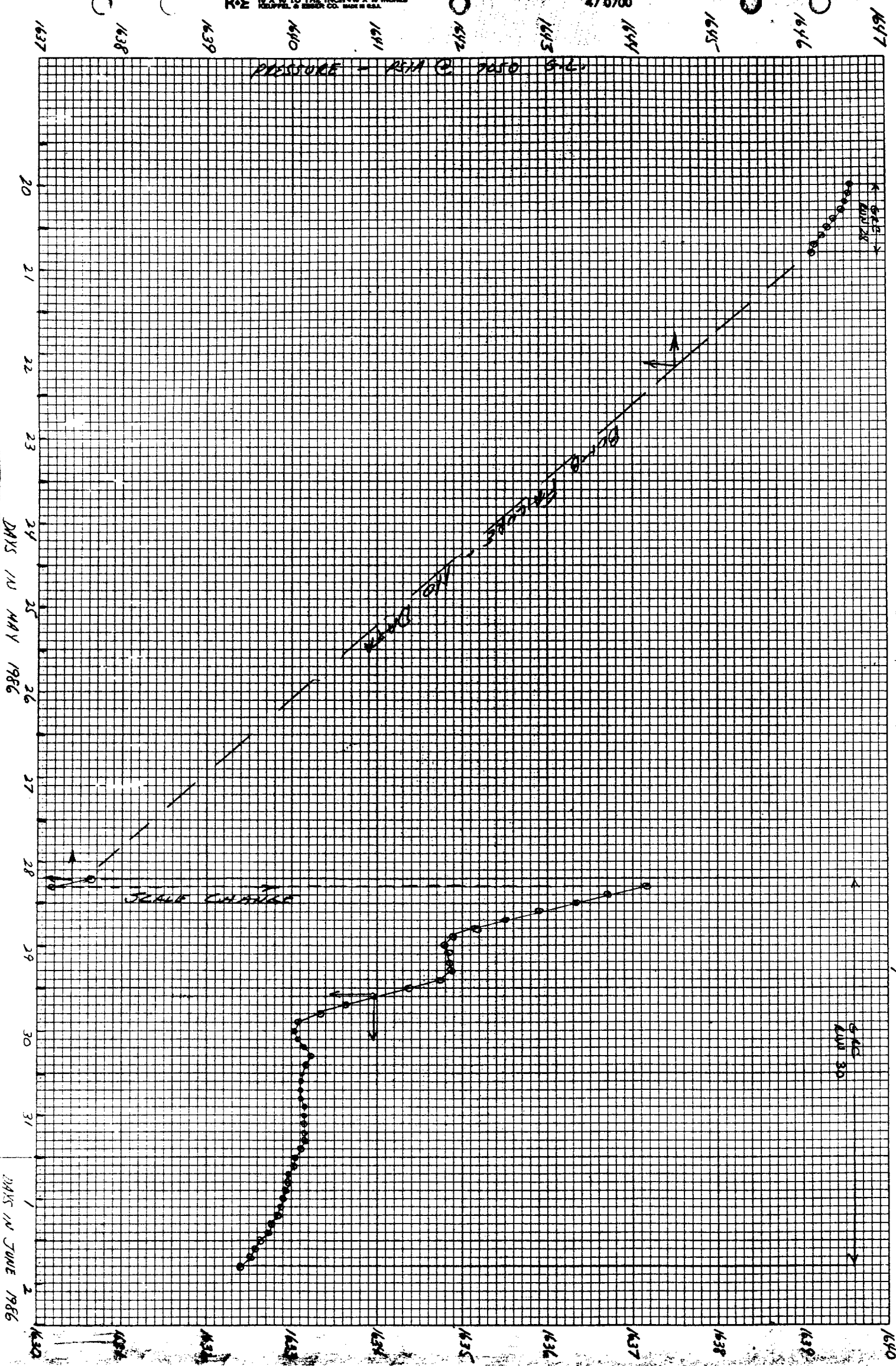


Ammonia
 Boom
 Runs

Completed 8/30/85
 IPF = 420 BOPD @ 390 GOR

1986

NMOCC CASE NO. 9113
 March 30, 1987
 DUGAN PRODUCTION CORP. /
 JEROME P. MCHUGH & ASSOC.
 Exhibit No. 12



BHP Surveys Michigan - 1 Loday

11220

21

22

23

24

25

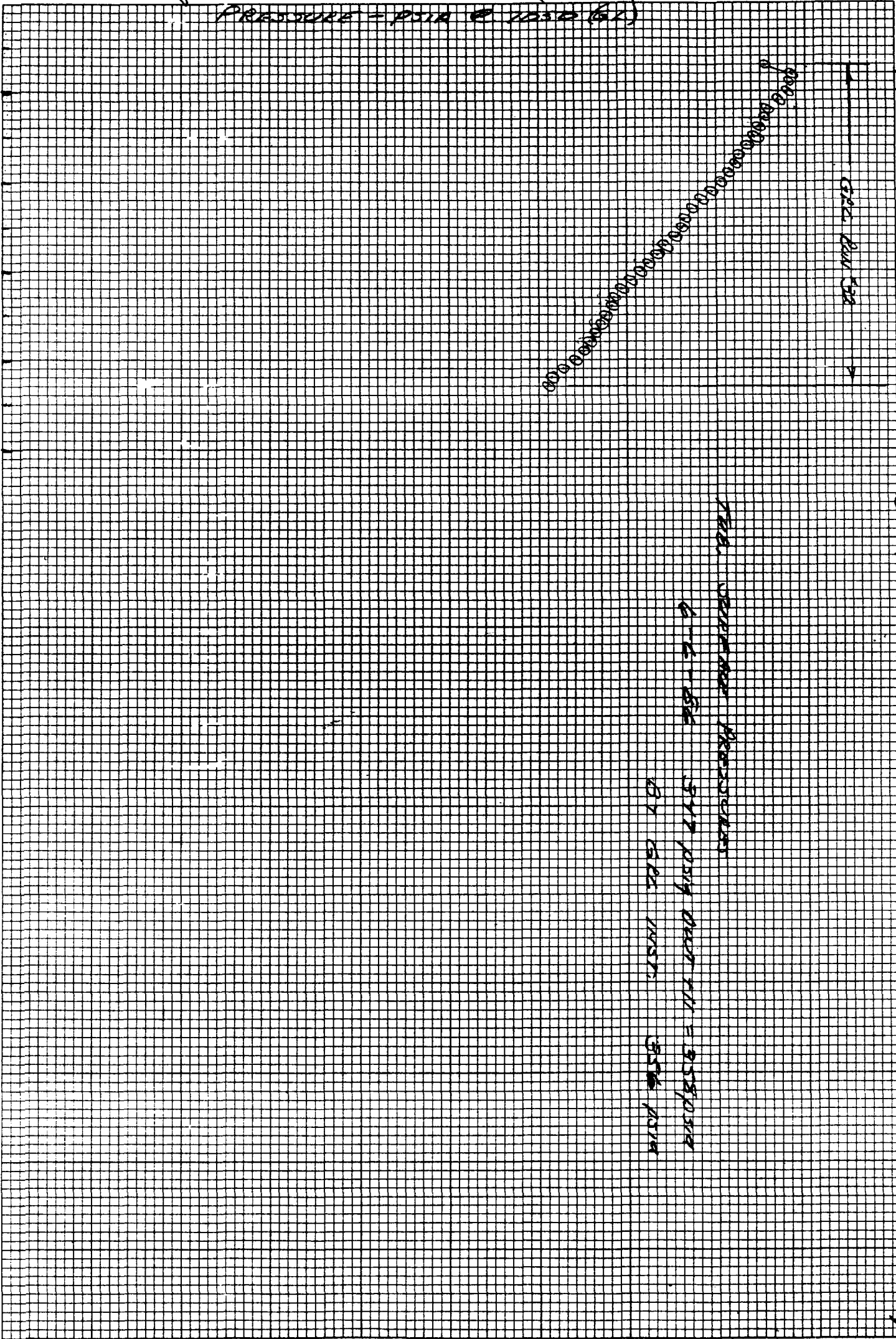
26

27

11228

PRESSURE = PSIA @ 1032 (62)

