.0

Composizione malta :

N.	Elemento	Descrizione	Quantita'
1	Cemento	Geocem "G" (Densita' malta 1950 g/l)	27.5 t.

4.18 PERFORAZIONE RIVESTIMENTI

=====

- Foro n. : 1
Rivestimento n. : 4
Diametro : 7"
Tipo Rivestimento : Casing

Intervallo spari : 1881.0 - 1883.0
N. totale colpi : 79
N. colpi/piede : 12
Tipo Carica : HYPERJET II D.P
Tipo e diam fucile : H.S.D. 5"
Scopo : PRODUZIONE
Status spari : Aperti

Intervallo spari : 1816.0 - 1818.0
N. totale colpi : 79
N. colpi/piede : 12
Tipo Carica : HYPERJET II D.P
Tipo e diam fucile : H.S.D. 5"
Scopo : PRODUZIONE
Status spari : Aperti

Intervallo spari : 1819.0 - 1823.0
N. totale colpi :
N. colpi/piede : 12
Tipo Carica : HYPERJET II D.P
Tipo e diam fucile : H.S.D. 5"
Scopo : PRODUZIONE
Status spari : Aperti

Intervallo spari : 1826.0 - 1830.0
N. totale colpi :
N. colpi/piede : 12
Tipo Carica : HYPERJET II D.P
Tipo e diam fucile : H.S.D. 5"
Scopo : PRODUZIONE
Status spari : Aperti

Intervallo spari : 1684.5 - 1686.0
N. totale colpi : 59
N. colpi/piede : 12
Tipo Carica : HYPERJET II D.P
Tipo e diam fucile : H.S.D. 5"
Scopo : PRODUZIONE
Status spari : Aperti

Intervallo spari : 1693.0 - 1694.0
N. totale colpi : 39
N. colpi/piede : 12
Tipo Carica : HYPERJET II D.P
Tipo e diam fucile : H.S.D. 5"
Scopo : PRODUZIONE
Status spari : Aperti

Intervallo spari : 1638.0 - 1639.0
N. totale colpi : 39
N. colpi/piede : 12
Tipo Carica : HYPERJET II D.P
Tipo e diam fucile : H.S.D. 5"
Scopo : PRODUZIONE
Status spari : Aperti

Intervallo spari : 1645.5 - 1650.0
N. totale colpi :
N. colpi/piede : 12
Tipo Carica : HYPERJET II D.P
Tipo e diam fucile : H.S.D. 5"
Scopo : PRODUZIONE
Status spari : Aperti

Intervallo spari : 1612.5 - 1613.5
N. totale colpi : 39
N. colpi/piede : 12
Tipo Carica : HYPERJET II D.P
Tipo e diam fucile : H.S.D. 5"
Scopo : PRODUZIONE
Status spari : Aperti

Intervallo spari : 1618.5 - 1619.5
N. totale colpi : 39
N. colpi/piede : 12
Tipo Carica : HYPERJET II D.P
Tipo e diam fucile : H.S.D. 5"
Scopo : PRODUZIONE
Status spari : Aperti

Intervallo spari : 1622.5 - 1623.5
N. totale colpi : 39
N. colpi/piede : 12
Tipo Carica : HYPERJET II D.P
Tipo e diam fucile : H.S.D. 5"
Scopo : PRODUZIONE
Status spari : Aperti

Intervallo spari : 1544.0 - 1547.0
N. totale colpi :
N. colpi/piede : 12
Tipo Carica : HYPERJET II D.P
Tipo e diam fucile : H.S.D. 5"
Scopo : PRODUZIONE
Status spari : Aperti

Intervallo spari : 1553.0 - 1558.0
N. totale colpi :
N. colpi/piede : 12
Tipo Carica : HYPERJET II D.P
Tipo e diam fucile : H.S.D. 5"
Scopo : PRODUZIONE
Status spari : Aperti

4.19 TAPPI

=====

Nr. Foro	Nr. Tappo	Tipo Tappo	Top	Bottom	Classe Cemento	Q. ta'	Scopo del Tappo
1	1	CEMENTO	2022.0	2061.0	"G"	0.0	CEMENTAZIONE

4.20 SQUEEZING

=====

Nessuno

4.21 BRIDGE PLUG

=====

Nessuno

4.23 PERDITE ED ASSORBIMENTI

=====

Fr. Top	Bottom	Evento	MC	Note
1	144.0	1013.0 ASSORBIMENTI	4	Durante cementazione 7"5/8

FINAL WELL REPORT

AGIP SNOR/DEUTSCHE SHELL

CLARA OVEST WELLS : 4 - 11 DIR

OFFSHORE ITALY

NOVEMBER - MAY 1988

The information, interpretations, recommendations, or opinions contained herein are advisory only any may be rejected. Consultant does not warrant their accuracy or correctness. Nothing contained herein shall be deemed to be inconsistent with, nor expand, modify or alter consultants obligation of performance as provided for in written agreement between the parties, or, if none, in Consultants most recent price list.

EXPLORATION LOGGING ITALIA S.R.L

MAY 1988

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5. CLARA OVEST 6 DIR
6. CLARA OVEST 8 DIR
7. CLARA OVEST 11 DIR, 11A DIR, 11A DIR 2ND WELL - INTRODUCTION
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9. CLARA OVEST 11A DIR
10. CLARA OVEST 11A DIR 2ND WELL
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INTRODUCTION

Company : Agip Snor (51%)
Partner : Deutsche Shell (49%)
Contractor : Foramer
Rig : Cormorant (Tender assisted rig)
Nat 110 VE
Location : Adriatic Sea, Offshore Italy
Position : Latitude 43° 49' 40.994"
Longitude 13° 42' 42.013"
Field : Clara (west)
RKB to Sea level : 28.29 m
Sea Water Depth : 72 m
RKB to Sea Bed : 100.29 m
Rig on Location : 21st October 1987
Exploration Logging Italia SRL
Unit # : 239
Logging Crew : M Sommers L Pazzaglia
L Nori A Ball
D Masters E Saperdi
P Limongi G Johnson
A Andreou

WELL SUMMARY

CLARA OVEST 7 DIR

Spud : 15.00 hrs - 15th November 1987

Finish drilling : 10.00 hrs - 7th December 1987

KOP : 360 m

TD : 1990 m (measured) 1871.6 m (vertical)

Completion status : Provisionally completed prior to production.

Completion date : 18th December 1987 (15.00 hrs)

Co-ordinates (TD) : Latitude 43° 49' 38.750"

Longitude 13° 42' 59.631"

CLARA OVEST 4 DIR

Spud : 15:30 hrs - 20th December 1987

Finish drilling : 08:30 hrs - 8th March 1988

KOP : 167 m

TD : 2188 m (measured) 1760.0 (vertical)

Completion status : As above.

Completion date : 15th March 1988 (15:00 hrs)

Co-ordinates (TD) : Latitude 43° 49' 53.660"

Longitude 13° 42' 00.801"

CLARA OVEST 9 DIR

Spud : 15:30 hrs - 23rd december 1987

Finish drilling : 23:30 hrs - 11th February 1988

KOP : 200 m

TD : 2015 m (measured) 1862.0 m (vertical)

Completion status : As above.

Completion date : 15th February 1988 (11.00 hrs)

Co-ordinates (TD) : Latitude 43° 49' 44.376"

Longitude 13° 43' 08.446"

CLARA OVEST 5 DIR

Spud : 08:30 hrs - 26th December 1987

Finish drilling : 23:30 hrs - 21st January 1988

KOP : 205 m

TD : 2145 m (measured) 1931.0 m (vertical)

Completion status : As above.

Completion date : 28th January 1988 (18:00 hrs)

Co-ordinates (TD) : Latitude 43° 49' 47.631"

Longitude 13° 42' 12.039"

CLARA OVEST 6 DIR

Spud : 22:30 hrs - 27th December 1987

Finish Drilling : 02:30 hrs - 10th January 1988

KOP : 801 m

TD : 1853 m (measured) 1729.0 m (vertical)

Completion status : As above.

Completion date : 31st January 1988 (14:00 hrs)

Co-ordinates (TD) : Latitude 43° 49' 44.546"

Longitude 13° 49' 22.542"

CLARA OVEST 8 DIR

Spud : 19:00 hrs - 29th December 1987

Finish drilling : 02:30 hrs - 26th February 1988

KOP : 321 m

TD : 2240 m (measured) 2154.0 m (vertical)

Completion status : As above.

Completion date : 1st March 1988 (14:00 hrs)

Co-ordinates (TD) : Latitude 43° 49' 43.027"

Longitude 13° 42' 59.683"

CLARA OVEST 11 DIR

Spud : 10.00 hrs - 16th March 1988

Finish drilling : 19:00 hrs - 29th March 1988

KOP : 170 m

TD : 2674 m (measured) 1811.0 m (vertical)

Completion status : Plug and abandon.

Completion date : 6th April 1988 (24:00 hrs)

Co-ordinates (TD) : Data unavailable.

CLARA OVEST 11A DIR

Spud : 11:00 hrs - 7th April 1988

Finish drilling : 08.30 hrs - 17th April 1988

Side track : 308 m

TD : 2411 m (measured) 2100.0 m (vertical)

Completion status : Plug and abandon.

Completion date : 30th April 1988 (05:00 hrs)

Co-ordinates (TD) : Data unavailable.

CLARA OVEST 11A DIR 2ND HOLE (SIDE TRACK)

Spud : 11:00 hrs - 30th April 1988

Finish drilling : 23:30 hrs - 2nd May 1988

Side track : 1708 m

TD : 2371 m (measured) 2052 m (vertical)

Completion status : Provisionally completed prior to production.

Completion date : 8th May 1988 (08:00 hrs)

Co-ordinates : Data unavailable.

CLARA OVEST 10 DIR

Spud : 21:30 hrs - 8th May 1988

Finish drilling : 23:00 hrs - 16th May 1988

KOP : 713 m

TD : 2063 m (measured) 2083 m (vertical)

Completion status : As above.

Completion date : 21st May 1988 (12:00 hrs)

Co-ordinates : Data unavailable.

PROGNOSIS

CLARA OVEST 4 DIR - 11 DIR (INC. DIR A AND 11 DIR A 2°F)

The Clara Ovest field is located in the Adriatic Sea, about 28 km from Ancona. The sea bed here is at an average depth of 72 m. Three wells had previously been drilled in this area, these being Clara Ovest 1 (1971), Clara Ovest 2 (1979), and Clara Ovest 3 (1984). The first of these proved to be dry, but the other two both showed ten levels of mineralisation.

Interpretation of data from seismic surveys and the previous three wells highlighted an anticlinal structure with an axis striking WNW - ESE, the limits of which are defined by a series of normal faults rising towards the SE. There is also another normal fault which runs in the opposite direction to the general trend. Due to these faults, the structure is divided into at least 4 blocks (A, B, C and D). Of these, block A (where Clara Ovest 3 was drilled) has the greatest GOIP volume. It is also possible that block D has a consistent GOIP volume in the mid-upper part of the structure, where no well has as yet been drilled. Clara Ovest 2 did drill into block D, but only into the lowest part of the structure after having drilled through the other three blocks in the order B, A and C. Based on this interpretation, it was initially decided to develop this field by drilling four wells, or six should the first well indicate the possibility of pay zones in the mid-upper section of block D.

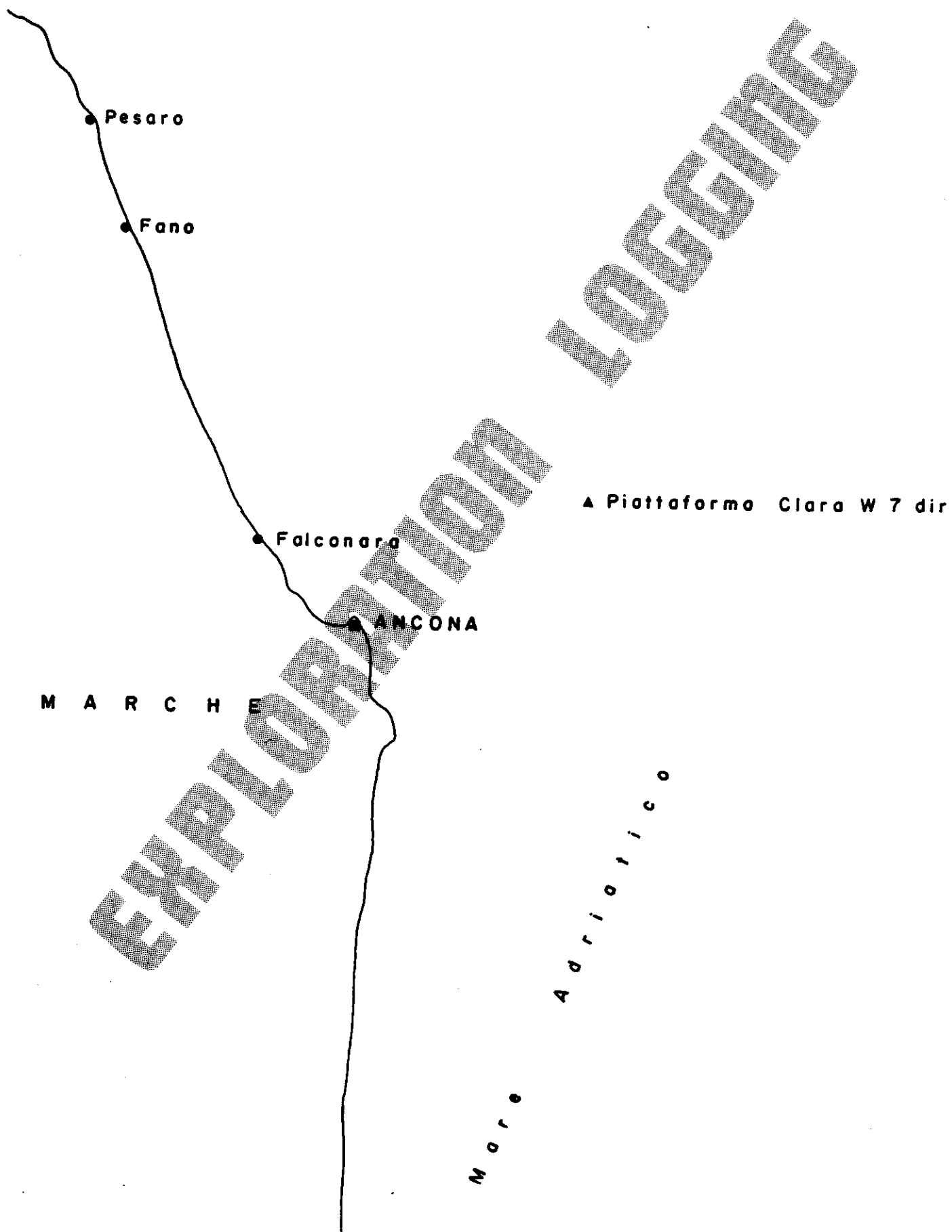
Wells 4, 5, 6 and 7 were to be drilled regardless of what information they provided about other possible areas of mineralisation, with the provision of drilling two further wells (8 and 9) depending upon the outcome of well 7, (that which was to investigate the mid upper part of block D). Two extra slots were also provided, allowing for the possibility of drilling

other wells if necessary. In the end, all the available slots were utilised, wells 10 and 11 being drilled as well (and well 11 being sidetracked twice).

