

Submit 3 Copies
to Appropriate
District Office

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
Revised 1-1-89

OIL CONSERVATION DIVISION

DISTRICT I

P.O. Box 1980, Hobbs, NM 88240

DISTRICT II

P.O. Drawer DD, Artesia, NM 88210

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

WELL API NO.

3004524960

5. Indicate Type of Lease

STATE ☒

FEE ☐

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A
DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT"
(FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name

State Gas Com BW

1. Type of Well:

OIL
WELL ☐

GAS
WELL ☒

OTHER

2. Name of Operator

AMOCO PRODUCTION COMPANY

Attention

Pat Archuleta

8. Well No.

1

9. Pool name or Wildcat

Fruitland Coal

4. Well Location

Unit Letter

B

790

Feet From The

NORTH

Line and

1480

Feet From The

EAST

Line

Section

32

Township

32N

Range

10W

NMPM

SAN JUAN

County

10. Elevation (Show whether DF, RKB, RT, GR, etc.)

11.

Check Appropriate Box to Indicate Nature of Notice Report or Other Data
NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐

PLUG AND ABANDON ☐

TEMPORARILY ABANDON ☐

CHANGE PLANS ☐

PULL OR ALTER CASING ☐

OTHER:

Perf and Cavitate

☒

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐

ALTERING CASING ☐

COMMENCE DRILLING OPNS. ☐

PLUG AND ABANDONMENT ☐

CASING TEST AND CEMENT JOB ☐

OTHER: ☐

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Amoco Production Company requests permission to perf and cavitate this well per the attached procedures.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE

Pat Archuleta

TITLE

Staff Assistant

DATE

11-11-1997

TYPE OR PRINT NAME

Pat Archuleta

TELEPHONE NO.

303-830-5217

(This space for State

APPROVED BY

ORIGINAL SIGNED BY _____

TITLE

DEPUTY OIL & GAS INSPECTOR, DIST. #3

DATE

NOV 15 1997

CONDITIONS OF APPROVAL, IF ANY:

State Gas Com BW 1

Version: #1
 Date: November 11, 1997
 Budget: Well Repair
 Work Type: Perf & Cavitate

Objectives:

1. Clean out OH section and cavitate.
2. Perf and stimulate upper coal seams.
3. Place well back on production.

Pertinent Information:

Location:	790' FNL X 1480' FEL; Sec 32-T32N-R10W	Horizon:	FC
County:	San Juan	API #:	30-045-24960
State:	New Mexico	Engr:	Kutas
Lease:	Fee	Phone:	W-(303)830-5159
Well Flac:	842607		H -(303)840-3700
			P--(303)553-6334

Economic Information:

APC WI:	87.5%	Prod. Before Repair:	1291 MCFD
Estimated Cost:	\$191,000	Anticipated Prod.:	2300 MCFD
Payout:	6 Months		
Max Cost -12 Mo. P.O.	\$ 419,333		
PV15:			
Max Cost PV15:			

Note: Economics will be run on all projects that have a payout exceeding ONE year.

Formation Tops: (Formation tops)

Nacimiento:		FT - Cottonwood:	2512'-2596'
Ojo Alamo:	1055'	FT - Cahn:	2693'-2712'
Kirtland Shale:	1370'	Pictured Cliffs:	
Fruitland:	2300'	PBTD:	2713'
FT - Ignacio:	2484'-2500'	TD:	2713'
*(Estimated)			

Bradenhead Test Information:

Test Date:	Tubing:	Casing:	BH:	
Time	BH	CSG	INT	CSG
5 min				
10 min				
15 min				

Comments:

RECEIVED
 NOV 12 1997
 STATE GAS COM
 10000

S ate Gas Com BW 1
Orig. Comp. 8/81
TD = 2713', PBD = 2713'
Page 2 of 2

Version 1

Current wellbore info: 7" CSG @ 2680', OH at 2680-2713', 2 7/8" TBG @ 2677'

Current flow info: 1291 MCFD, FTP= 96 psi, FCP=128 psi, LP=96 psi,

General observations: 1. Well has never been cavitated, only treated w/ acid
2. Well has been producing from 1-1.6 mmcf/d for the last 10 yrs
3. Last tag (3/26/87) indicated fill @ 2699'

Short term plans: 1. Replace WH, cavitate open hole section, perf and fracture stimulate upper coal seams.