6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
DAYS
JUNE
1956



THIS CONTAINS PRESSURES

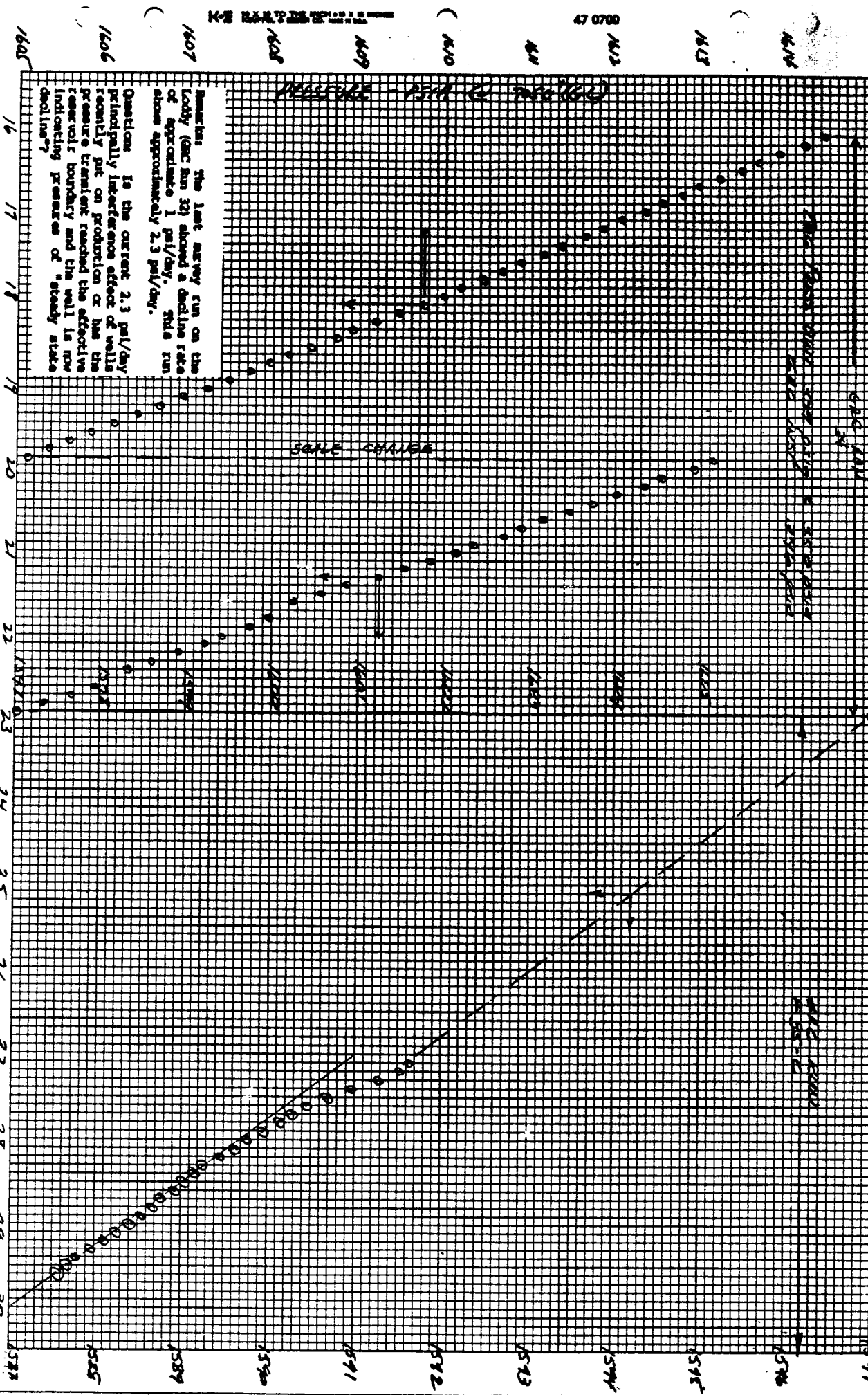
6-6-56 BY PSH DENT TIL = 9:58 PM

BY GLE WASH 5:56 PM

BURN HOLE PRESSURE SURVEY McHENRY

GLIMP 16

BHP SURVEY MCHUGH LODDY & /



Remarks: The last survey run on the Luddy (GEC run 32) showed a decline rate of approximately 1 psi/day. This run shows approximately 2.3 psi/day.

Question: Is the current 2.3 psi/day principally interference effect of wells recently put on production or has the pressure transient reached the effective reservoir boundary and the well is now indicating pressure of "steady state decline"?

1608 (N10) 47 0780
 1607 (N11)
 1606 (N12)
 1605 (N13)
 1604 (N14)
 1603 (N15)
 1602 (N16)
 1601 (N17)
 1600 (N18)

MEASURE WELL (MCHUGH LODDY #1)

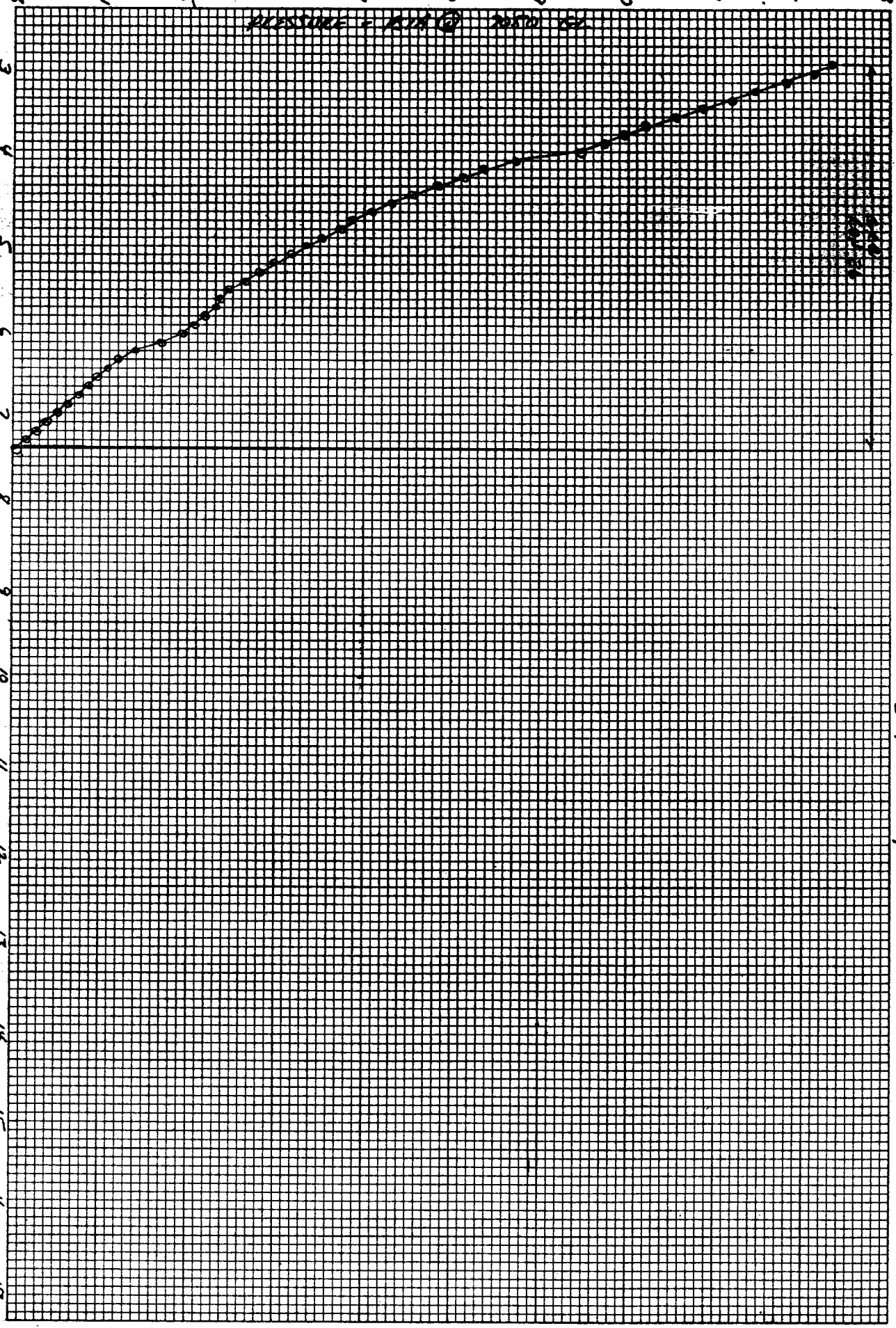
DAYS IN JUNE 1986

1573 1574 1575 1576 1577 1578 1579 1580 1581 1582 1583

GLASS 18

BHP SURVEY McHUGH LODDY #1

PRESSURE IN PSI @ 20000 PSI



DAYS IN JULY 1986

17

WELL CHART ANALYSIS

PERFORMED BY

COMPANY NAME B&R SERVICE INC.
GAUGE TYPE KPG
GAUGE NUMBER 850060
TICKET NUMBER 014

PREPARED FOR

COMPANY NAME JEROME P. McHUGH
WELL NAME LODDY #1
FIELD NAME GAVILAN-MANCOS
LOCATION RIO ARRIBA/N.MEX.
TYPE OF TEST INTERFERENCE

$$KB = 7167' + 370' = 6797'$$

Per James Bomb in SN - SAME AS for BMG Bomb.