EXPLORATION LOGGING

LOCATION MAP

WELL: Piattaforma Clara W 7 dir



SECTION 1

CLARA OVEST 7 DIR

CLARA OVEST 7 DIR

Logging commenced from spud on November 15th 1987 with a sample interval of 10 m and a calcimetry interval of 20 m for the duration of the well. The kick off point was at 360 m. This was, in a sense, the most important of the initial four wells, as the drilling of at least two further wells depended on its outcome. The well was drilled in a total of 23 days. The total depth (measured) was 1990 m.

150 m - 340 m

This section consisted of clay with interbeds of peat and loose quartz sands.

The clay was light to medium grey, soft, amorphous, fairly soluble, plastic and moderately calcareous. The peat, which was found predominantly in the upper part of the interval was light to dark brown, or black, and was firm and woody. There were also abundant shell fragments (both bivalve and gastropod) and bryozoans throughout this section, but especially in the upper part. Traces of sand were observed in all samples taken over this section, occasionally constituting as much as 10% of the total sample. This sand was generally very fine to fine loose quartz, clear or white and translucent, and generally subangular to subrounded.

Rate of penetration (ROP) was in the range of 0.1 - 10 min/m. Total gas values generally averaged 0.2%, increasing to 0.4% towards the bottom of the interval. Only methane was recorded.

340 m - 1990 m

This section consisted of clay with some thin sand stringers. The clay was

light to medium grey, soft, sticky, soluble, amorphous and locally silty. It also contained traces of pyrite, and some forams, the latter increasing in frequency below 1000 m.

The sand was clear to milky-white translucent loose quartz, occasionally with an amber staining. It was very fine to fine, subangular to subrounded, and moderately sorted. Seen in trace quantities throughout the interval, it was only rarely present as more than 5% of the total sample.

The ROP over this interval varied considerably due to a variety of reasons, only some of which related directly to the nature of the formation. The average ROP over the initial part of this section was generally in the range 1 - 3 min/m, occasionally slowing to around 5 min/m due to factors such as clay "balling up" on the bit, or speeding up to 0.5 min/m over rare intervals of never more than 1 m in thickness, representing sand stringers (most of which were well under 1 m in thickness). The average ROP decreased to around 4 - 5 min/m with depth, indicating an increasing degree of induration of the formation. Drilling breaks due to sand over the last 600 m of the section tended to be in the range of 1 - 3 min/m, and were of increasing frequency and duration. This suggested that a lot more sand was present over this interval than was observed in the samples, this probably being due to the fact that the sands here were so fine that they generally passed through the shale shaker screens.

Total gas figures were generally in the range from 0.1% to 0.4% above 1670 m, with two small peaks of 0.6% (at 1507 m and 1624 m respectively). From 1670 m onwards a series of 19 peaks in excess of 1% were observed, the largest of which were 7.8% at 1969 m and 4% at 1910 m and 1676 m. Nearly all the gas recorded was methane, although some very small traces of ethane

and propane were observed in the larger shows.

EXPLORATION LOGGING

ELECTRIC LOGS

The following E-Logs were run by Schlumberger:

ISF - SLS - SP

ISF : 306 m - 1010 m, 1005 m - 1989 m

SLS : 306 m - 1000 m, 1005 m - 1978 m

SP : 306 m - 1012 m, 1005 m - 1981 m

SHDT : 306 m - 1010 m

LDL - CNL - EATT

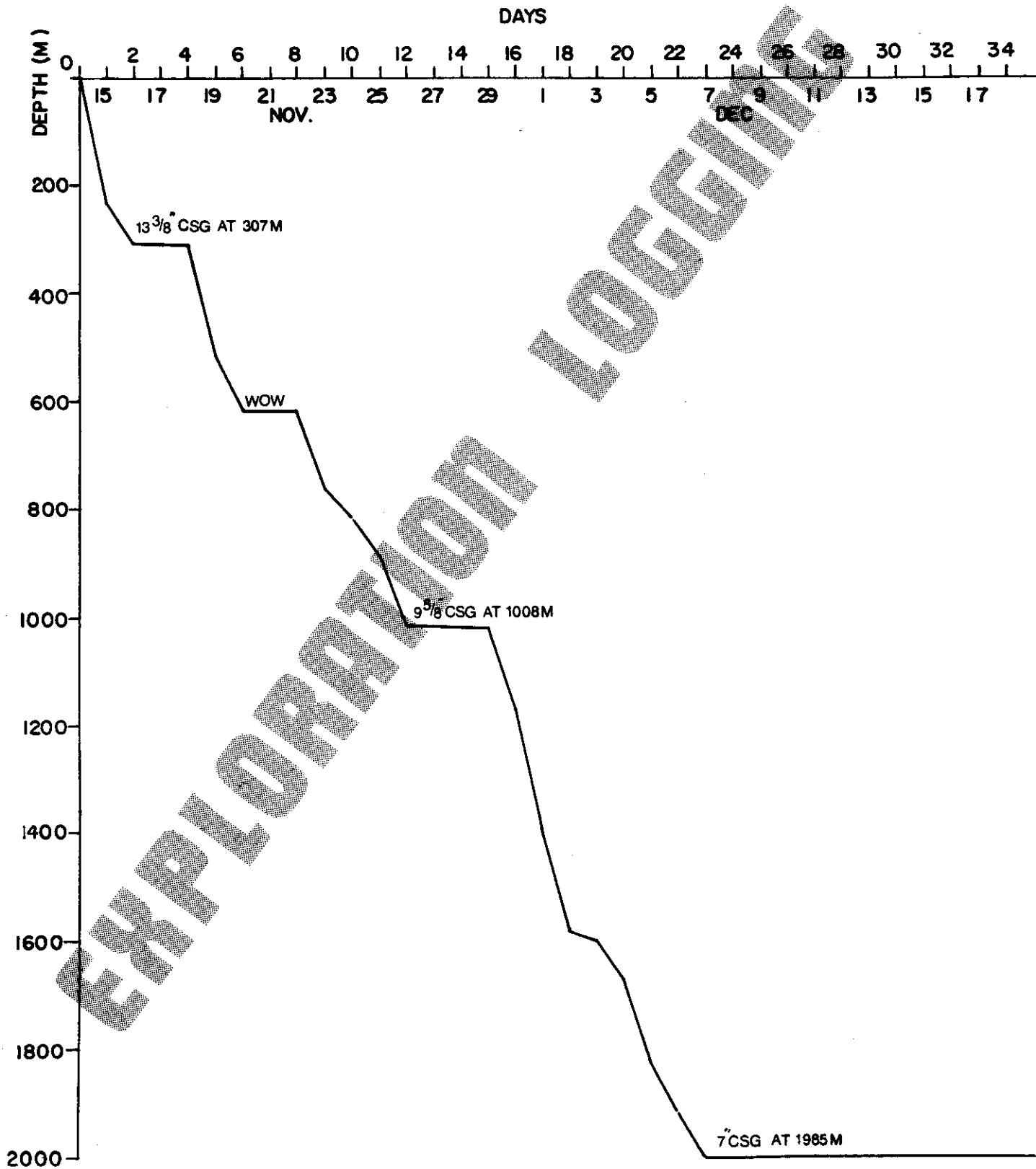
LDL : 1550 m - 1990 m

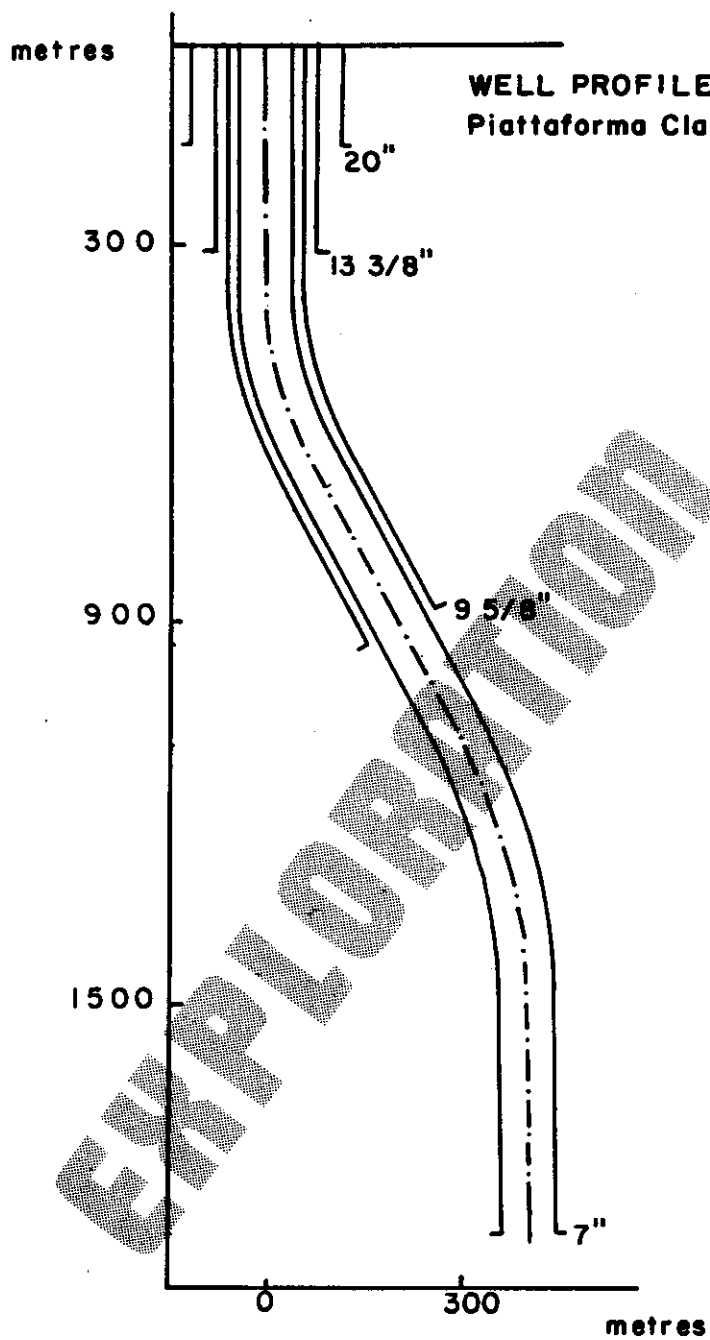
CNL : 1550 m - 1977 m

EATT : 1550 m - 1985 m

CLARA OVEST 7 (DIR.)

DRILLING PROGRESS CHART (AT MIDNIGHT DEPTHS)





SECTION 2

CLARA OVEST 4 DIR

CLARA OVEST 4 DIR

This well was drilled in two phases. The first section (17.5") was spudded on December 20th 1987 and completed on December 22nd 1987. The second phase commenced on March 3rd 1988 and was completed on March 8th 1988. The sample interval was 10 m and the calcimetry interval 20 m throughout. Total depth (measured) was 2188 m. The kick off point was 167 m.

120 m - 180 m

This section consisted of clay with some interbeds of peat and loose quartz sands.

The formation over this interval was as in Clara Ovest 7.

ROP in this section averaged 0.5 min/m, with occasional slower intervals probably due to clay "balling up" on the bit rather than to any significant change in the formation.

Total gas readings throughout were less than 0.1% except for a small peak of 0.24% at 120 m.

180 m - 1780 m

This section consisted of clay with traces of sand.

The clay was light to medium grey, soft, soluble, sticky, amorphous, locally silty and moderately calcareous. It contained traces of pyrite, forams, and some shell fragments (mostly gastropod with some bivalves). The sand was clear to milky-white translucent loose quartz, occasionally with an amber staining. It was very fine to fine, subangular to subrounded and moderately sorted, and contained mica flakes. It was generally seen in

quantities of less than 5% of the total sample.

ROP varied more due to varying drilling parameters than due to formation changes, being slower during orientating (with the turbine alone) than during normal drilling (turbine plus top-drive). It was also seen to decrease with depth, averaging 0.25 - 1.5 min/m in the upper part of the interval and slowing down to 1.5 - 3 min/m in the lower part.

Gas was not observed in significant quantities in this section, being mostly in the range 0.1 - 0.25%, except for peaks at 540 m (0.6%), 572 m (0.7%), 668 m (0.7%), 886 m (0.9%), and 1480 m (1.2%). Methane was the only gas recorded.