1. Install/Check anchors. Inspect location for pit, access, etc.
2. MIRURT
3. ND tree, rig up BOP's w/cavitation capability, complete with ventures on blooie lines. Test BOE. Set plug in 2 7/8" TBG @ 2646'. TOH and lay down 2 7/8" tubing. If tbg looks corroded, send in for inspection
4. Set a CIBP in 7" at 2660'. Load csg. Run CBL log with CCL and GR. Pressure test csg to 3000 psi. NDBOE and change out csg valve to full opening 3 1/8" casing valves. NUBOE and test.
5. TIH w/ 6 1/4" bit, bit sub, drill collars and workstring. Drill out CIBP and cleanout hole to TD of 2713'. Rotate and reciprocate until hole is clean.
6. Perform flow test after unloading well (calibrate all pres gauges before test):
 - a. 1 hour flow through 3/4" choke. Record pres & rate every 15 min
 - b. 1 hour shutin test. Record pres every 15 min
7. Initiate cavitation surges. Work for minimum of 36 hours.
8. TIH w/ 6 1/4" bit, bit sub, drill collars and workstring. Cleanout hole to TD. Rotate and reciprocate until hole is clean.
9. Perform flow test:
 - a. 1 hour flow through 3/4" choke. Record pres & rate every 15 min
 - b. 1 hour shutin test. Record pres every 15 min
10. Repeat steps 7 - 9 and report results to engineer daily.
11. Cleanout to TD @ 2713'. TOH and lay down drill pipe and bit.
12. TIH w/ RBP and set in 7" at 2650' and cap with 10' of sand. Load hole with 500 gal of 10% MSA.
13. RU lubricator and run 4" OD Hollow Steel Carrier (HSC) perforating gun to perforate the following schedule with 19.5 gram charges and 0.45" entrance hole diameter (correlate to BPB Coal Lithology log dated 5/26/81).

COAL ZONES	INTERVAL	No. of Feet	JSPF	No. of Holes
Ignacio	2484-2500	16	4	64
Cottonwood	2512-2530	18	4	72
	2584-2596	<u>12</u>	4	<u>48</u>
Total		46		184

14. Pump acid into formation.
15. Stimulate perforations with the attached Delta Frac Schedule.
16. Flow back frac. After frac cleans up perform flow test as follows:
 - a. 1 hour flow through 3/4" choke. Record pres & rate every 15 min
 - b. 1 hour shutin test. Record pres every 15 min
17. Wash off sand and TOH w/ RBP @ 2650'
18. Cleanout to TD @ 2713'.
19. Perform flow test as follows:
 - a. 1 hour flow through 3/4" choke. Record pres & rate every 15 min
 - b. 1 hour shutin test. Record pres every 15 min
20. RIH w/ 2 7/8" TBG as follows (if hole is stable):
 - 1) 1/2 blind mule shoe and 2' slotted tbg sub
 - 2) 10' 2 7/8" tbg sub
 - 3) 10' 2 7/8" tbg sub
 - 4) 2 7/8" std. SN (2.280" ID)
 - 5) remainder 2 7/8" TBG (All TBG: 6.4# J55)
21. Land bottom of TBG at approximately 2695'.

State Gas Com BW 1

Orig. Comp. 8/81

TD = 2713', PBD = 2713'

Page 3 of 2

Version 1

22. NDBOE. RDMODU. Lock wellhead and notify production that air was used. Return well to production

Dependent on speed of hole stabilization, I estimate this procedure to require approximately 10 days and to cost \$150,000 (see attached AFE form).

Mike Kutas

Work - (303) 830-5159

Pager - (303) 553-6334

Home - (303) 840-3700

Fax - (303) 830-4777

Continuous Fax - (303) 830-4276

Frac Schedule - A

8CZ

Well Name: State Gas Com BW #1
Location: NE, Sec 32, T32N, R10W
County: San Juan
State: New Mexico

KB elev.
API No.
Well Flac
Formation: Upper Fruitland

OPEN HOLE

PERFORATIONS

from	to	net	
	PBTD		
2484	2500	16	FT
2512	2530	18	FT
2584	2596	12	FT
total net interval		46	FT

RATE
45 (bpm)
7 " Casing

Down

well to be shot with " HSC carrier
4 JSPF, 19.5 gm, .45" EHD.