Tbg MGA, SN @ 7117' KB

NL " SN @ 7120' KB.

∴ use 7120'

$$AP = -323' \times 303 = -98951$$

LODDY
850060

	TIME		PRESSURE PO1
	REAL	ELAPSED	
7-16-86	09:40:00	00:00:00	1,570.41
	15:40:25	06:00:25	1,570.41
	21:40:23	12:00:23	1,570.41
	03:40:07	18:00:07	1,570.41
	09:40:19	24:00:19	1,570.41
17	15:40:03	30:00:03	1,570.41
	21:40:29	36:00:29	1,570.41
	03:19:12	41:39:12	1,569.39
	03:40:00	42:00:00	1,569.39
	09:40:25	48:00:25	1,569.39
18	15:40:09	54:00:09	1,569.39
	21:40:07	60:00:07	1,569.39
	03:40:05	66:00:05	1,569.39
	09:40:17	72:00:17	1,569.39
19	15:40:02	78:00:02	1,569.39
	21:40:13	84:00:13	1,569.39
	03:07:32	89:27:32	1,568.37
	03:40:11	90:00:11	1,568.37
	09:40:09	96:00:09	1,568.37
20	15:40:21	102:00:21	1,568.37
	20:10:06	106:30:06	1,567.35
	20:40:29	107:00:29	1,567.35
	21:40:05	108:00:05	1,567.35
	03:40:17	114:00:17	1,567.35
	09:40:02	120:00:02	1,567.35
21	15:40:27	126:00:27	1,567.35
	21:27:10	131:47:10	1,566.33
	21:40:25	132:00:25	1,566.33
	03:40:23	138:00:23	1,566.33
22	09:40:21	144:00:21	1,566.33
	10:45:00	145:05:00	1,566.33

(1072)

1071

- 1071

- 1070

- 1069

- 1068

LODDY i
850060

	TIME		PRESSURE PSI
	REAL	ELAPSED	
7-22-86	11:50:00	00:00:00	1,563.27
	17:50:22	06:00:22	1,563.27
	23:50:30	12:00:30	1,563.27
	05:50:25	18:00:25	1,563.27
	09:03:03	21:13:03	1,562.24
23	09:50:07	22:00:07	1,562.24
	10:50:13	23:00:13	1,562.24
	11:50:19	24:00:19	1,562.24
	17:50:00	30:00:00	1,562.24
	23:50:08	36:00:08	1,562.24
	05:50:17	42:00:17	1,562.24
	11:02:53	47:12:53	1,561.22
24	11:50:11	48:00:11	1,561.22
	17:50:20	54:00:20	1,561.22
	21:05:15	57:15:15	1,560.20
	21:50:16	58:00:16	1,560.20
	22:50:22	59:00:22	1,560.20
	23:50:14	60:00:14	1,560.20
	05:50:09	66:00:09	1,560.20
	11:50:17	72:00:17	1,560.20
25	17:50:26	78:00:26	1,560.20
	22:16:25	82:26:25	1,559.18
	22:50:28	83:00:28	1,559.18
	23:50:07	84:00:07	1,559.18
	05:50:01	90:00:01	1,559.18
	11:50:23	96:00:23	1,559.18
26	17:50:18	102:00:18	1,559.18
	23:16:10	107:26:10	1,558.16
	23:50:26	108:00:26	1,558.16
	05:50:21	114:00:21	1,558.16
	11:50:16	120:00:16	1,558.16
	17:50:24	126:00:24	1,558.16
27	22:22:06	130:32:06	1,557.14
	22:50:26	131:00:26	1,557.14
	23:50:05	132:00:05	1,557.14
	05:50:13	138:00:13	1,557.14
	11:50:08	144:00:08	1,557.14
	14:55:14	147:05:14	1,556.12
28	15:50:18	148:00:18	1,556.12
	16:50:24	149:00:24	1,556.12
	17:50:30	150:00:30	1,556.12
	23:50:11	156:00:11	1,556.12
	05:50:19	162:00:19	1,556.12
	11:24:24	167:34:24	1,555.10
	11:50:14	168:00:14	1,555.10
29	12:30:00	168:40:00	1,555.10

1465

- 1464

1463

1462

1460

1457

K-M 1/2 X 1/2 TO THE INCH 40 X 1/2 INCHES
REPRODUCED BY MICROFILM INTL. EAST LANSING, MI, U.S.A.