1780 m - 2188 m

This section consisted of clay with thin interbeds of sand.

The clay was more or less as in the preceding interval, becoming slightly less soluble and more indurated with depth. The sand too was generally as above, but was seen to become medium grained in part, although it was still predominantly fine to medium grained. As in well 7, this sand was almost certainly present in quantities greater than were observed in the samples, of which it never visibly constituted more than 10%.

ROP varied from 0.75 - 4 min/m, the faster intervals corresponding to sand beds which were rarely seen to be more than 1 m in thick.

Total gas values averaged 0.4 - 0.5% down to 2092 m where they began to decrease to 0.2% at 2188 m (TD). The principal peaks seen were at 1940 m (2.2%), 1982 m (2.8%), 2010 m (1.4%), 2104 m (1.9%), 2037 m (2.9%), 2047 m (1.96%), 2061 m (3.08%), and 2090 m (2.3%). The only gas seen to be present

was methane.

EXPLORATION LOGGING

ELECTRIC LOGS

The following E-Logs were run by Schlumberger:

DITE - MSFL - SLS - SP

DITE : 1142 m - 2185 m

MSFL : 1142 m - 2177 m

SLS : 1142 m - 2168 m

SP : 1142 m - 2183.7 m

CNL - EPT - LDL

CNL : 1800 m - 2168 m

EPT : 1800 m - 2175 m

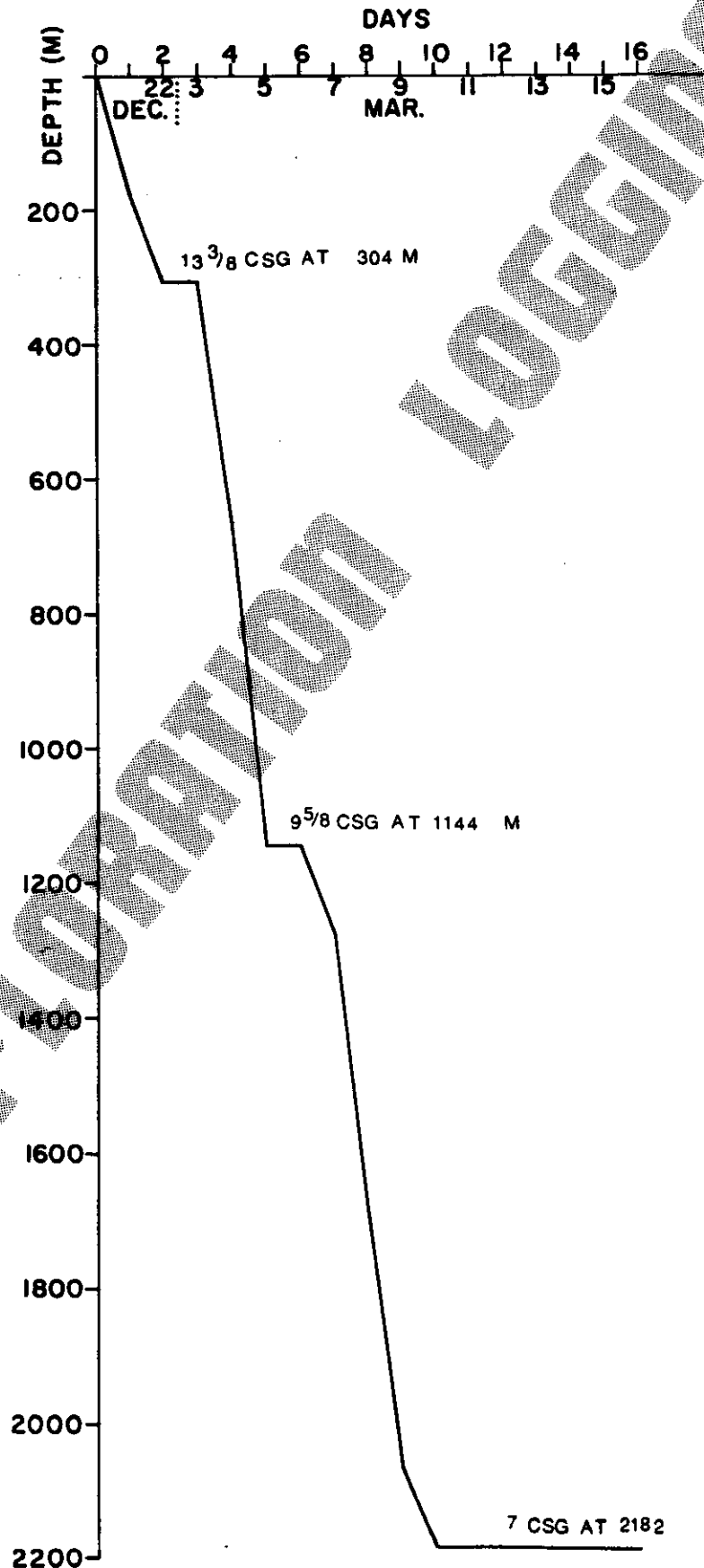
LDL : 1800 m - 2181 m

SHDT : 1142 m - 2178 m

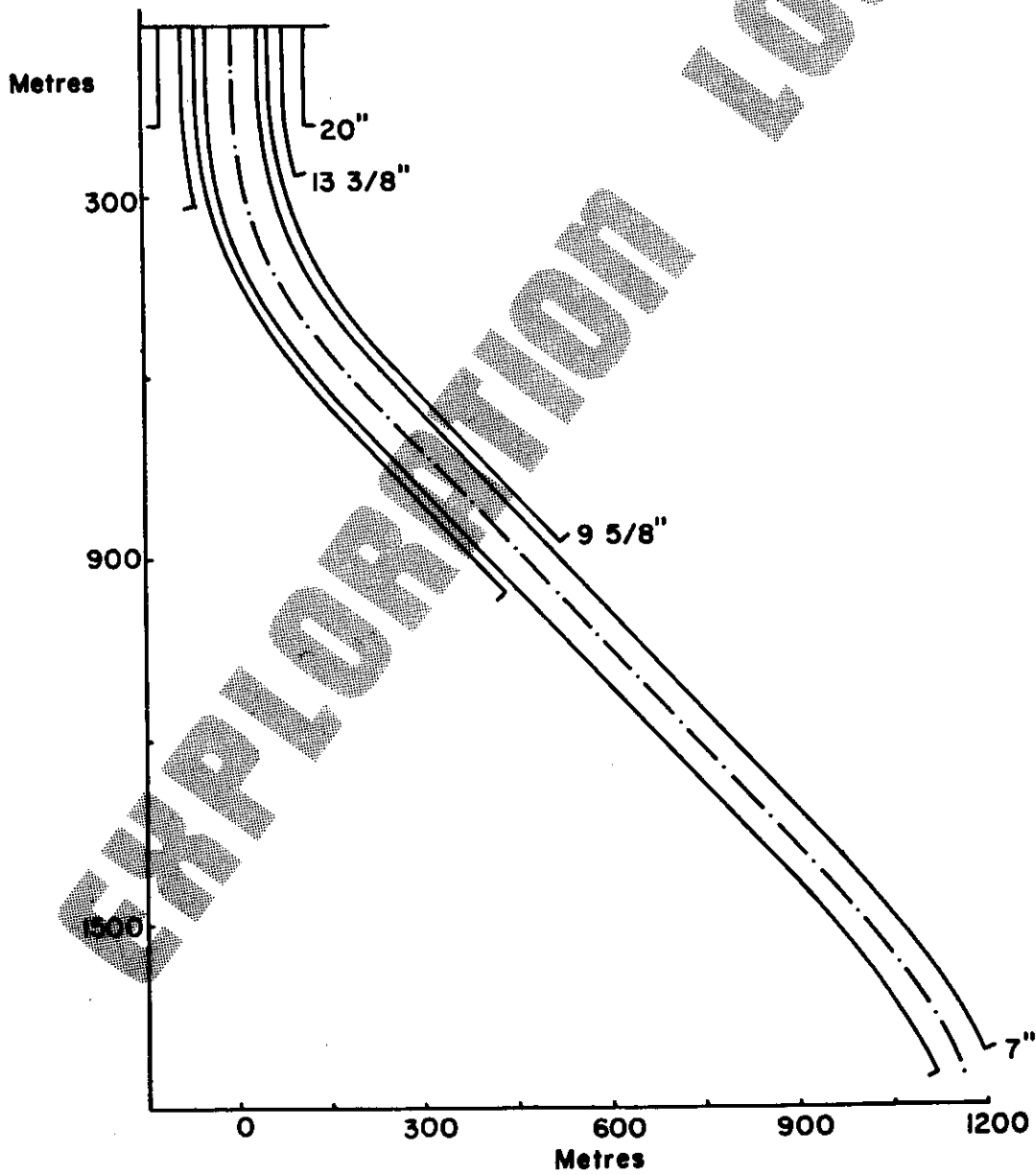
CBL/VDL : 350 m - 1139 m

CLARA OVEST 4 (DIR.)

DRILLING PROGRESS CHART (AT MIDNIGHT DEPTHS)



WELL PROFILE
Piattaforma Clara Ovest 4



SECTION 3

CLARA OVEST 9 DIR

CLARA OVEST 9 DIR

This well was drilled in two phases. The first section (17.5") was spudded on December 23rd 1987 and completed on December 29th 1987. The second phase began on February 1st 1988 and was completed on February 12th 1988. Total depth (measured) was 2015 m. The sample interval was 10 m and the calcimetry interval 20 m throughout. The kick off point was at 200 m.

110 m - 320 m

This section consisted of clay and some interbeds of peat and loose quartz sands.

The formation over this interval was as in the preceding wells.

ROP varied considerably over this section, from 0.2 - 60 min/m, slow rates reflecting intervals where clays were "balling up" on the bit, rather than to hardness of the formation.

Gas in this interval was generally in the range 0.05 - 0.2% with one exceptional peak of 0.9% at 138 m. The only gas recorded was methane.

320 m - 1600 m

This section consisted mainly of clay with traces of sand.

The formation over this interval was as in the preceding wells.

From 320 m - 1050 m, the ROP decreased steadily from an average of 0.3 - 0.5 min/m, to 2 min/m. From then on it continued to decrease and increase in the range 1.5 - 6 min/m, the faster intervals probably corresponding to sandier sections.

Total gas was usually in the range 0.1 - 0.2% with no really distinct peaks, but it was seen to slowly decrease at some points, the maximum observed values being 0.9% at around 415 m and 670 m. Only methane was detected.

1600 m - 2015 m

This section consisted of clay with interbeds of sand.

The formation was generally as in the preceding wells.

As before, the sand was certainly present in greater quantities than were observed here. It was seen to constitute 10% of the sample over the interval from 1690 m - 1710 m, but elsewhere was only seen in trace quantities (not more than 5%).

ROP in this section averaged 2 - 3 min/m, with frequent drilling breaks of 0.5 - 1.5 min/m indicating the presence of sand stringers, these rarely being more than 1 m thick.

Total gas values were on average in the range 0.2 - 0.4% with a number of significant peaks, the most noteworthy of which were at 1710 m (4.2%), 1768 m (4.3%), 1941 m (6.8%) and 1915 m (5.2%). Methane was by far the most commonly observed gas, but some very small traces of ethane and propane were also seen in the above shows.

ELECTRIC LOGS

The following E-Logs were run by Schlumberger:

ISF - SLS - SP

ISF : 1049.5 m - 1988 m

SLS : 1049.5 m - 1975 m

SP : 1049.5 m - 1985 m

LDL - CNL - EATT

LDL : 1597 m - 1990 m

CNL : 1597 m - 1987 m

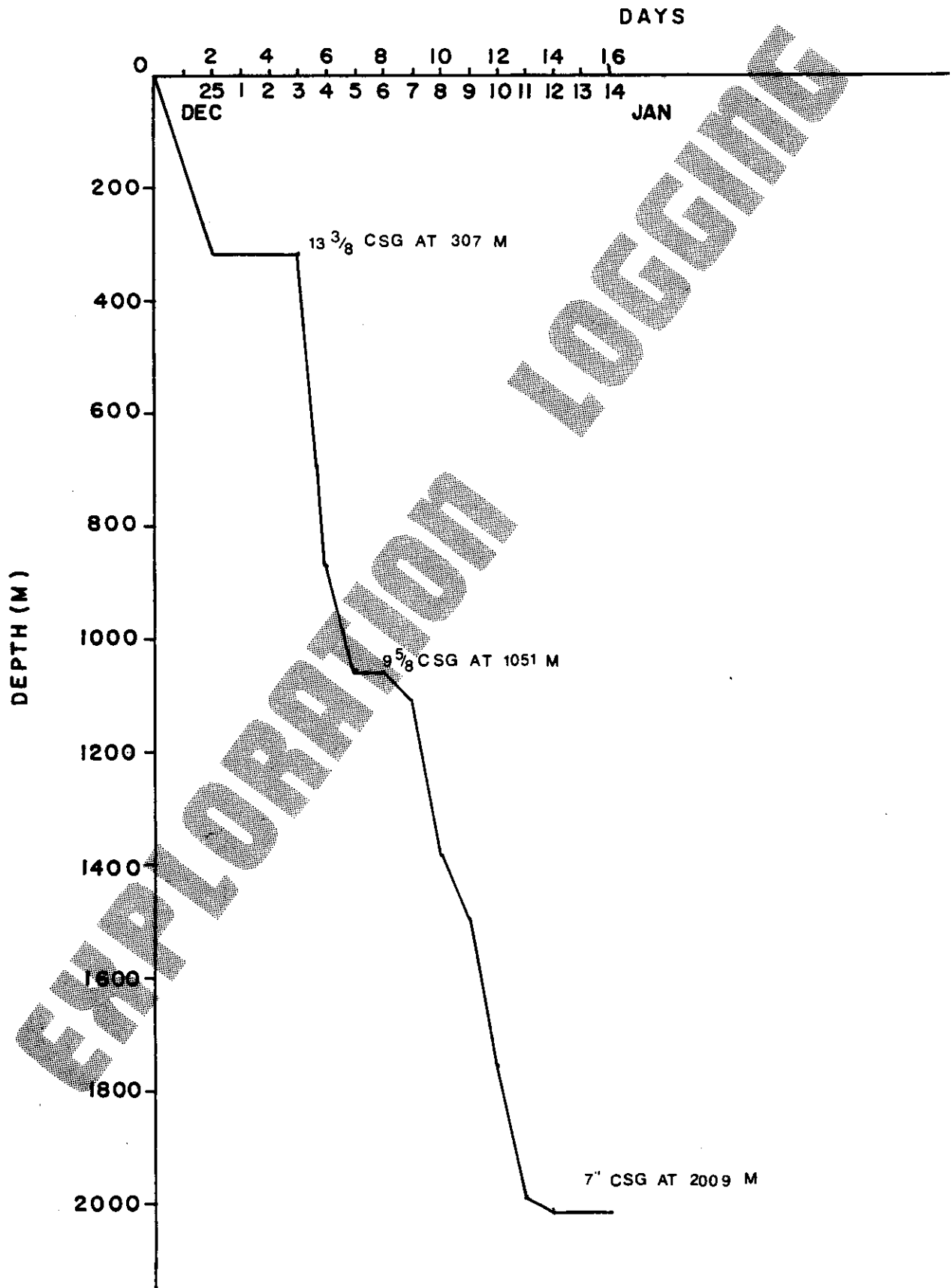
EATT : 1597 m - 1978 m

SHDT : 1045 m - 1989 m

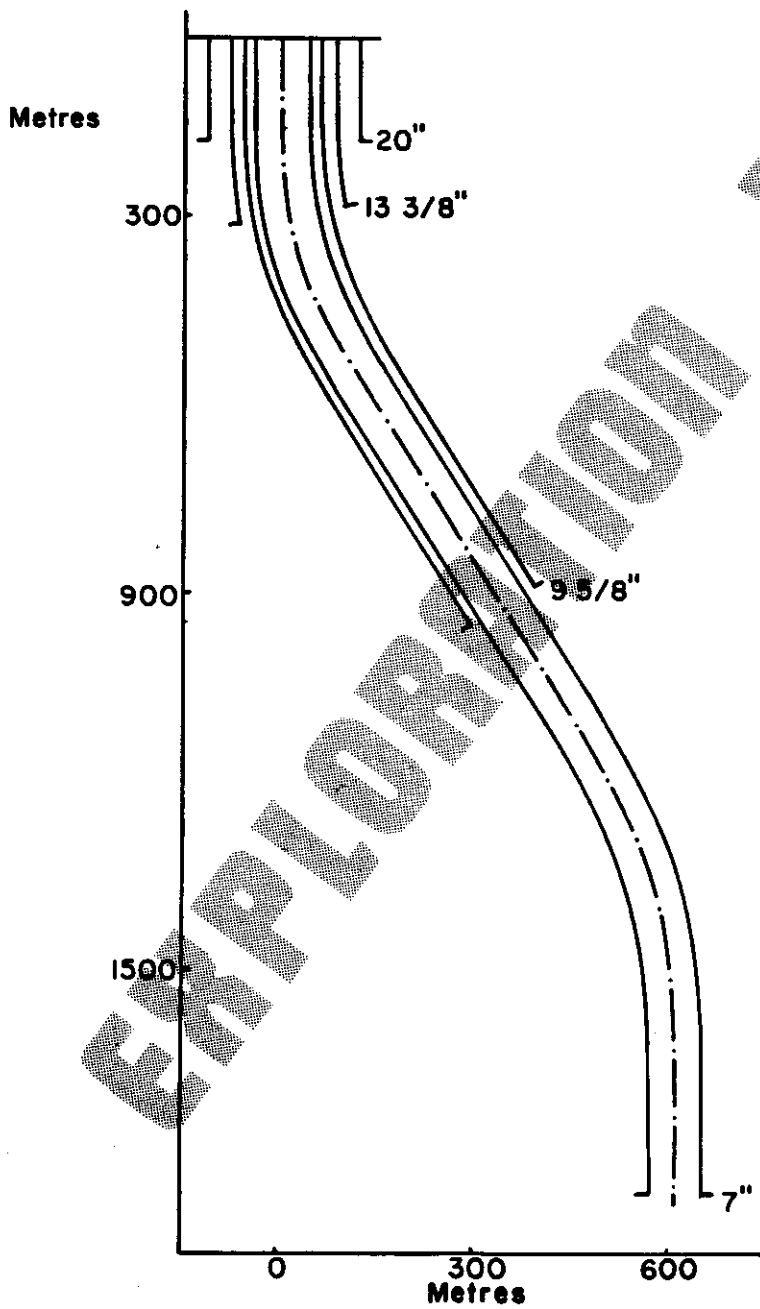
CBL/VDL : 450 m - 1047 m

CLARA OVEST 9 DIR

DRILLING PROGRESS CHART (AT MIDNIGHT DEPTHS)



WELL PROFILE
Piattaforma Clara Ovest 9



SECTION 4

CLARA OVEST 5 DIR

CLARA OVEST 5 DIR

This well was drilled in two phases. The first section (17.5") was spudded on December 26th 1987 and completed on December 27th 1987. The second phase began on January 13th 1988 and was completed on January 28th 1988. The total depth (measured) was 2145 m. The sample interval was 10 m throughout, and the calcimetry interval 20 m. The kick-off point was 205 m.

110 m - 300 m

This section comprised of clay and some interbeds of peat and loose quartz sand.

The formation over this interval was as in preceding wells.

ROP over this interval averaged 0.2 min/m, with some slower intervals, but was generally more consistent than previously seen over this depth range.

Total gas figures were generally less than 0.1%, but peaks of 1.4% and 0.6% were observed at 121 m and 225 m respectively, and consisted of entirely of methane.

300 m - 1590 m

This section consisted of clay with traces of fine quartz sand.

The formation here was as seen over corresponding intervals in the previous wells.

ROP was again reasonably consistent in this section, tending to remain in the range 0.2 - 1.0 min/m.

Total gas values averaged between 0.2 - 0.4%, with a maximum value of 1% being recorded at 710 m. Only methane was observed.

1590 m - 2145 m

This section consisted of clay with interbeds of generally fine quartz sand.

The formation here was much the same as in the preceding wells, but some traces of glauconite were observed, and there were slightly larger traces of mica in the samples. As before, the sand was rarely seen to comprise more than 5% of the sample, but in some levels there seemed to be an increase in medium sized grains, and probably as a result of this, the percentage of sand increased to be 20% of the sample from 1840 m - 1850 m and 30% of the sample from 1890 m - 1900 m.

ROP was highly erratic over the greater part of this interval, varying between 1 - 5 min/m to 2100 m, after which it tended to become more consistent, averaging 2 - 3 min/m. As before, the presence of sand stringers was more easily determined from drilling breaks than from the samples.

The average background gas over most of this section was 0.3 - 0.4%. There were, however, a number of peaks in excess of 1%, the largest of which was 5% at 1829 m. Below 1990 m, gas values decreased again, averaging 0.2%. The only gas observed was methane.

ELECTRIC LOGS

The following E-Logs were run by Schlumberger:

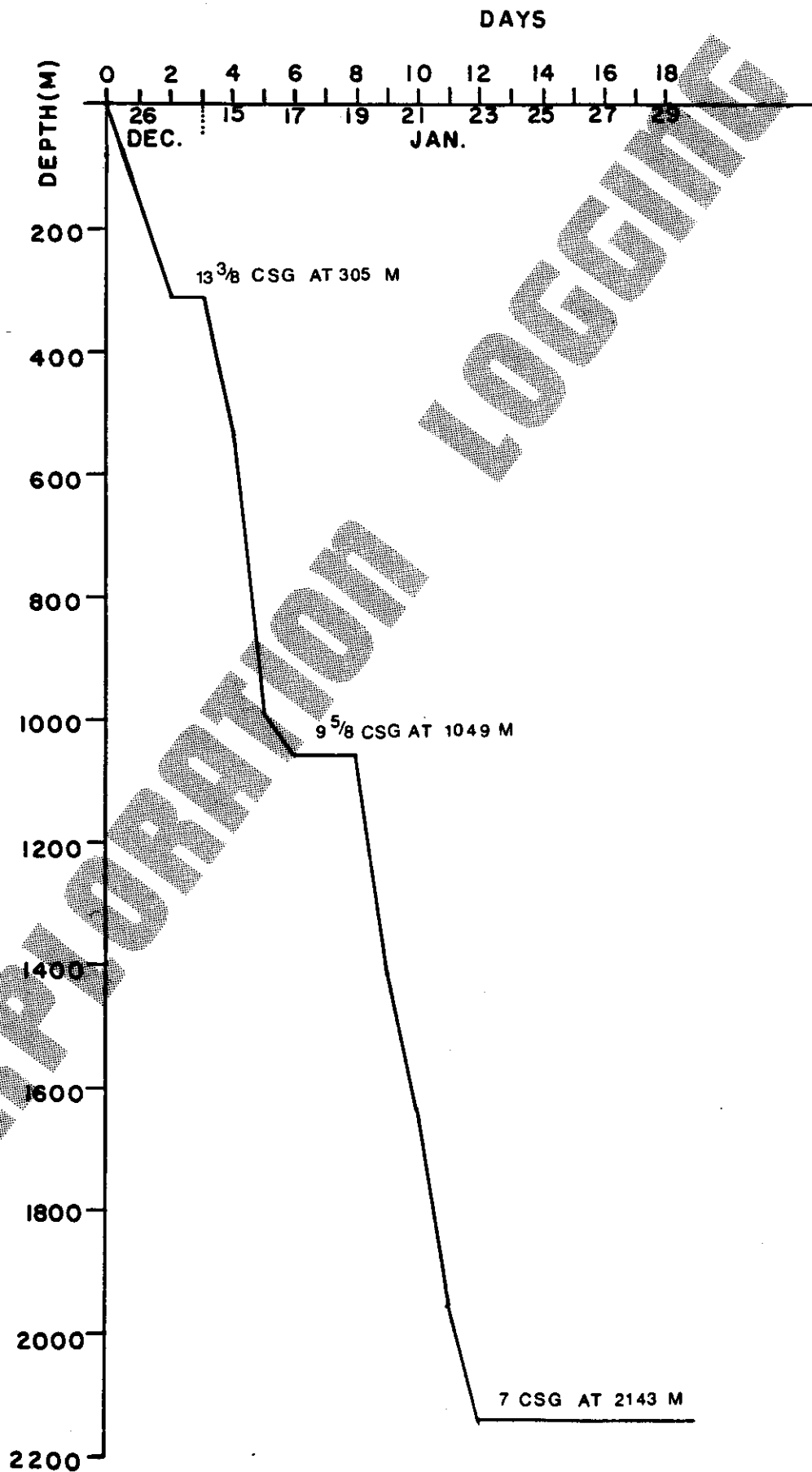
ISF - SLS : 1048 m - 2145 m

SHDT : 1048 m - 2145 m

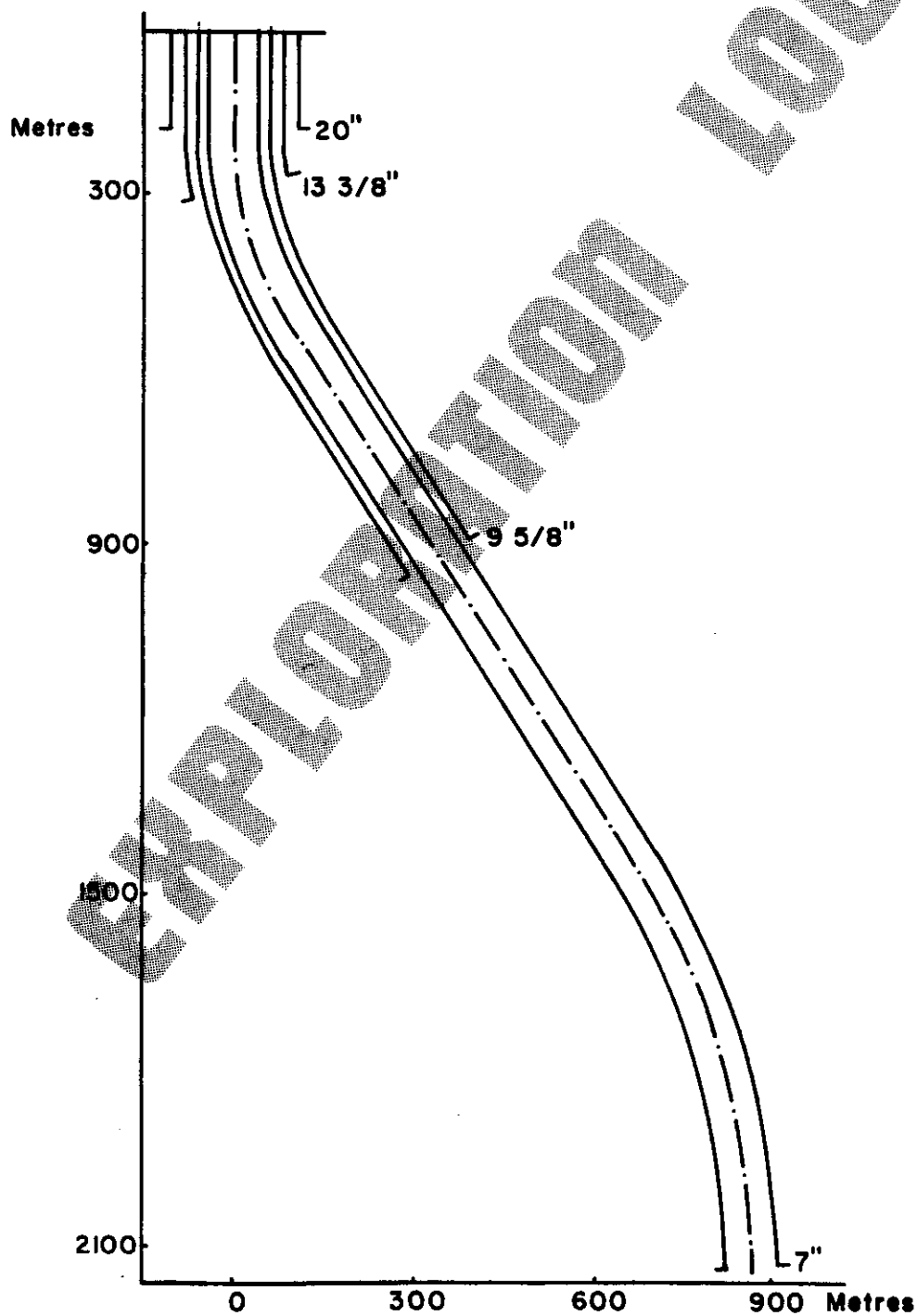
LDL - CNL - EATT : 1600 m - 2145 m

CLARA OVEST 5 (DIR)

DRILLING PROGRESS CHART(AT MIDNIGHT DEPTH



WELL PROFILE
Piattaforma Clara Ovest 5



SECTION 5

CLARA OVEST 6 DIR

CLARA OVEST 6 DIR

This well was drilled in two phases. The first section (17.5") was spudded on December 28th 1987 and completed on December 29th 1987. The next phase began on January 1st 1988 and was completed on January 13th 1988. Throughout the well, the sample interval was 10 m and the calcimetry interval was 20 m. The total depth (measured) was 1853 m and the kick-off points was at 801 m.