NOTE: The well may be located close to the surface location of an offset deeper completed well.
Cement tops should be evaluated to determine if gas flow may occur due to pressure drop from this completion.

Treatment Schedule

STAGE NUM.	STAGE TYPE	STAGE VOLUME (gallons)	PROP CONC. (lb/gal)	PROP TYPE	FLUID TYPE	QUALITY IPF (%)	SAND TOTAL (lbs)	SUM SAND (lbs)	STAGE TIME (min)	SUM TIME (min)
1	Pad	5,000	0.00	NA	Delta 20	0.00	0	0	2.65	2.65
2	Pad	9,000	1 to 2	40/70	Delta 20	0.00	13500	13500	5.72	8.37
3	Pad	5,000	0.00	NA	Delta 20	0.00	0	0	2.98	11.35
4	SLF	10,396	1.50	12/20	Delta 20	0.00	15594	15594	6.45	17.80
5	SLF	10,212	2.50	12/20	Delta 20	0.00	25530	41124	6.45	24.24
6	SLF	6,920	3.50	12/20	Delta 20	0.00	24219	65343	4.44	28.69
7	SLF	4,609	5.00	12/20	Delta 20	0.00	23046	88389	3.06	31.75
8	SLF	3,503	6.50	12/20	Delta 20	0.00	22770	111159	2.40	34.15
9	SLF	3,364	8.00	12/20	Delta 20	0.00	26910	138069	2.43	36.58
10	Flush	3,861	0.00	NA	Flush	0.00	0	138069	2.30	38.88

Blender and Pumping Schedule

STAGE NUM.	STAGE TYPE	VOLUME FLUID (gallons)	FLUID SUM (gallons)	PROP CONC (lb/gal)	DENSITY (lb/gal)	SLURRY VOLUME (gallons)	SUM SLURRY (gallons)	DIM. FACT	SLURRY RATE (bpm)	N2 RATE (scf/min)
1	Pad	5000	5000	0.00	8.33	5000	5000	1.00	40.00	0
2	Pad	9000	14000	1.50	9.20	9616	9616	1.07	40.00	0
3	Pad	5000	19000	0.00	8.33	5000	5000	1.00	40.00	0
4	SLF	10396	29396	1.50	9.20	11107	16107	1.07	41.00	0
5	SLF	10212	39608	2.50	9.72	11376	27483	1.11	42.00	0
6	SLF	6920	46528	3.50	10.20	8024	35507	1.16	43.00	0
7	SLF	4609	51137	5.00	10.86	5660	41167	1.23	44.00	0
8	SLF	3503	54640	6.50	11.44	4541	45709	1.30	45.00	0
9	SLF	3364	58004	8.00	11.97	4591	50300	1.36	45.00	0
10	Flush	3861	61864	0.00	8.33	3861	54160	1.00	40.00	0

61864
Totals:

Total Injected Volume	61,864	gallons
Water (less tank bottoms)	66,000	gallons
Tanks (400 bbl)	5	tanks
Proppant, 40/70 Arizona Sand	13,500	pounds
Proppant, 12/20 Brady Sand	138,000	pounds
Nitrogen (less cool down)	0	MSCF

Frac Schedule - A

Special Instructions:

- 1 Frac down:
- 2 Optimal frac rate is:
- 3 Anticipated WHTP:
- 4 Pressure on the annulus is:
- 5 Monitor and record annular pressure during frac job.
- 6 Maximum pressure on the casing is:
- 7 Maximum pressure on the tubing is:
- 8 Set pressure relief valve for the frac at:
- 9 Set pressure kick-outs on fluid and N2 pumps at:
- 10 Displace with:
- 11 Displace frac to 2384 ft. (100' above zone), with 10 lb gelled water
- 12 * *Use breaker as required for 40 minutes to 1 hour break at 100 F
- 13 Flow well back as soon as equipment is rigged off location, thru a 1/4" choke.
- 14 No tracer required.
- 15 Please provide Denver with the following # of fracture stimulation reports:
un-bound
- 16 Fluid composition per 1000 gallons base fluid:

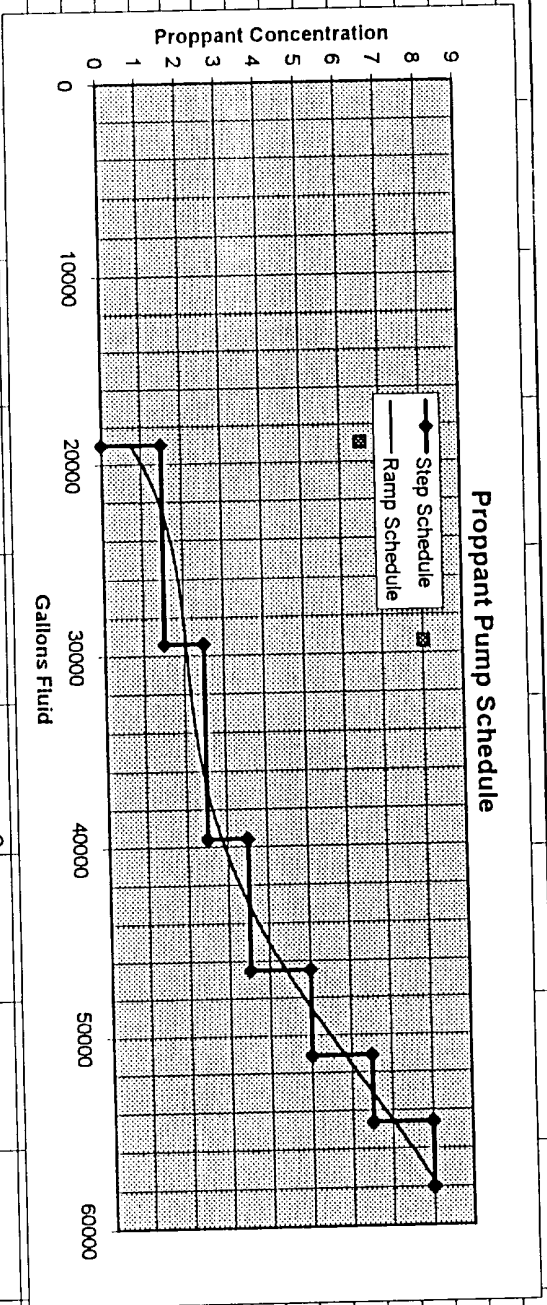
LGC-8	5.00 gallons	(guar liquid gel concentrate)
LOSURF-300	0.50 gallons	(surfactant)
OPTIFLO-HTE	0.50 lbs.	(delayed enzyme breaker)
CLAYFIX II	1.00 gallons	(clay stabilizer)
BC-140	2.00 gallons	(crosslinker & pH control agent)
BE-6	0.19 pounds	(bactericide)
Sand Wedge	0.20 gals per 100 lbs of sand	(proppant flow back control)
GBW-30	0.75 **lb per 1000 gals	(enzyme breaker)
- 17 Perform ALL quality control checks.
- 18 Water trucks and tanks should be clean prior to filling.
- 19 Bactericide should be added to the tanks prior to filling.
- 20 Water used should be city water or water filtered to 5 micron absolute.
- 21 Record strap, pH, temp, and appearance for each tank. Amoco rep to get this data prior to pumping.
- 22 The following pre and post job inventories should be included in the frac report:

Fluid	Proppant
Gas	Chemicals

Sand sieve acceptable limits:

	40/70	20/40	16/30	12/20	SAND
<0.1% REMAIN	30	16	12	8	MESH
> 90% REMAIN	70	40	30	20	MESH
<1.0% GO THRU	100	50	40	30	MESH

Proppant Schedule



Pad	19000	0		
SLF	10396	1.5		
SLF	10212	2.5		
SLF	6920	3.5		
SLF	4609	5.0		
SLF	3503	6.5		
SLF	3364	8.0		

State Gas Com BW 1
Completion/Repair History

790' FNL x 1480' FEL
Sec 32-T32N-R10W
San Juan County, New Mexico

Amoco WI .875
Dugan WI .125

API No. 3004524960

KB = 12'
TD = 2713'