47 0700

1514

1513

1512

1511

1510

1509

1508

1507

1506

1505

1504

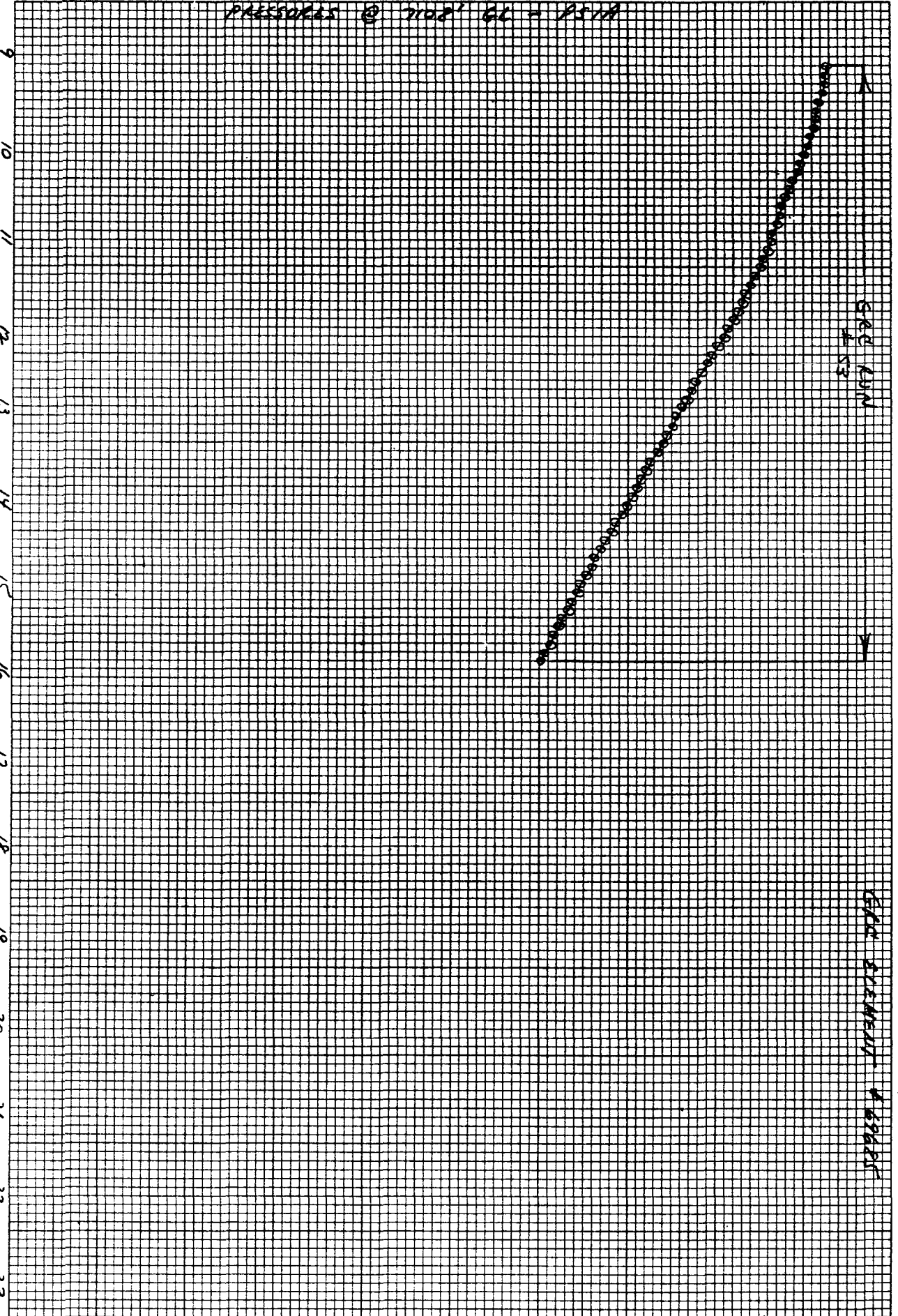
PRESSURES @ 702' G.C. - 751A

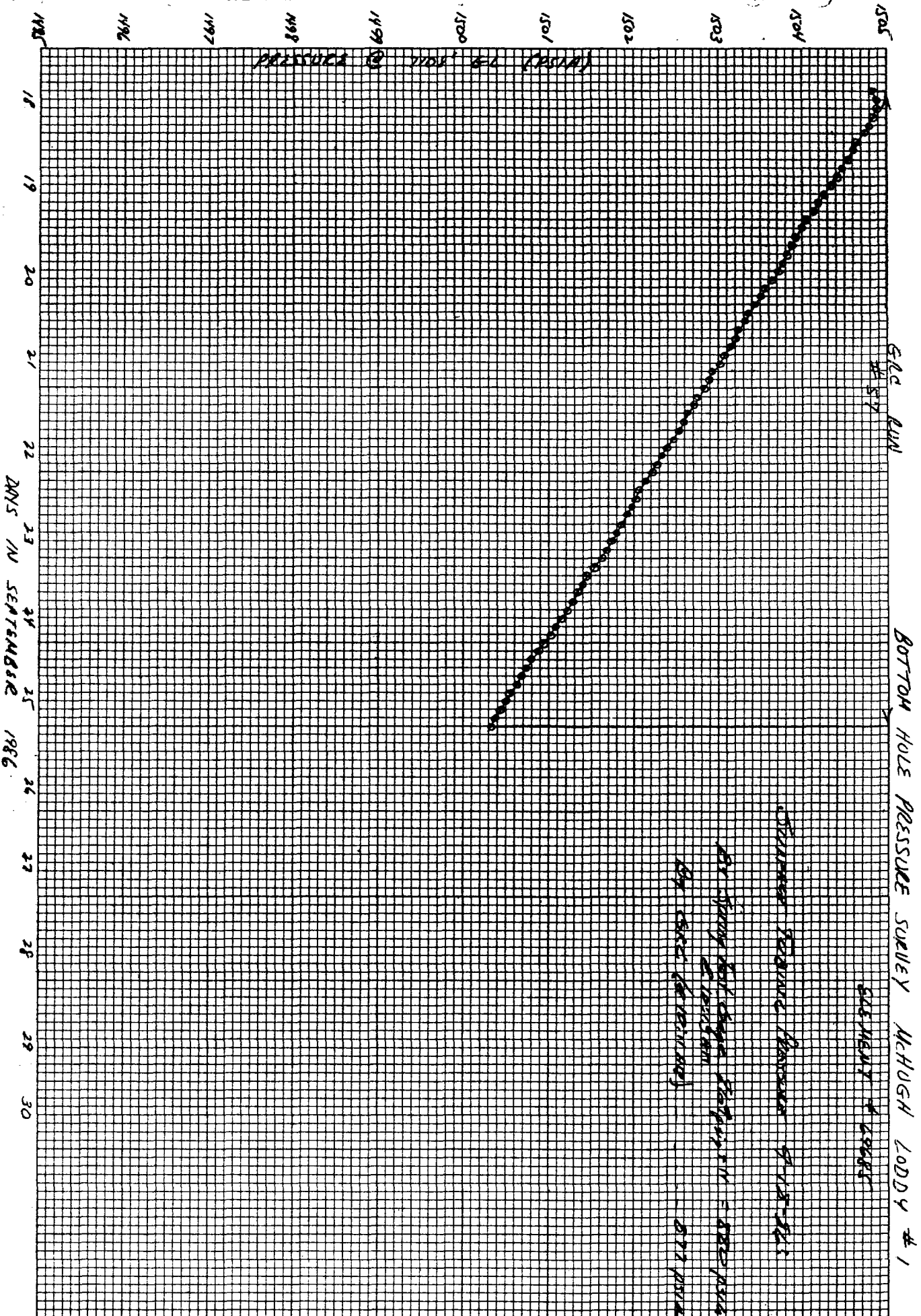
BOTTOM HOLE PRESSURE SURVEY McHUGH LODDY #1

GAUGE #3

GAUGE #1

DAYS IN SEPTEMBER 1986

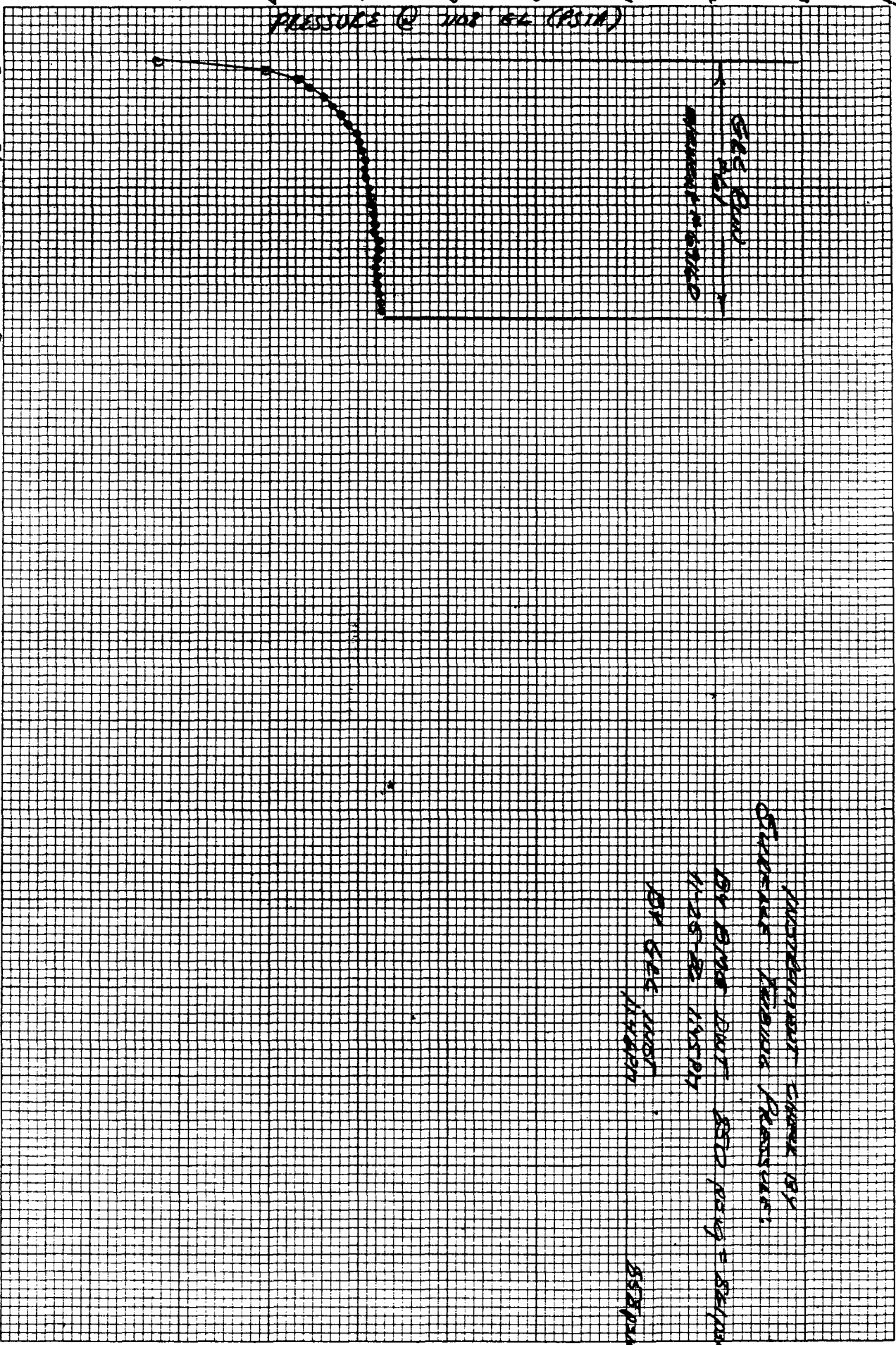




N14 N15 N16 N17 N18 N19 N20 N21 N22 N23 N24

PRESSURE @ 100' RL (PSIA)