110 m - 300 m

This interval consisted of clay with some interbeds of peat and loose quartz sand.

The formation was as in the previous wells.

ROP in this section averaged 0.8 min/m, but over some intervals it decreased to as much as 9 min/m, probably due to clay "balling up" on the bit.

Gas averaged 0.2% total with a maximum value of 0.5% at 130 m.

300 m - 1440 m

Throughout this section the formation consisted of clay with traces of fine quartz sand, having the same characteristics as observed in the preceding wells.

ROP was generally slower than had been seen before for this depth range. At first, it averaged 1 min/m, but decreased with depth to 7 - 8 min/m towards the bottom of the interval. This trend was interrupted at 1200 m where a marked drilling break from 9 - 2 min/m was seen, followed by a

gradual decrease in ROP. It seemed unlikely however that these fluctuations reflect correspondingly major changes in the nature of the formation.

Total gas averaged 0.3 - 0.4% with a peak of 2% at 450 m. Methane was the only gas seen to be present.

1440 m - 1853 m

This section was comprised of clay with interbeds of fine to very fine quartz sand.

The formation here was again much the same as had been observed in previous wells, the sand tending to be slightly more homogenous (i.e. better sorted) than in Clara Ovest 5. This sand was rarely seen to exceed 10% of the total sample volume, and usually it was present in quantities of less than 5%.

ROP averaged 3 min/m with fairly frequent drilling breaks of usually, around 1 min/m. The average background total gas figure increased from 0.2% at 1450 m to the substantially higher value of 1% by 1800 m. Observed peaks were correspondingly larger, the most significant being 11% at 1791 m, and several peaks of the order of 10% appeared between 1700 m and 1800 m. The only gas detected was methane.

ELECTRIC LOGS

The following E-Logs were run by Schlumberger:

SHDT : 1116 m - 1801 m

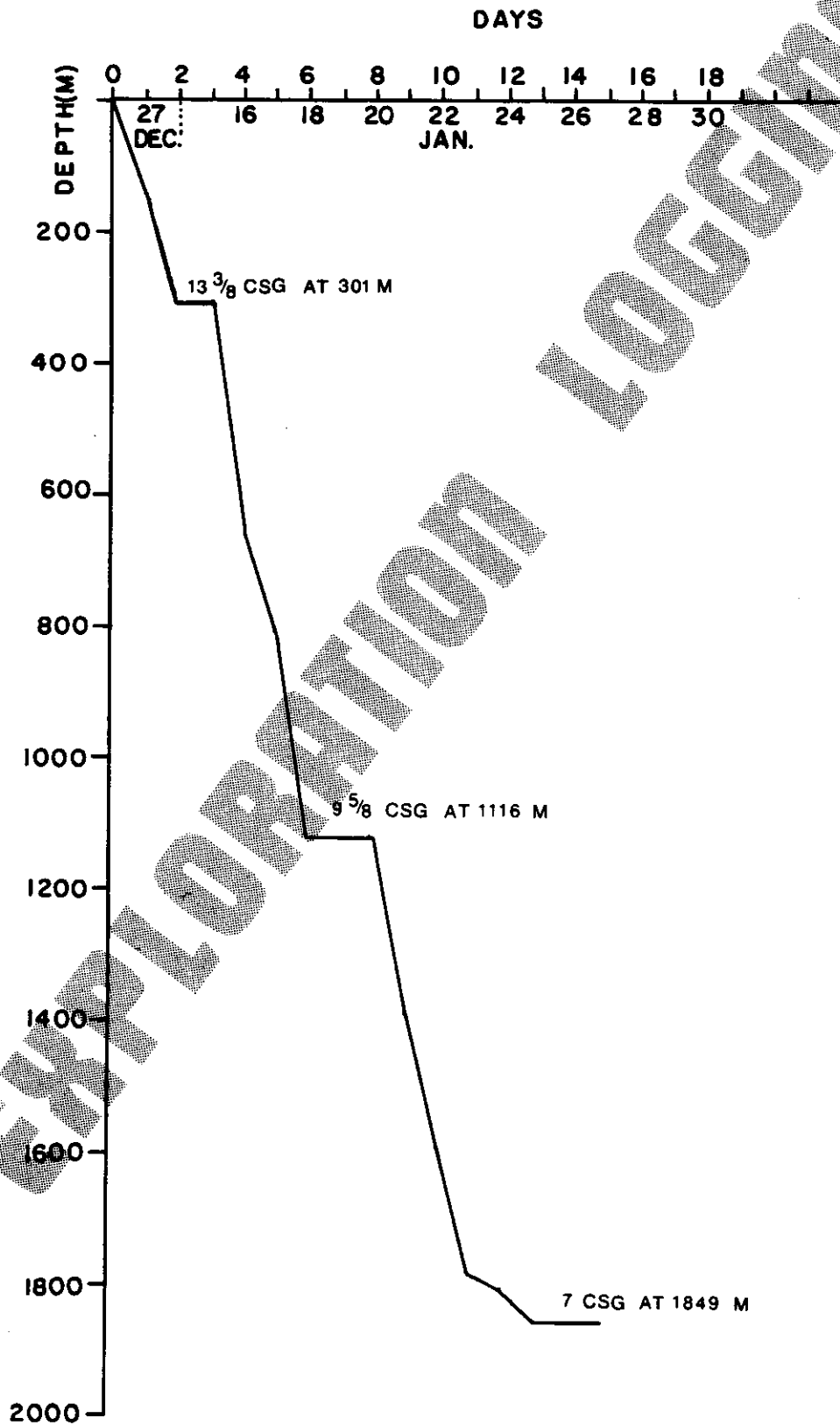
LDL - CNL - EATT : 1445 m - 1801 m

ISF - SLS - SP : 1116 m - 1802 m

CBL - VDL - CCL : 405 m - 1116 m

CLARA OVEST 6 (DIR.)

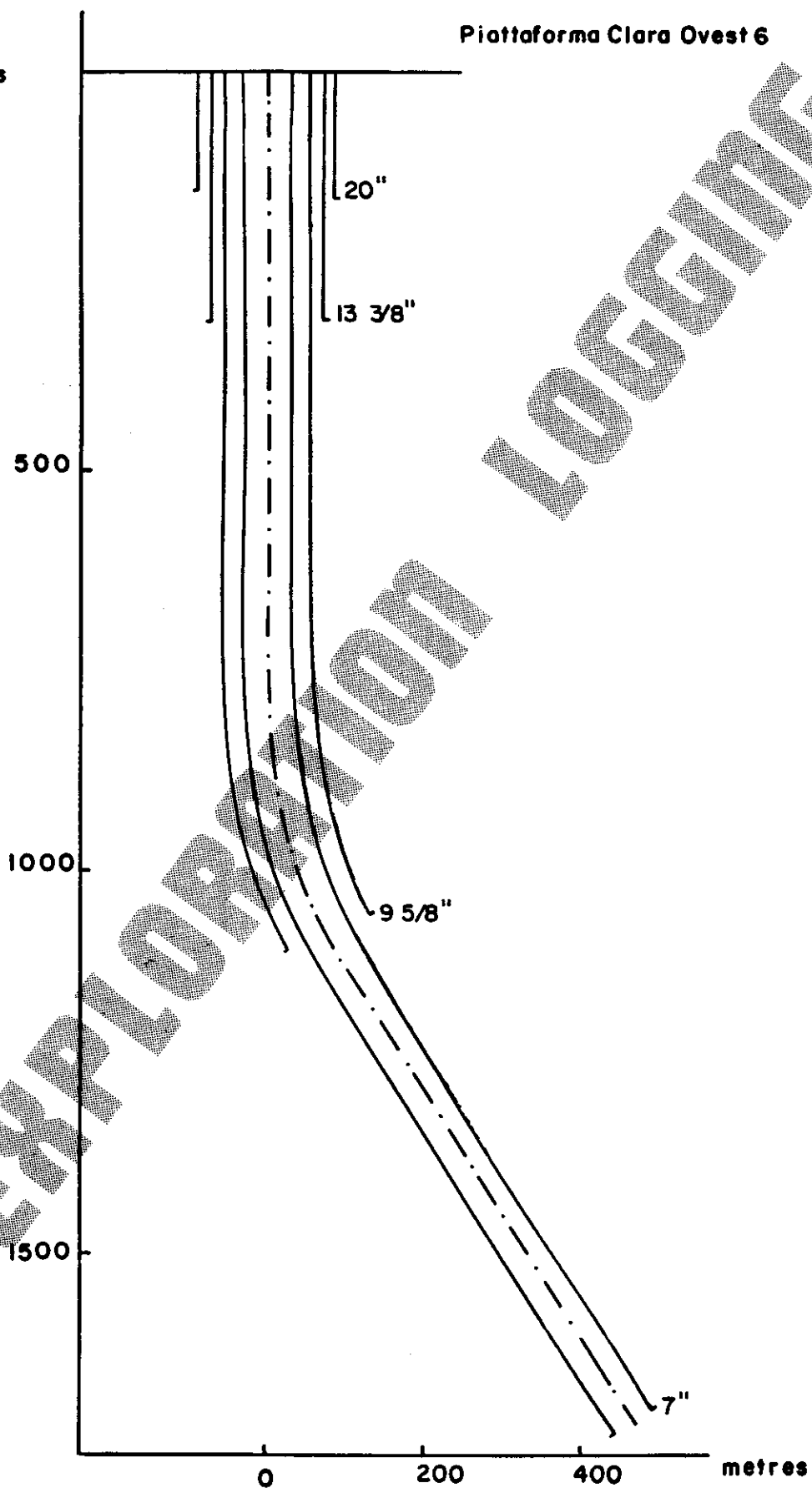
DRILLING PROGRESS CHART (MIDNIGHT DEPTHS)



WELL PROFILE

Piattaforma Clara Ovest 6

metres



metres

SECTION 6

CLARA OVEST 8 DIR

CLARA OVEST 8 DIR

This well was drilled in two phases. The first section was spudded on December 30th 1987 and completed on December 31st 1987. The next phase began on February 15th 1988 and was completed on February 26th 1988. The kick-off point was at 321 m and the total depth (measured) was 2240 m. Throughout the well, the sample interval was 10 m and the calcimetry interval was 20 m.

110 m - 304 m

This interval consisted of clay with interbeds of peat and loose quartz sand.

The formation seen here was as in the previous wells.

ROP in this section varied between 0.5 - 5 min/m, but usually remained in the range 0.5 - 1.5 min/m.

Total gas was very low over this interval, often being less than 1% and never being more than 2%.

304 m - 1590 m

This section comprised of clay with some traces of fine quartz sand, generally having the same characteristics as seen over this depth range in the preceding wells.

ROP varied considerably, more so than had been the case with the preceding wells, and these variations correlated well with bit runs and hole size. Over the 12.25" hole section (i.e. to 1019 m) there was an overall decrease in ROP from 0.5 - 2 min/m to 2 - 4 min/m. This slowed down further at the

start of the 8.5" section to 5 - 10 min/m, speeding up to 1 - 5 min/m at the start of the second 8.5" bit run. The effect of the formation was secondary to these fluctuations.

The first significant amount of gas seen in this well was at 420 m (0.64%). From this depth until 844 m total gas remained within the range 0.2 - 0.5% to 844 m. From 844 m - 1276 m the background gas was generally less than 0.2% with a few minor peaks, the most substantial of which was 0.5% at 940 m. From 1276 m onwards the background gas was again in the range of 0.2 - 0.5%, with peaks of 0.9% seen at 1330 m and 1565 m respectively. The only observed gas was methane.

1590 m - 2210 m

This interval consisted of clay with thin stringers of fine quartz sand, being essentially the same as seen in the previous wells over corresponding sections. The percentage of sand in the samples was usually less than 5% and only rarely greater than 10%.