5/31/81	New well (non-stimulated) completion. Landed 2-7/8" tbg @ 2606'. Installed pumping unit.
6/20/81	Pulled pkr, pmp, rod, and tbg. Acidized with 21 BBLS of 15% HCL. Landed 2-7/8" tbg @ 2604' and RTP.
4/23/82	Pulled rods, and pmp. Ran 7-day pressure bomb. Acidized with 21 BBLS 15% HCL. Re-ran pmp and rods.
5/9/83	Ran gravel pack and hooked up to compressor. Landed 2-7/8" tbg @ 2608'.
9/4/84	Ran pressure bomb. Skin +5.26. K = 23 MD.
11/29/84	Acidize with 10,000 gal of 7-1/2 % HCL.
2/28/85	Pulled gravel pack and landed 2-7/8" tbg @ 2690'. Model R SN one joint off bottom (1.78" ID x 2-3/8" 8 rd x 2-7/8" 8rd change overs on each end).
7/1/86	Tagged 15' of fill. CO to 2713'. Landed 2-7/8" tbg @ 2693'.
2/18/87	Tagged 33' of fill. CO. Tagged 5' of fill. Swabbed and recovered 100 BBLS of H2O. Tagged bridge at 2695'. Hit bridge again at 2695'. Tagged 5' of fill. Tagged 14' of fill. CO to 2713'. Landed 2-7/8" tbg @ 2677'.

Amoco Production Company

ENGINEERING CHART

File _____

Appn _____

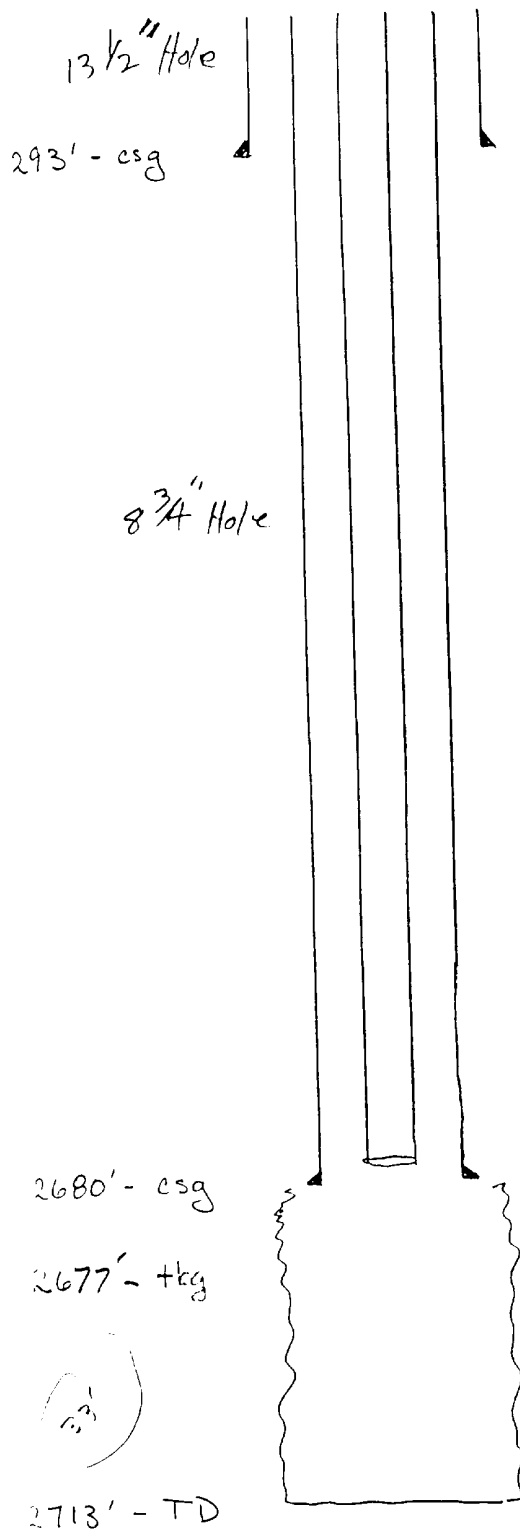
Date 5/27/96

By KQV

SI Press 1043# 6/85

SUBJECT State Gas Com BW 1 Spud 5/81

KB-12', GL-5919'



9 5/8", 32.3#, H-40
cmt w/ 350 SKs
Good returns

Pumped 1981-83
Acid job 6/81 & 4/82
Compressor 5-11/83
Acid job 11/84
At one-time was gravelled
Cleanout 7/86 & 2/87

(1/85) Gas Analysis: 93.7% CH₄ 5.6% CO₂

Coal Top @ 2693'
Coal Btm @ 2711'