25 26 27 28
DAYS IN ABU, 1986



BOTTOM HOLE PRESSURE SURVEY MCHUGH LODDY #1

INDEPENDENT CHECK BY
 STRAINER TUBING PRESSURE:
 BY BOND DONT BTD 10549 = 8510
 BY GLE TIGHT 8520
 BSE/PAK

SAMPLE SHOWS FROM MUD LOGS
GAVILAN MANCOS POOL

BENTONITE
GIL CONSERVATION COMMISSION
Serial No. <u>8946 8950</u>
Case No. <u>9113+9114</u> No. <u>4</u>
Site No. <u>Mesa Grande</u>
Monitoring Date <u>3-30-87</u>

MALLON-MESA GRANDE RESOURCES et al.
GAVILAN MANCOS POOL
GAVILAN AREA
RIO ARRIBA COUNTY, NEW MEXICO

HYDROCARBON SHOW SHEET

SHOW # 7

OPERATOR Mallon Oil Company

LEASE NAME Post Fed 13-6 COUNTY Rio Arriba STATE NM

SHOW INTERVAL: FROM 7050' TO 7062'

DRILL RATE: ABOVE 5 min/ft THROUGH 1.5 min/ft BELOW 3.5 min/ft

DRILLING FLUID: WT _____ VS _____ WL _____ PH _____ CK _____ CL _____

GAS-CHROMATOPGRAPH DATA

FLUID: MUD AIR MIST

	TOTAL UNITS	ppm C1	C2	C3	C4	C5	OTHER
BEFORE	125	6,000	1,000	300	200		
DURING	150	8,000	1,800	1,000	200		
AFTER	100	5,000	700	200	TR		

POSITY: POOR FAIR GOOD

TYPE intrgranular

STAIN: NONE POOR FAIR GOOD

COLOR occ % bn

FLUORESCENCE: NONE POOR FAIR GOOD

MINERAL EVEN SPOTTY

COLOR occ % dull yell

CUT: NONE POOR FAIR GOOD

COLOR slow strmg cut

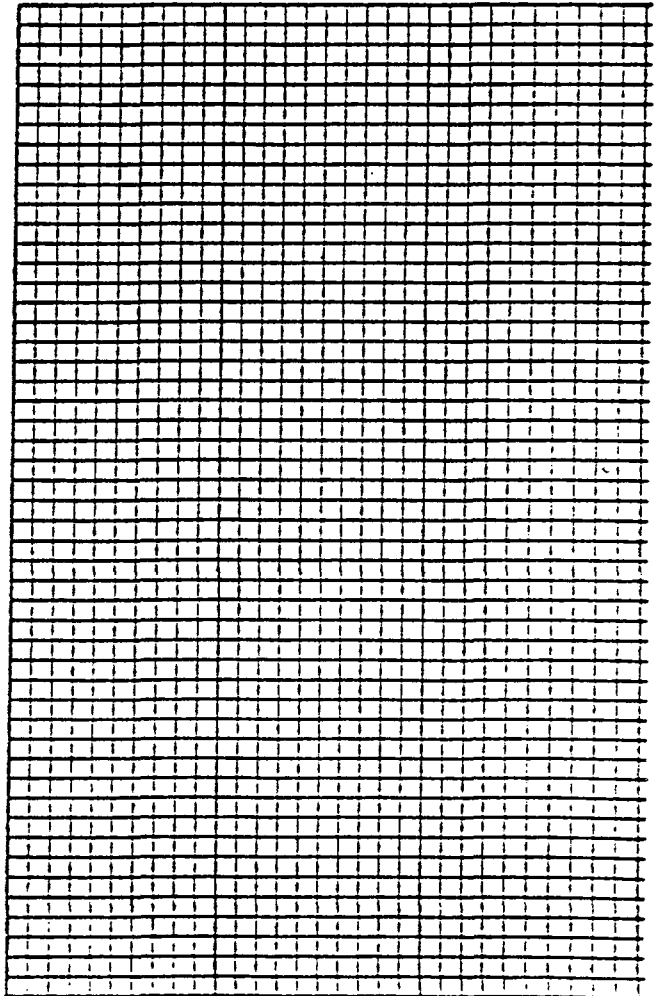
SAMPLE QUALITY: POOR FAIR GOOD

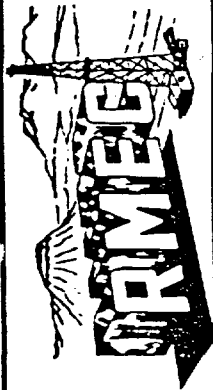
LAG 67 min

SHOW LITHOLOGY: SS-lt gv-gv, bn, v f g, intrbd
w/SH, arg, rnd, m std

REMARKS: Gallup Formation

ZONE DESCRIBED BY _____





ROCKY MOUNTAIN GEO-ENGINEERING CO.

WELL SITE GEOLOGY - MUD LOGGING

2450 INDUSTRIAL BLVD.

PHONE 243-3044

GRAND JUNCTION, COLORADO 81501

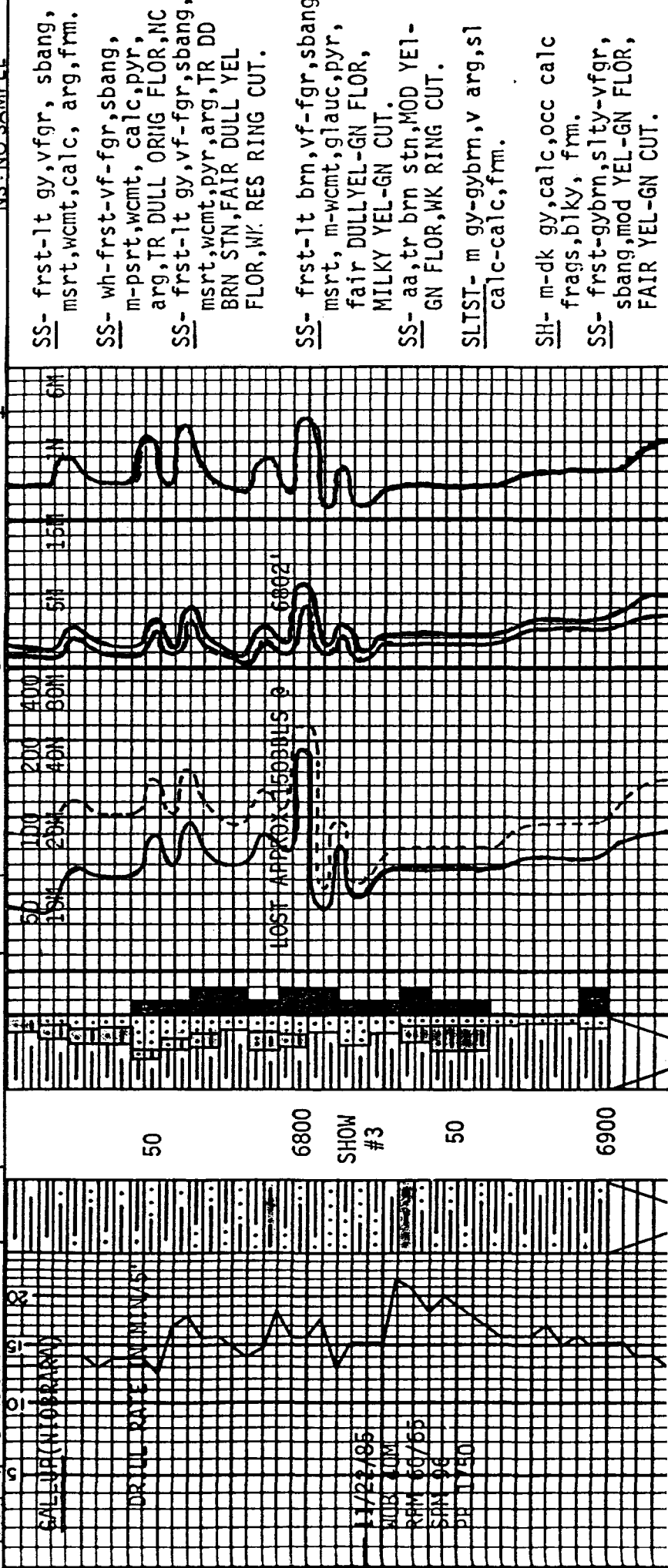
COMPANY MESA GRANDE RESOURCES
 WELL BEARCAT#1
 FIELD BASIN DAKOTA
 ELEVATION GL: 7234' KB: 7246'