ROP varied between 1 - 5 min/m, the faster rates correlating with sandier horizons.

The average background gas over this section was in the range of 0.3 - 0.4% with numerous peaks of the order of 4% at 1740 m, 1802m, 1822 m, 1870 m, 1881 m, 1911 m, 1951 m, 2001 m, 2023 m, and 2040 m. The largest peak was 4.7% at 1740 m. Below 2100 m the magnitude of both peaks and background gas began to decrease, and by 2200 m background gas was less than 0.2%. The only gas recorded was methane.

2210 m - 2240 m

This section was comprised of calcareous clay, marl and traces of chalky limestone.

The clay was at first as seen previously in this and preceding wells, having an average calcimetry value of 20 - 30%. Bulk calcimetries were then seen to increase from 30% at 2220 m to 70% at 2240 m, and the presence of marl and traces of chalky limestone were noted in the samples. The marl was firm to slightly hard, grey to dark grey, occasionally greenish grey, laminated, silty and fossiliferous. The limestone was firm, milky white to off white and argillaceous in part.

ROP in this section varied between 5 - 10 min/m, the slower values corresponding to chalky horizons.

No gas was detected in this section.

ELECTRIC LOGS

The following E-Logs were run by Schlumberger:

1. At 2099 m :

ISF - SLS - SP : 1011 m - 2094 m

LDL - CNL - EATF : 1500 m - 2080 m

SHDT : 1011 m - 2098 m

CBL - VDL - CCL : 325 m - 1010 m

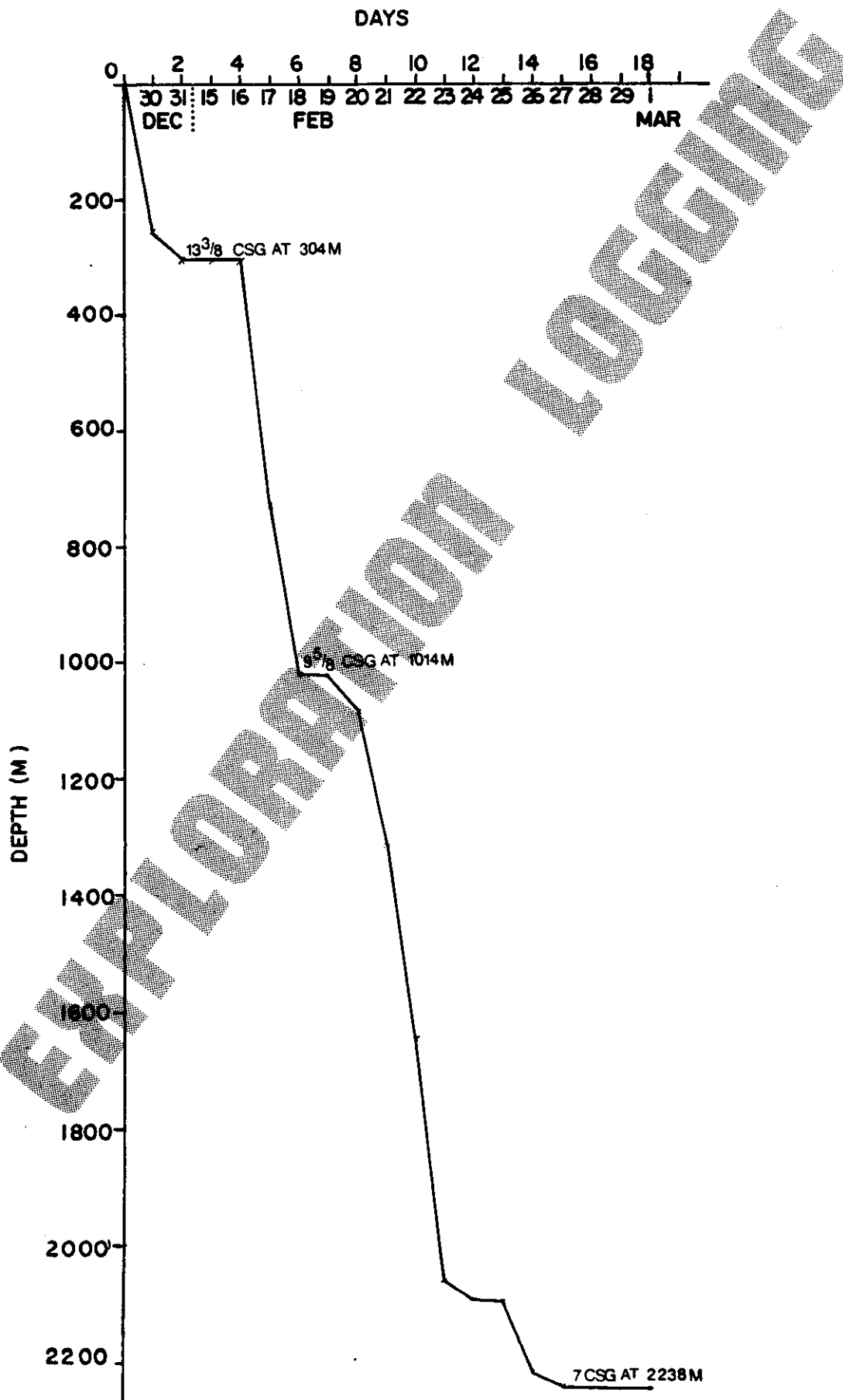
2. At 2024 m :

DITE - SLS - SP : 1850 m - 2237.5 m

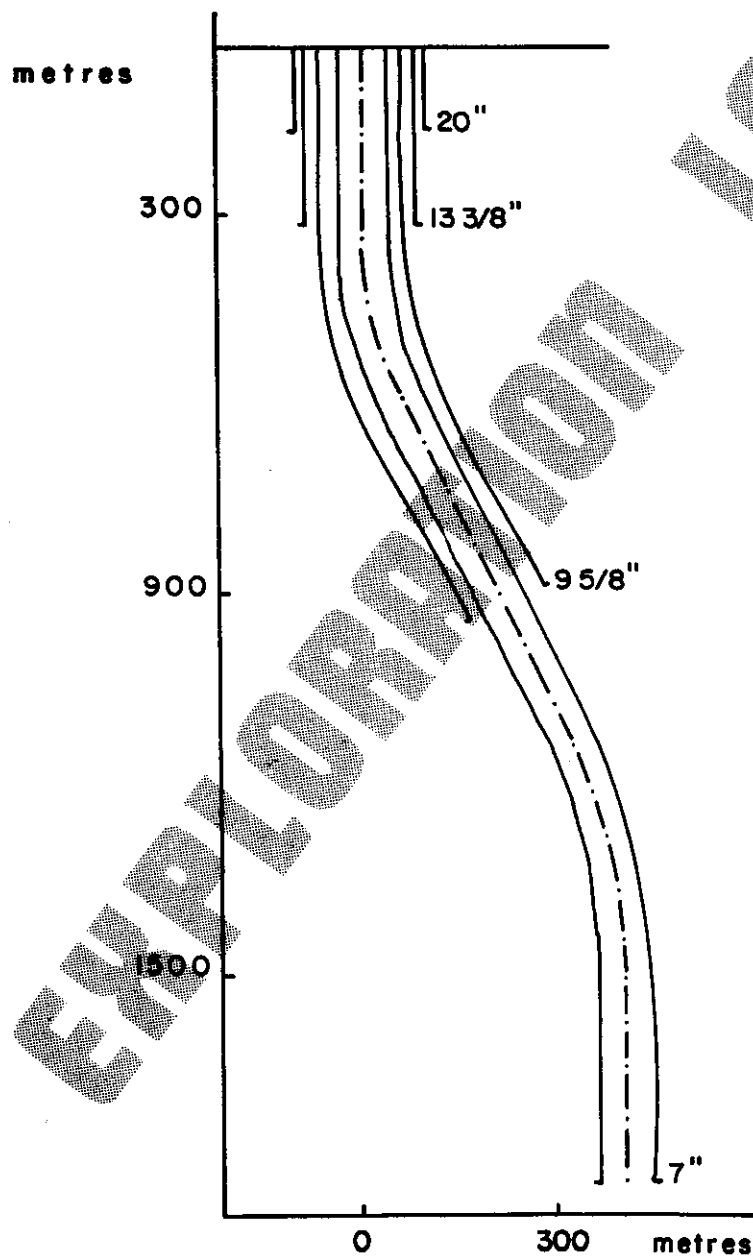
LDL - EPT - CNL : 1500 m - 2238 m

CLARA OVEST 8 (DIR)

DRILLING PROGRESS CHART (AT MIDNIGHT DEPTHS)



WELL PROFILE
Piattaforma Clara Ovest 8



SECTION 7

CLARA OVEST 11 DIR, 11A DIR AND 11A DIR 2ND WELL INTRODUCTION

CLARA OVEST 11 DIR, 11A DIR AND 11A DIR 2ND WELL

Clara Ovest 11 dir was spudded on March 16th 1988 and drilled without interruption to TD (2674 m measured) on March 29th 1988. This well was drilled with a very large deviation (52°) and was essentially an exploration well, the intention being to explore a hitherto unknown section and decide whether or not to put the well into production after logging. In the event of the well not showing a significant degree of mineralisation, a sidetrack, Clara Ovest 11A dir was to be drilled, this with a lower angle of deviation (38°). This was to drop off from 1610 m (measured) to investigate another zone for which there was considered to be more probability of finding producable quantities of gas. This was eventually drilled, well 11, having no worthwhile shows, being plugged and abandoned. However, towards TD, well 11A drilled into a section of gypsum and sulphur, with high formation pressures and H₂S (100 ppm detected by Exlog sensors) which led to this well, also being plugged and abandoned. Well 11A was sidetracked out of cased hole at 308 m on April 7th 1988, and TD was reached on April 17th 1988, the well being completed on April 30th 1988. Due to the loss of this well, it was decided to drill another sidetrack, Clara Ovest 11A dir 2nd hole, to the same objective but with a shallower TD. This well was kicked off out of open hole at 1708 m on April 30th 1988 and reached TD (2371 m measured) on May 5th 1988, the well being completed on May 8th 1988.

SECTION 8

CLARA OVEST 11 DIR

CLARA OVEST 11 DIR**110 m - 220 m**

This interval consisted of clay with interbeds of peat and loose quartz sands. The formation was as seen in previous wells.

ROP generally averaged 0.2 - 0.4 min/m, slowing down frequently to 6 - 20 min/m, probably as a result of clay "balling up" on the bit.

Total gas values were on average less than 0.1%, with a peak of 0.85% at 130 m. The only gas observed was methane.

220 m - 2764 m

This interval consisted of clay with some thin beds of loose quartz sand, usually fine to very fine grained but occasionally becoming medium grained. The formation generally consisted of material much the same as seen in previous wells. However, in the lower part of the section, there was an increase in the amount of mica seen in the samples, both muscovite and biotite being present, and also some traces of glauconite.

The sand was present in smaller quantities than seen elsewhere, and even spot samples coinciding with drilling breaks displayed less than 10% sand by volume.

ROP gradually decreased over this interval from 1 min/m (average) at the top to 2.5 min/m (average) from 2650 m onwards, with some slow intervals of 7 - 8 min/m, again due to clay "balling up" on the bit.

Total gas values averaged 0.2 - 0.3%, the only significant peaks being at 389 m (0.8%), 710 m (0.65%), 2090 m (0.6%) and 2342 m (1.72%). Only

methane was seen to be present.

EXPLORATION LOGGING

ELECTRIC LOGS

The following E-Logs were run by Schlumberger:

ISF - SLS - SP : 1442 m - 2644 m

LDL - CNL - EAIT : 2100 m - 2450 m

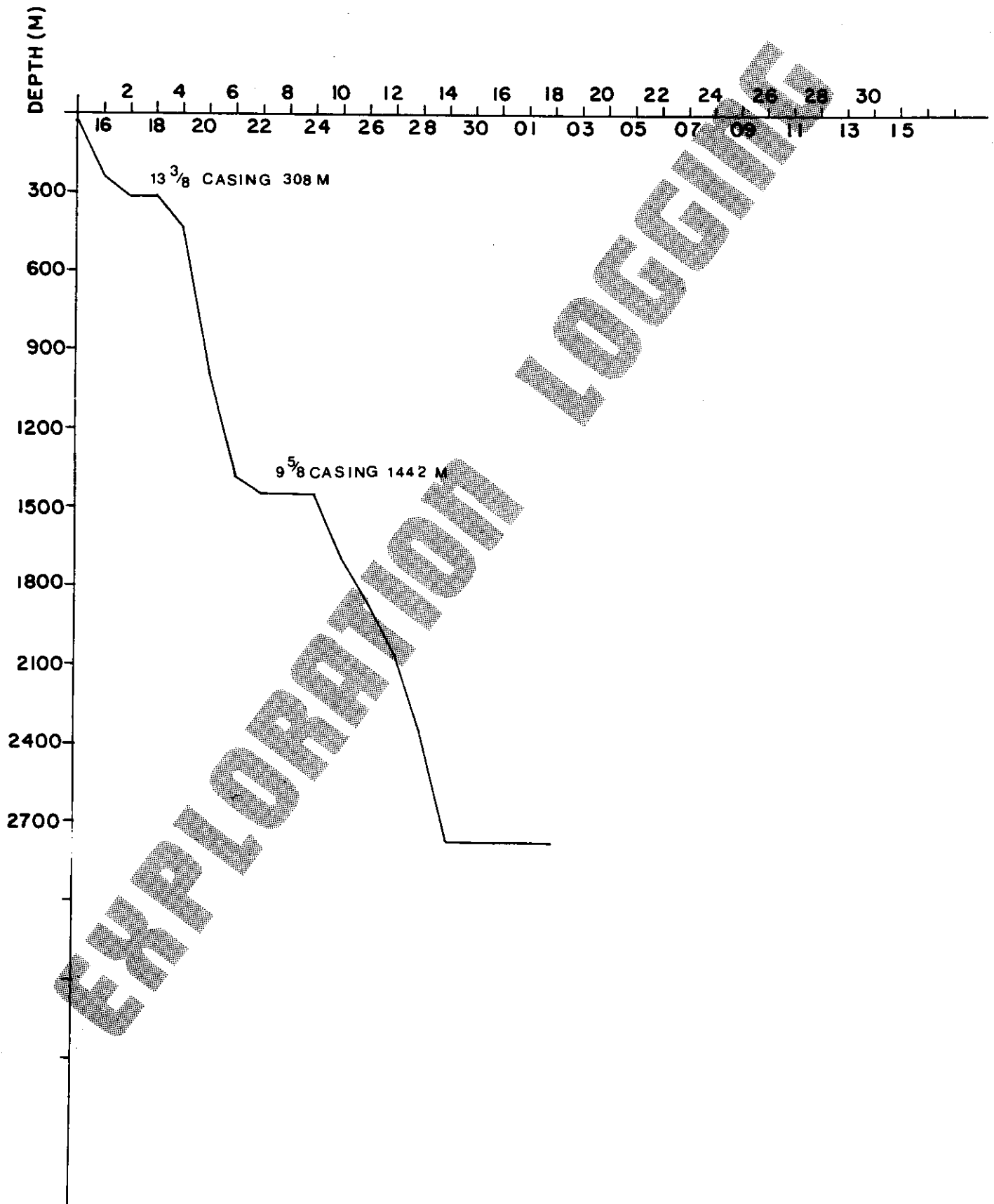
SHDT : 1442 m - 2655 m

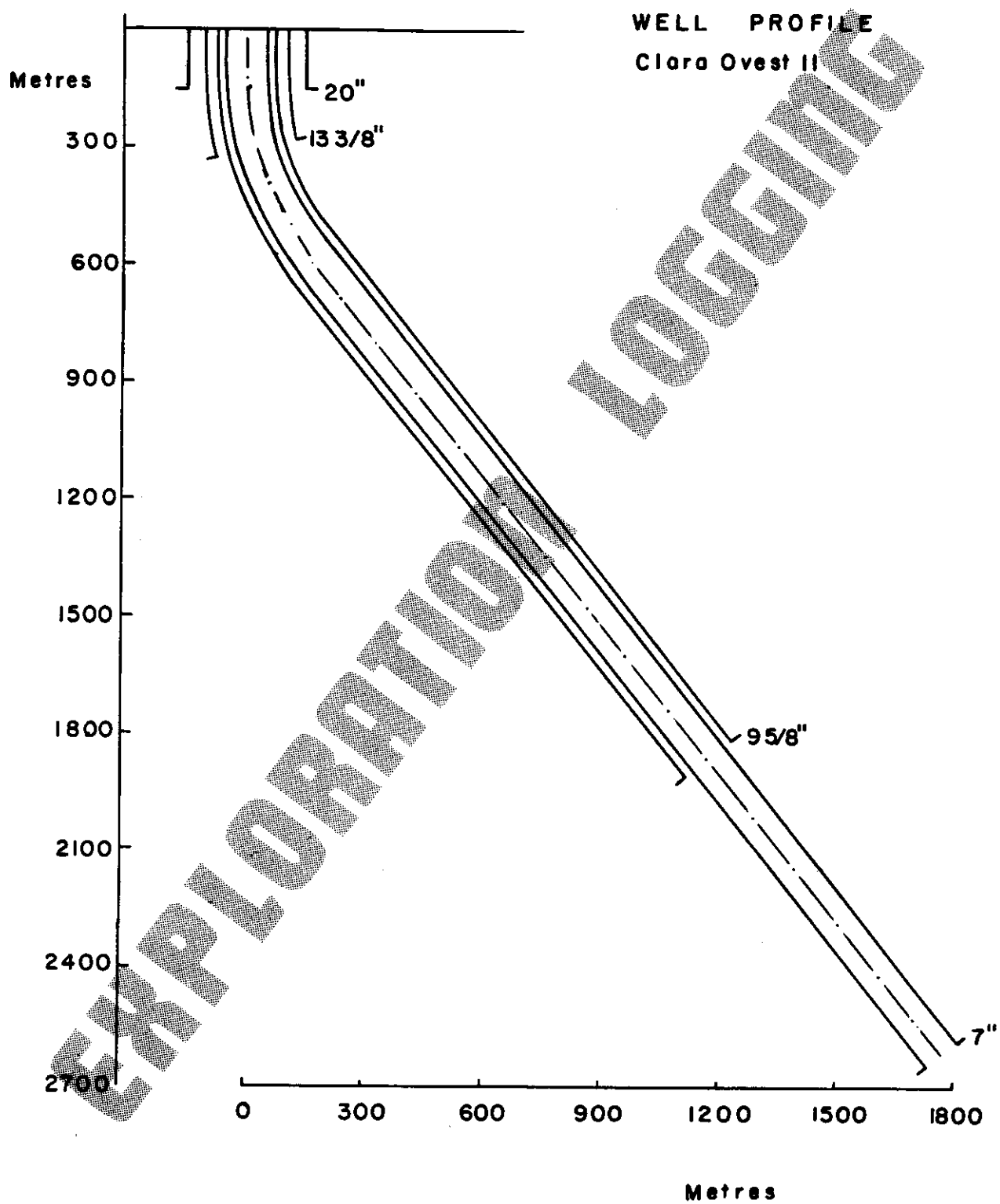
CBL - VDL - CCL : 750 m - 1439.5 m

An RFT was also run, but became stuck after 1 test at 2253 m. It was afterwards successfully fished.

CLARA OVEST II (DIR)

DRILLING PROGRESS CHART (AT MIDNIGHT DEPTHS)





SECTION 9

CLARA OVEST 11A DIR

CLARA OVEST 11A DIR**308 m - 1640 m**

Over this hole section the formation consisted of clay with fine quartz sand as seen in previous wells.

ROP were more regular than seen in most of the other wells over corresponding intervals, initially averaging 1 min/m and gradually slowing down to average 2 min/m by the end of the section.

Total gas averages were initially fairly high, being in the range 0.6 - 1.0% from 500 - 800 m. They then decreased to an average of 0.3% to the end of the interval, the only significant peak being at 1106 m (1.12%). The only observed gas was methane.

1640 m - 2395 m

Over this interval the formation consisted of clay with thin stringers of loose quartz sand, as seen in previous wells.

ROP averaged 2.5 min/m down to 2290 m, thereafter decreasing to 5 - 7 min/m.

Total gas averaged between 0.3 - 0.4% with frequent peaks of 2 - 3% associated with sand stringers. The most significant of these, 4.2% at 2266 m, also showed traces of ethane, propane and n-butane, the only gas seen elsewhere being methane. For this section, no more significant peaks were observed below 2320 m.

2395 m - 2411 m

This section consisted of marl with some chalky limestone, gypsum and

sulphur.

The marl was grey to dark grey, soft, amorphous, locally becoming firm to hard, generally slightly soluble and laminated, and was the major component over this interval (calcimetries here were seen to increase from an average of 20 - 30% to 70%). There were also traces of a white to off-white, soft, slightly argillaceous chalky limestone.

The gypsum was in part white, soft and soluble and in part clear, crystalline and tabular.

The sulphur was lemon yellow, translucent, hard, brittle, angular and had a silky lustre.

Throughout this section the ROP averaged 5 min/m (generally 3 1/2 - 6 min/m) with surprisingly little variation for such diverse formation types.

Total gas was generally very low throughout this section, averaging 0.2% (methane). However, the short trip gas after the wiper trip at TD (2411 m measured) consisted of H_2S , a figure of 100 ppm being registered by the Exlog sensor above the shale shakers.

During trips and flow checks in the lower part of this section, the well was seen to flow at rates of between 35 and 2000 lt/hr. The mudweight was increased from 1.4 kg/lt to 1.64 kg/lt, thus bringing the well under control, but the high pressure, combined with the presence of H_2S lead to the decision being taken to plug and abandon the well.

ELECTRIC LOGS

The following E-Logs were run by Schlumberger:

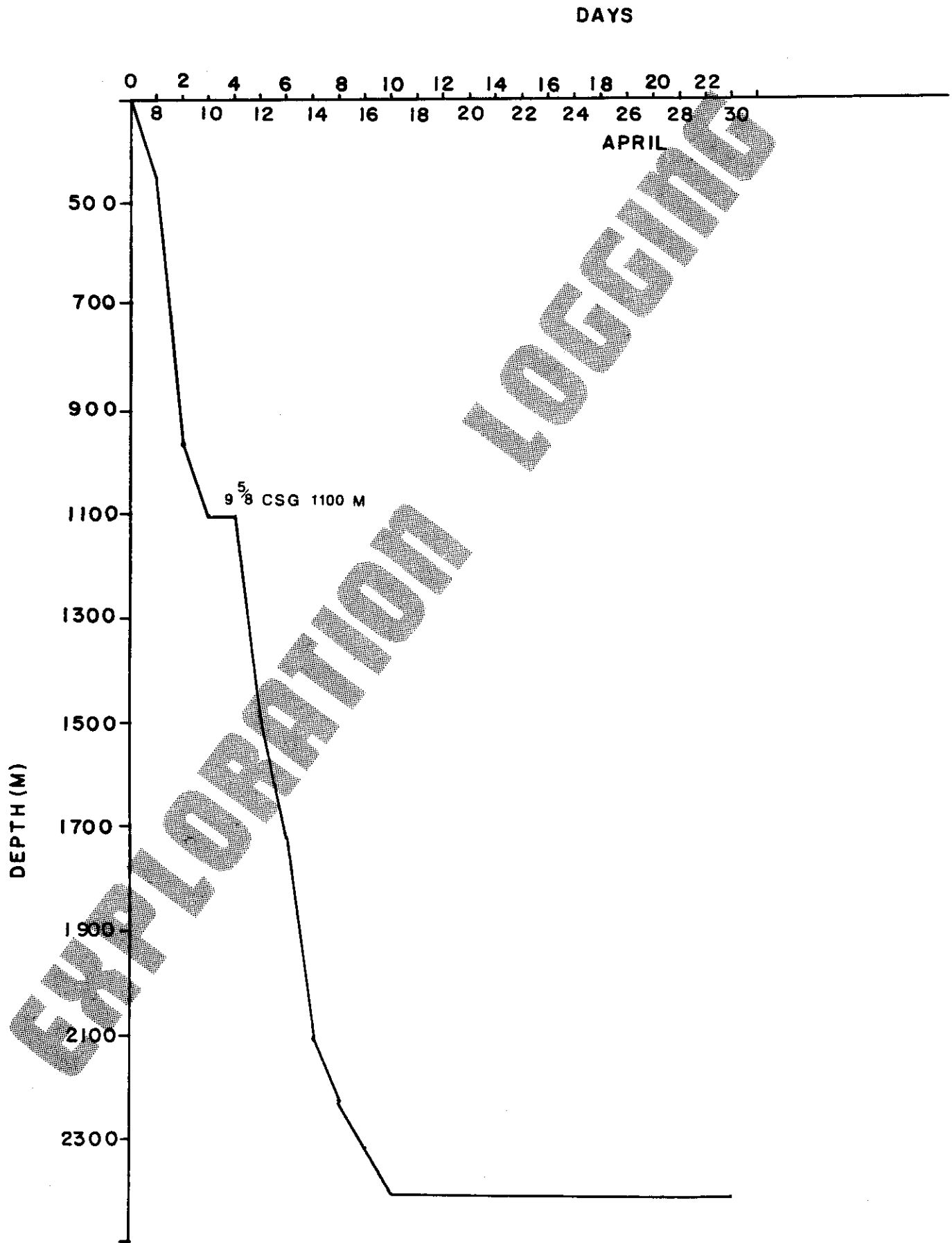
ISF - SLS - SP : 1600 m - 2315 m

SHDT : 1600 m - 2317 m

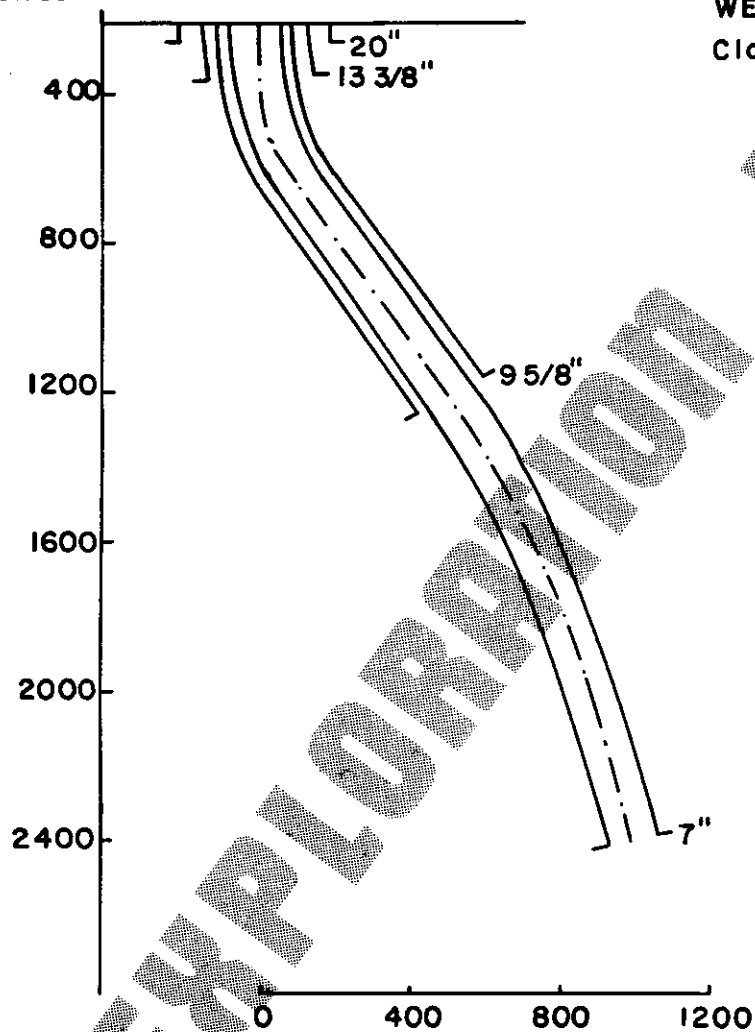
CBL - VDL - CCL : 425 m - 1100 m

EXPLORATION LOGGING

CLARA W II DIR A
DRILLING PROGRESS CHART (AT MIDNIGHT DEPTH)



Metres



WELL PROFILE
Clara Ovest II A

Metres

SECTION 10

CLARA OVEST 11A DIR 2ND WELL

CLARA OVEST 11A DIR 2ND WELL

1708 m - 2371 m

This section consisted of clay with thin stringers of fine loose quartz sand, with the same characteristics as in preceding wells, with the exception that the sand occasionally was seen to become slightly coarser (fine to medium grained) than in most of the other wells drilled here. It was also locally slightly glauconitic.