LOCATION SEC 22 T25N R02W
 COUNTY RIO ARRIBA
 STATE NEW MEXICO
 DRILLING FLUID H₂O/STARCH/GEL

FROM 586' TO 7907'
 DEPTH LOGGED -
 DATE LOGGED 11/7/85 - 11/26/85
 ENGINEERS JAY DEAN CARTER

OIL SHOW
 TRACE
 CORE NO. NB-NEW BIT
 NR-NO RETURNS
 CO-CIRCULATE OUT
 NS-NO SAMPLE

DOLOMITE
 CHERT
 SHALE
 SANDSTONE
 COAL
 ANHY-GYP
 ✓✓✓







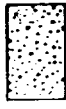






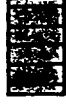









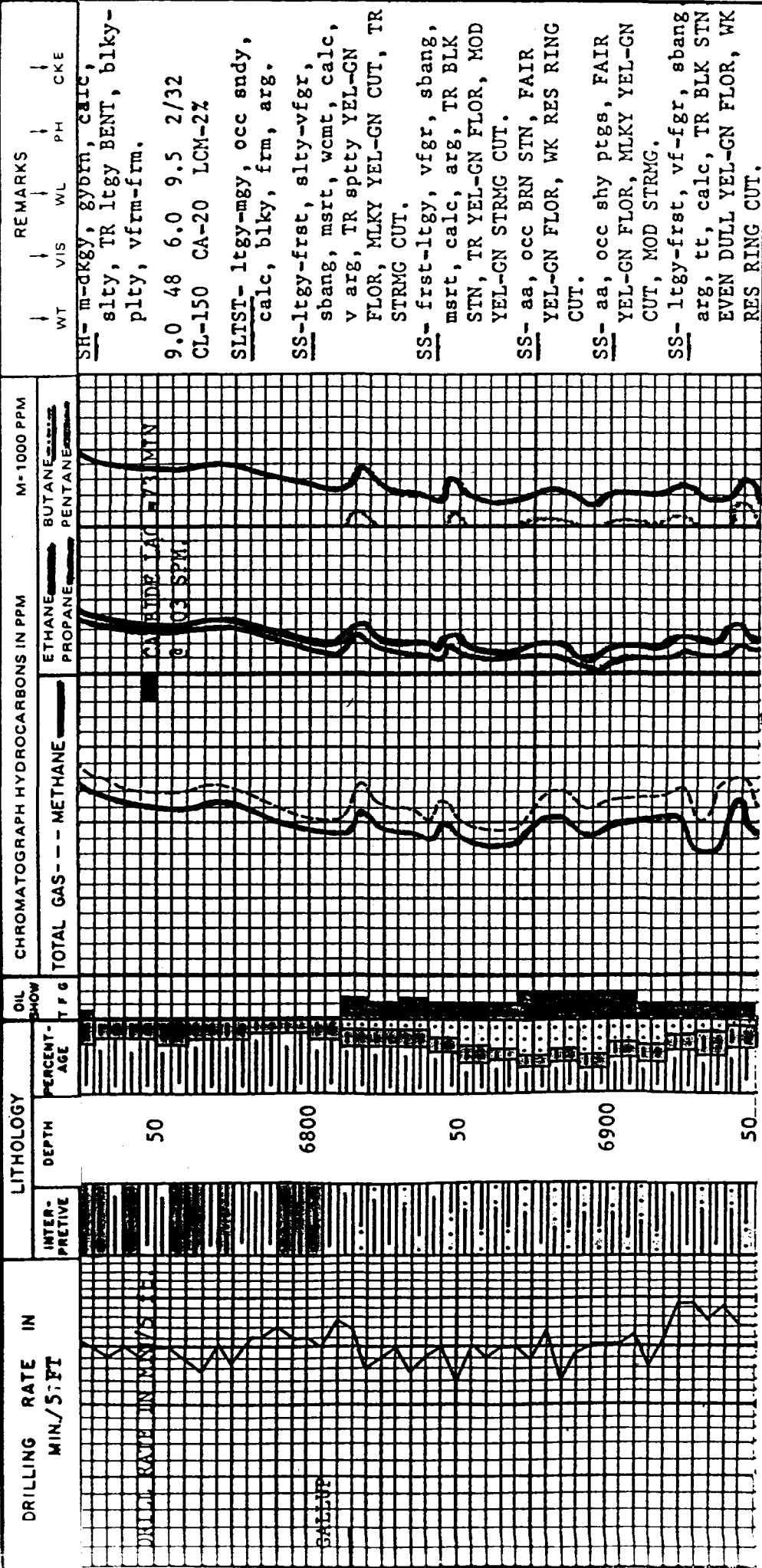
COMPANY MESA GRANDE RESOURCES
 WELL INVADER FEDERAL # 1
 FIELD GAVILAN PROSPECT
 ELEVATION GL:7335' KB:7347'

LOCATION 1040' FNL, 850FWL, SECL, T24N, R02W
 COUNTY RIO ARriba
 STATE NEW MEXICO
 DRILLING FLUID LSND

DEPTH LOGGED
 DATE LOGGED 1/22/86
 ENGINEERS JAY DEAN CARTER -
 BRUCE WEINBERGER

FROM 3070' - 8104'
 2/6/86

	SHALE		DOLOMITE		OIL SHOW		TRACE		CORE NO.		NB-NEW BIT
	SANDSTONE		CHERT		COAL		FAIR		DST NO.		NR-NO RETURNS
	LIMESTONE		SALT		ANHY-GYP		GOOD		DEVIATION		CO-CIRCULATE OUT
					SILTSTONE						NS-NO SAMPLE
											TG-TRIP GAS



ATTCO

carbon well logging

(505)327-4039 • FARMINGTON N.M.87401

COMPANY MESA GRANDE RESOURCES, INC.

WELL NO 1 GAVILAN - HOWARD

FIELD WILDCAT

COUNTY RIO ARRIBA STATE NEW MEXICO

KB 7293

ELEV. 617282

LOCATION 1850' FNL-1650' FWL, SEC 23-T25N-R2W

LOGGED BY PIPPIN

UNIT 2 PHONE 505-327-4039

DEPTH LOGGED 217' TO 8020' DATE LOGGED 10-10-83 TO 10-29-83

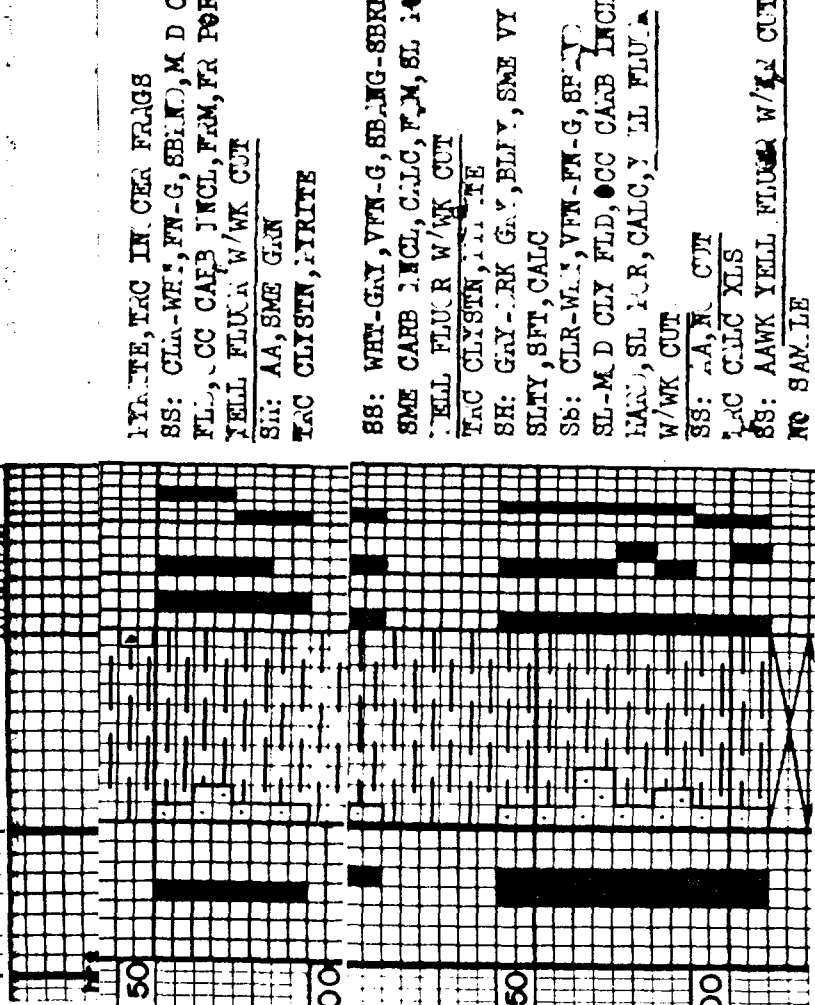
LEGEND

- ANHYDRITE
- CONGLOMERATE
- GRANITE WASH
- SALT
- CHERT
- DOLOMITE
- LIMESTONE
- SHALE
- COAL
- GRANITE
- SANDSTONE

REMARKS
WT - VIS - WL - CK - PH - CL

GAS ANALYSIS
HOT WIRE --- METHANE --- BUTANE
CUTTINGS ETHANE --- --- PENTANE
PROPANE --- ---

LITHOLOGY



REMARKS
WT - VIS - WL - CK - PH - CL
METHANE, TAC IN CER FRAGS
SS: CLR-WH, FN-G, SB(LN), M D CL
FLD, OCC CARB INCL, F.M, FR FOR
YELL FLUOR W/WK CUT
SH: AA, SME GAY
TAC GLYSTRN, PYRITE
SS: WHY-GAY, VFN-G, SB, MG-SB(K)
SME CARB INCL, CALC, F.M, SL
YELL FLUOR W/WK CUT
TAC GLYSTRN, PYRITE
SH: GAY-BLK GAY, BLY, SME VY
SLTY, SFT, CALC
Sb: CLR-WL, VFN-FN-G, SP, YD
SL-M D CLY FLD, OCC CARB INCL,
MAY, SL FOR, CALC, Y LL FLUOR
W/WK CUT
SS: AA, N CUT
TAC CALC XLS
SS: AAWK YELL FLUOR W/WK CUT
NO SAM. DE

HYDROCARBON SHOW SHEET

SHOW # 6

OPERATOR Mallon Oil Company

LEASE NAME Davis Fed Com 3-15 COUNTY Rio Arriba STATE NM

SHOW INTERVAL: FROM 7,070 TO 7,078

DRILL RATE: ABOVE 5 THROUGH 4 BELOW _____

DRILLING FLUID: WT 9.0 VS 48 WL 6,4 PH 9.5 CK 2/32 CL 500

GAS-CHROMATOPGRAPH DATA

FLUID: MUD AIR MIST

	TOTAL UNITS	ppm C1	C2	C3	C4	C5	OTHER
BEFORE	100	7,000	500	400	tr		
DURING	150	12,500	1,500	1,200	tr		
AFTER							

POROSITY: POOR FAIR GOOD

TYPE intergranular

STAIN: NONE POOR FAIR GOOD

COLOR _____ % _____

FLUORESCENCE: NONE POOR FAIR GOOD

MINERAL EVEN SPOTTY

COLOR 10-20 % dull yell-org

CUT: NONE POOR FAIR GOOD

COLOR gd-strmng yell cut

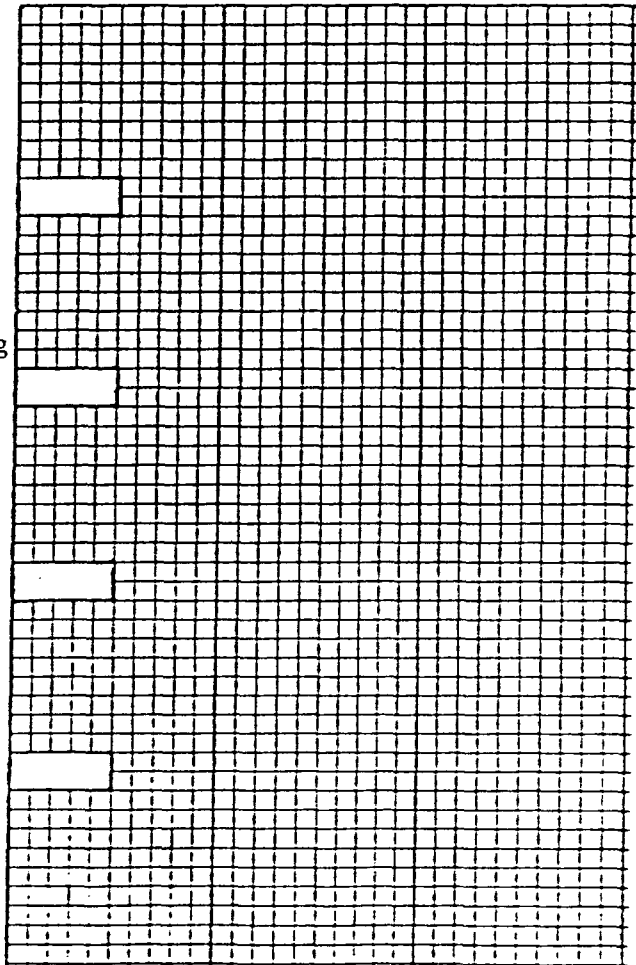
SAMPLE QUALITY: POOR FAIR GOOD

LAG 58 mins

SHOW LITHOLOGY: SS-lt gybn, gybn, v-m arg, ang,
m-p std, hrd

REMARKS: _____

ZONE DESCRIBED BY _____



HYDROCARBON SHOW SHEET

SHOW # 9

OPERATOR Mallon Oil Company

LEASE NAME Davis Fed Com 3-15 COUNTY Rio Arriba STATE NM

SHOW INTERVAL: FROM 7,108 TO 7,116

DRILL RATE: ABOVE 10.5 THROUGH 3 BELOW 12.5

DRILLING FLUID: WT 9.2+ VS 75 WL 5.6 PH 9.0 CK 2/32 CL 500

GAS-CHROMATOPGRAPH DATA

FLUID: X MUD AIR MIST

	TOTAL UNITS	ppm C1	C2	C3	C4	C5	OTHER
BEFORE	40	1,500	750	500	tr		
DURING	80	5,000	1,800	1,000	tr		
AFTER	20	1,200	500	400	tr		