ROP averaged from 1.5 to 2.5 min/m, with some slower intervals of 5 to 7 min/m due to clay "balling up" on the bit.

Total gas values were generally in the range of 0.2 to 0.4% with few peaks, only exceeding 1% on five occasions, the most significant of which was at 1893 m (1.5%). Only methane was recorded on this well.

ELECTRIC LOGS

The following E-Logs were run by Schlumberger:

ISF - SLS - SP : 1708 m - 2366 m

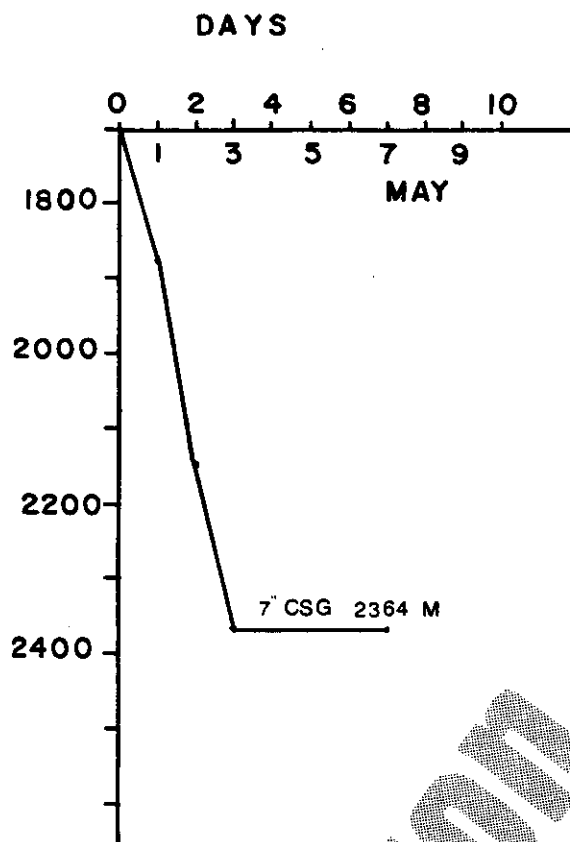
LDL - CNL - EATT - GR : 1770 m - 2366 m

SHDT : 1708 m - 2366 m

An RFT was also run, readings being taken at 1855 m, 1914 m, 1959 m, 1972 m, 2000 m, 2054 m, 2243.5 m, 2244 m, 2272 m, 2296 m and 2317 m.

CLARA W II DIR A 2

DRILLING PROGRESS CHART (AT MIDNIGHT DEPTHS)



SECTION 11

CLARA OVEST 10 DIR

CLARA OVEST 10 DIR

Logging commenced from spud on May 8th 1988, and the well was completed on May 21st 1988. The sample interval was 10 m throughout. The calcimetry interval was 20 m for most of the well, being reduced to 10 m for the last 60 m of hole. The kick-off point was at 713 m and the total depth (measured) was 2063 m.

110 m - 200 m

This section consisted of clay with interbeds of peat and fine loose quartz sand, much as seen in the preceding wells but with a slight increase in the sand percentage (averaging 10% of the sample).

ROP varied between 0.2 and 2 min/m over this section.

Total gas was consistently less than 0.2% and was comprised of methane only.

200 m - 1550 m

This section consisted of clay with frequent traces of very fine loose quartz sand. The formation was as seen in preceding wells. Some pyritised worm burrows were observed in the lower part of the interval.

ROP was in the range 0.75 - 3 min/m, averaging 2 min/m throughout, except for some intervals where it slowed down to 5 - 10 min/m, due to clay "balling up" on the bit.

Total gas was generally in the range 0.1 - 0.6%, tending to increase slowly with depth. The few small peaks seen never exceeded 0.8% and were all between 1250 m and 1550 m.

1550 m - 1990 m

This interval consisted of clay with thin stringers of fine loose quartz sands. The formation over this section was as seen in preceding wells. The sand was generally seen as comprising less than 5% of the sample, occasionally increasing to as much as 20%, but, as stated previously, it was generally so fine that a large amount would have been lost at the shale shakers, making actual percentages significantly higher (as for all Clara Ovest wells).

ROP was more varied over this section, the frequent sands resulting in many short drilling breaks, rarely more than 1 m in length and frequently less than that. They ranged from 0.25 to 3.5 min/m.

Total gas values were generally in the range 0.25% to 0.7% (background) with a number of sharp peaks of the order of 2.5%, the largest being 2.9% (1817 m) and 2.85% (1880 m). Only methane was observed.

1990 m - 2063 m

The formation over this section was much as in the preceding one, the clay becoming slightly harder and the sand less evident. Hardly any fossils were seen here (only rare forams).

ROP was generally in the range 2 - 3.5 min/m, and such drilling breaks as occurred were of the order 1 - 1.5 min/m.

Total gas values gradually diminished from 0.2 - 0.5% at the top of the section to being constantly less than 0.2% by TD.

ELECTRIC LOGS

The following E-Logs were run by Schlumberger:

ISF - SLS - GR - SP : 1011 m - 2063 m

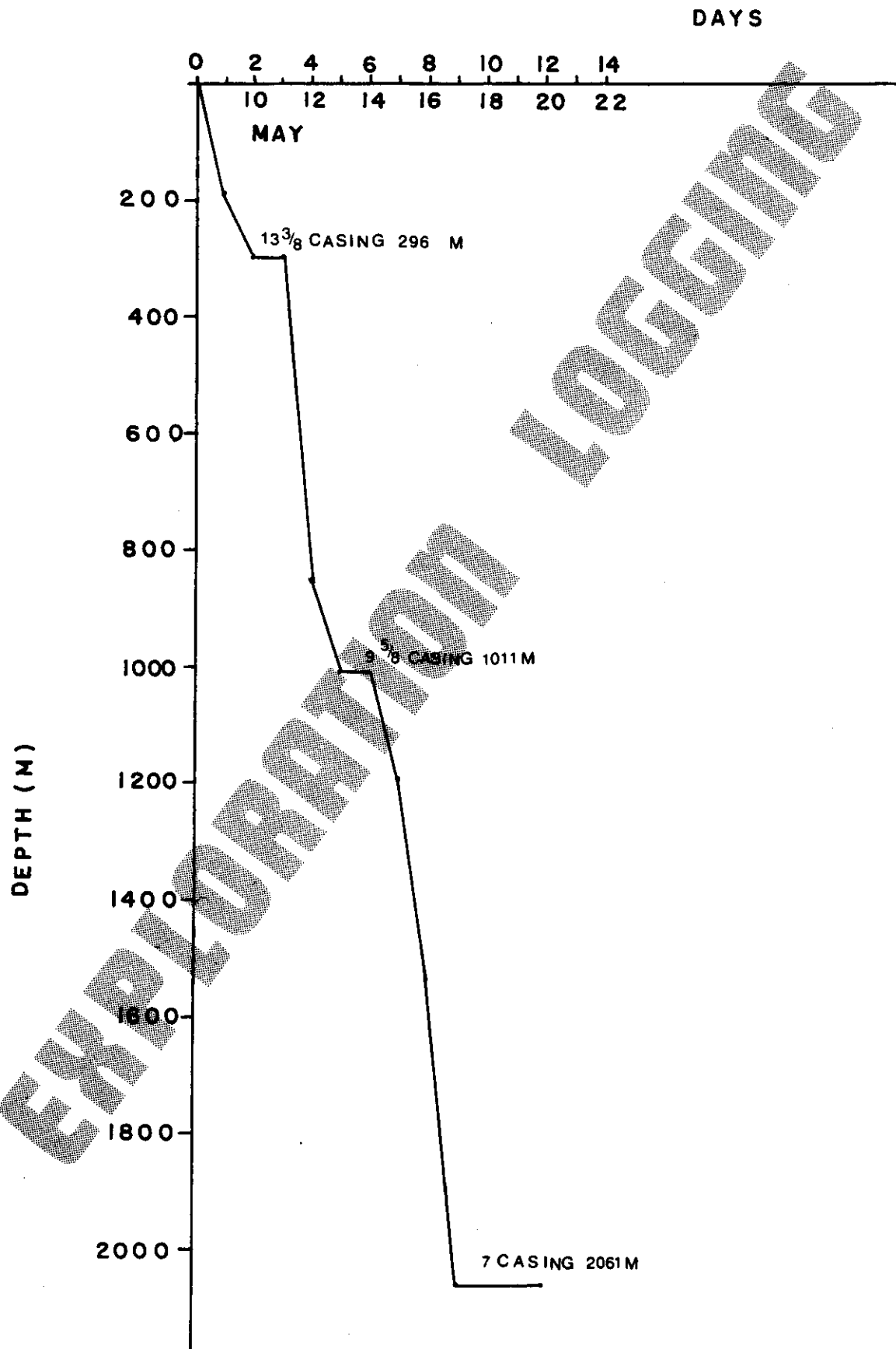
SHDT : 1011 m - 2063 m

LDL - CNL - EATT : 1500 m - 2063 m

CBL - VDL - CCL : 370 m - 1010.5 m

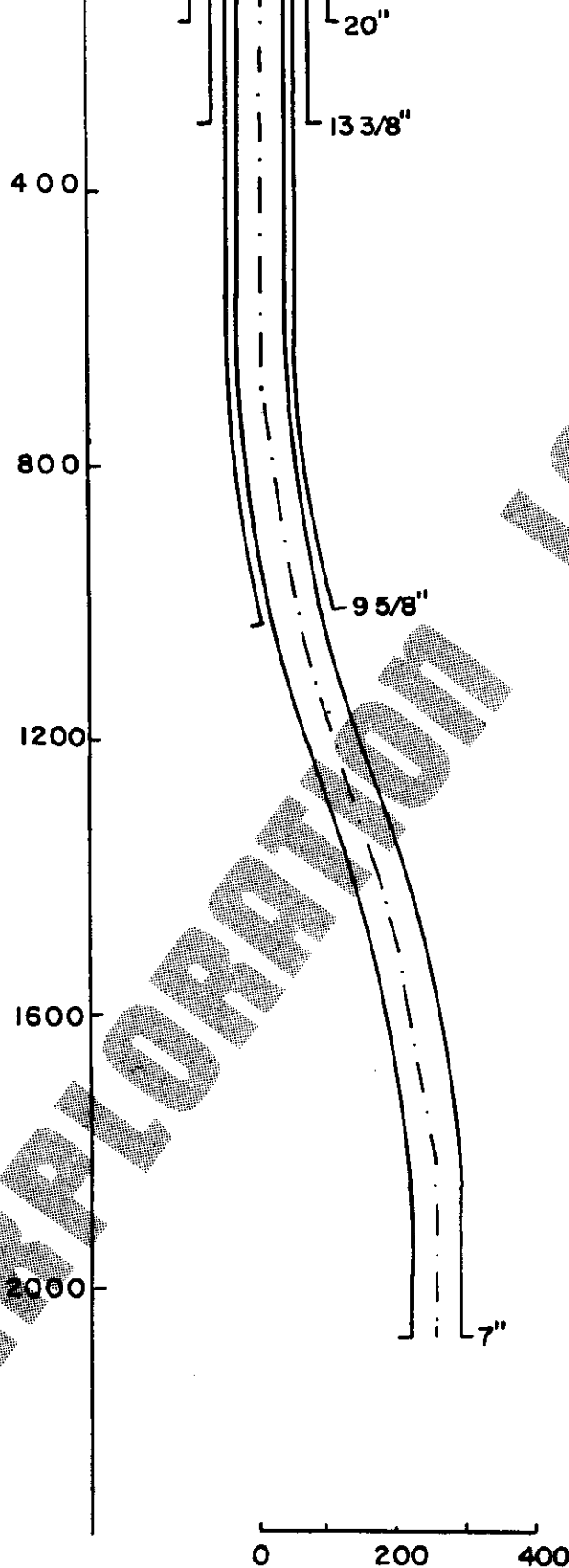
An RFT was also run, readings being taken at 1583 m, 1596 m, 1623 m, 1652 m, 1651.5 m, 1668.5 m, 1686 m, 1702 m, 1736 m, 1780.5 m, 1798.5 m, 1829 m, 1843 m, 1883 m, 1893 m, 1908 m, 1934.5 m, 1966.5 m, 1999.5 m, 2028 m.

CLARA OVEST 10 DIR
DRILLING PROGRESS CHART (AT MIDNIGHT DEPTHS)



Metres

WELL PROFILE
Clara Ovest 10



Metres