POROSITY: POOR X FAIR GOOD

TYPE intergranular

STAIN: X NONE POOR FAIR GOOD

COLOR %

FLUORESCENCE: NONE POOR X FAIR GOOD

 MINERAL X EVEN SPOTTY

COLOR 20 % dull yell

CUT: NONE POOR X FAIR GOOD

COLOR gd cut

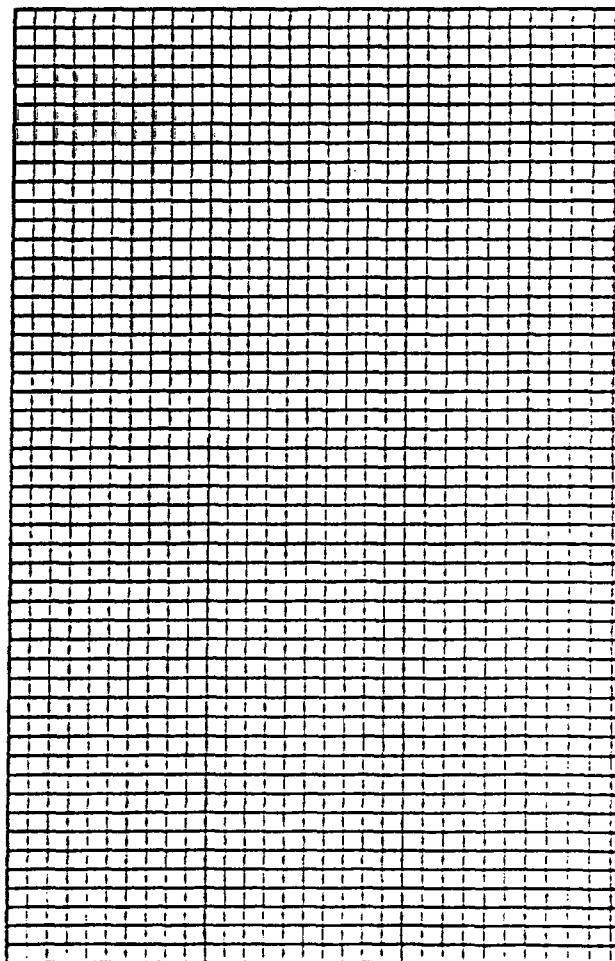
SAMPLE QUALITY: POOR FAIR X GOOD

LAG 60 mins

SHOW LITHOLOGY: SS-intrbrd w/SH,vf g,off wht
m std,subrnd,frm

REMARKS: show from drill cuttings while
drilling a core

ZONE DESCRIBED BY

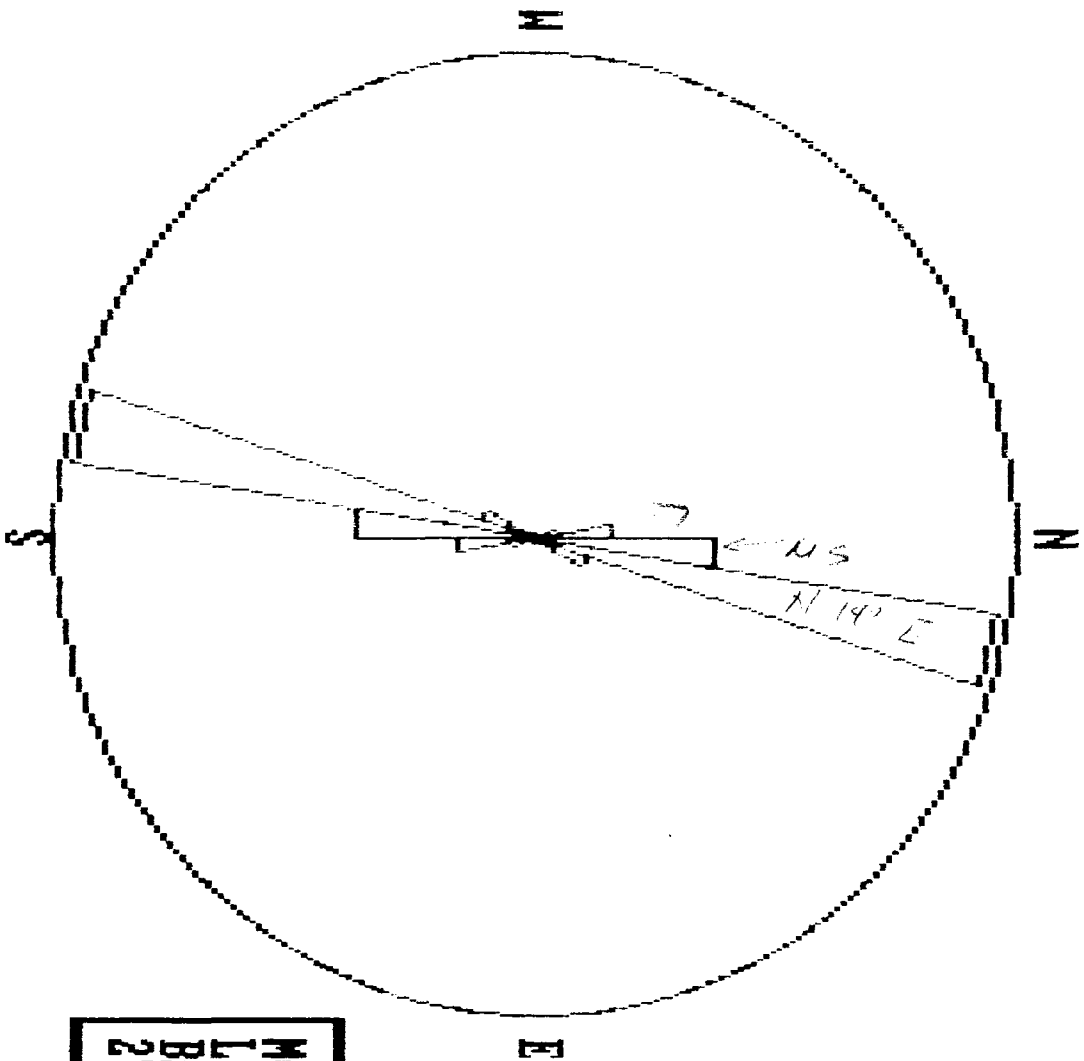


MR. LeMay

Mobil

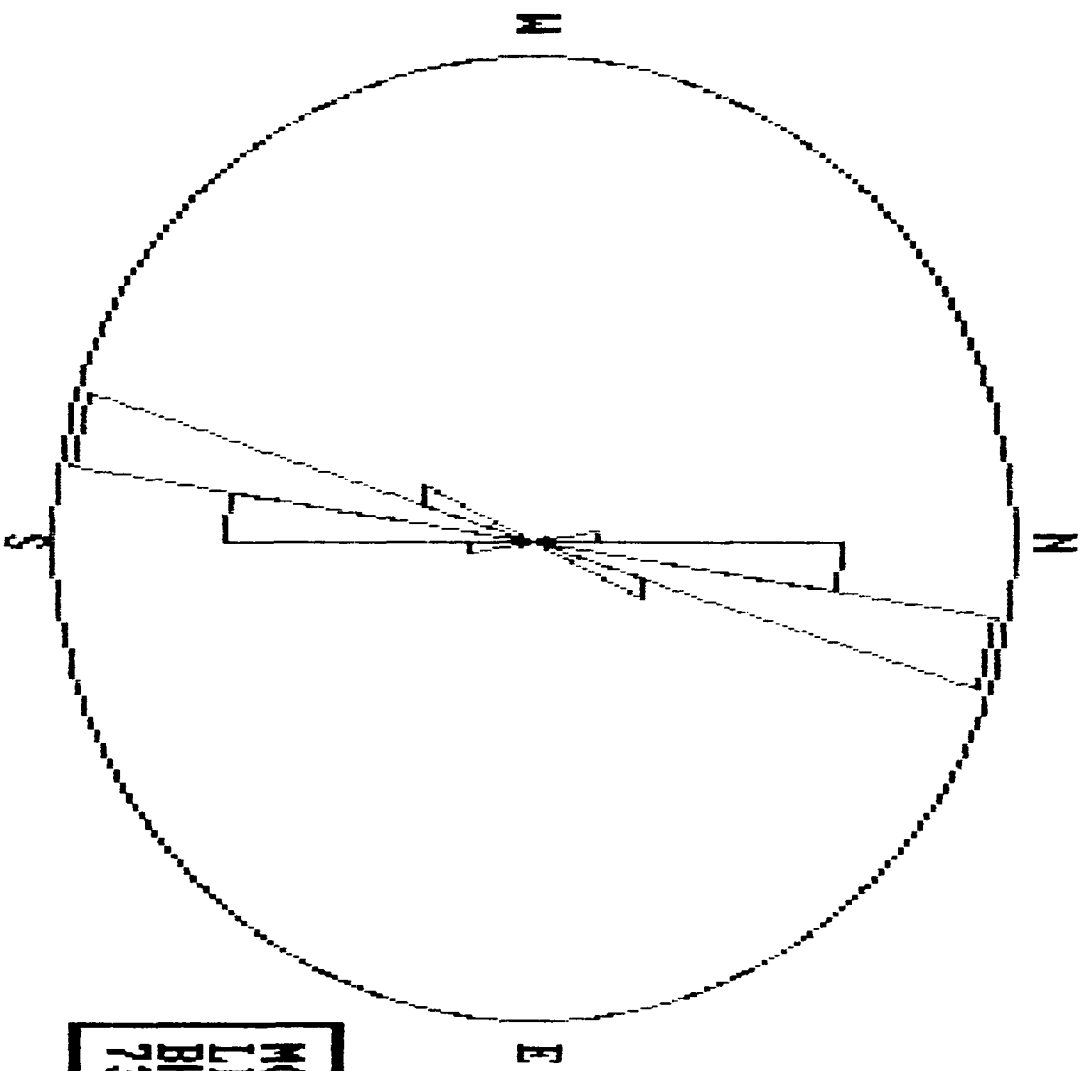
BOREHOLE TELEVIEWER EXHIBITS

BEFORE THE	
OIL CONSERVATION COMMISSION	
Santa Fe, New Mexico	
Case No. ^{8946 8950} <u>913 9114</u>	Exhibit No. <u>1</u>
Submitted by <u>Mobil</u>	
Hearing Date <u>3-30-87</u>	



CLASS SIZE = 10
 MAX. RADIAL = 154
 MEDIAN = 14

MOBIL - MPTM
 LINDRITH B-73
 BHTV FRACTURE STRIKE
 272 FRACTURES



CLASS SIZE = 10
 MAX. RADIAL = 35
 MEDIAN = 14

MOBIL - MPTM
 LINDRITH B-74
 BHTU FRACTURE STRIKE
 73 FRACTURES