FT - 2308'
Sand 2368 2
2447 12
Grease 2476 1
2492 2
Behind 2504 8
Pipe 2515 3
2526 4
2577 5

7", 20# K-55
cmt w/ 540 SKs, 100% Returns
2 7/8"
Underream openhole 13"
2690-2713'

Cahn 2693' 1

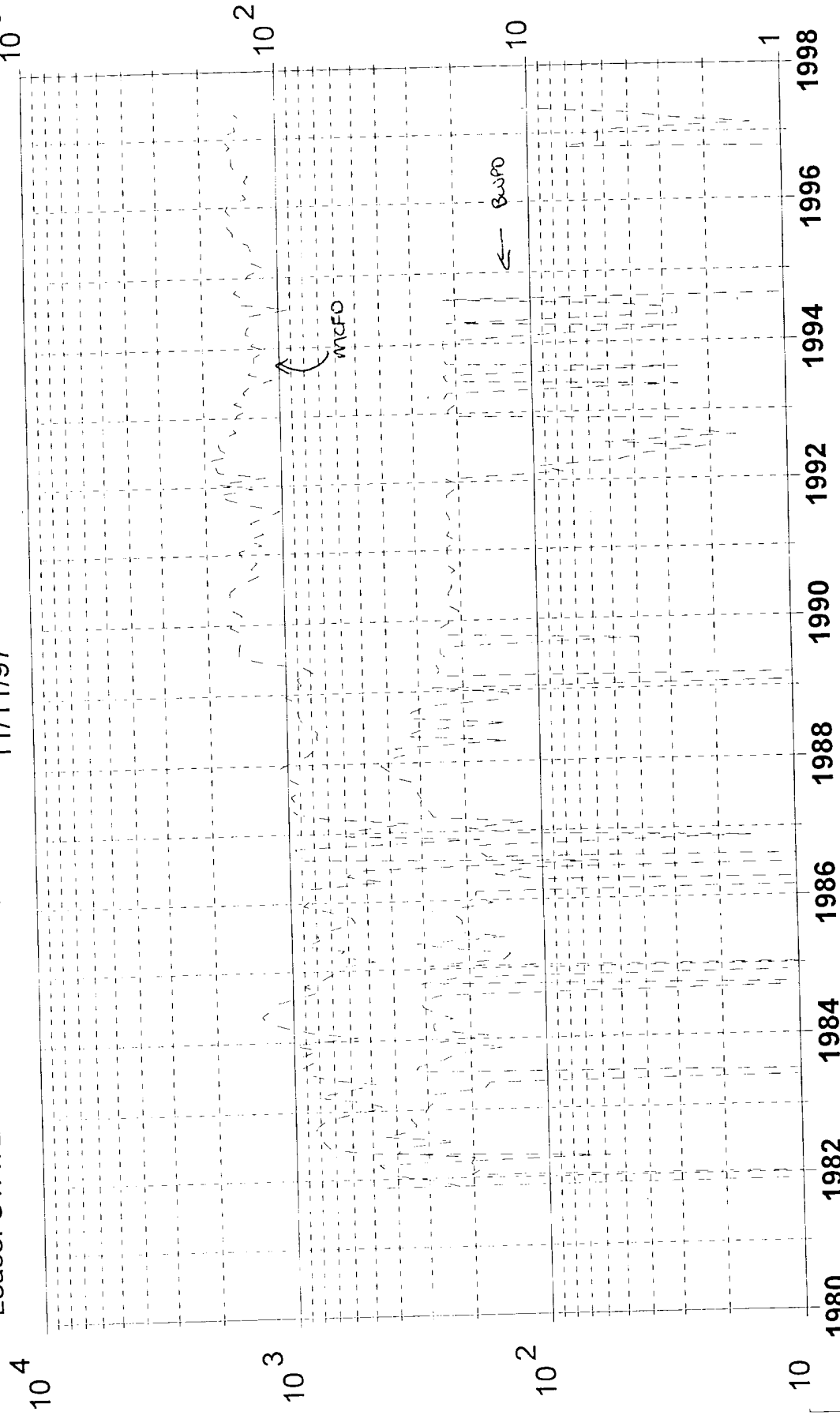
Total Net Coal
54'

Dugan does NOT want to
shut in well

Dwights

Retrieval Code: 251,045,32N10W32B00FT
11/11/97

Lease: STATE GAS COM BW (1)



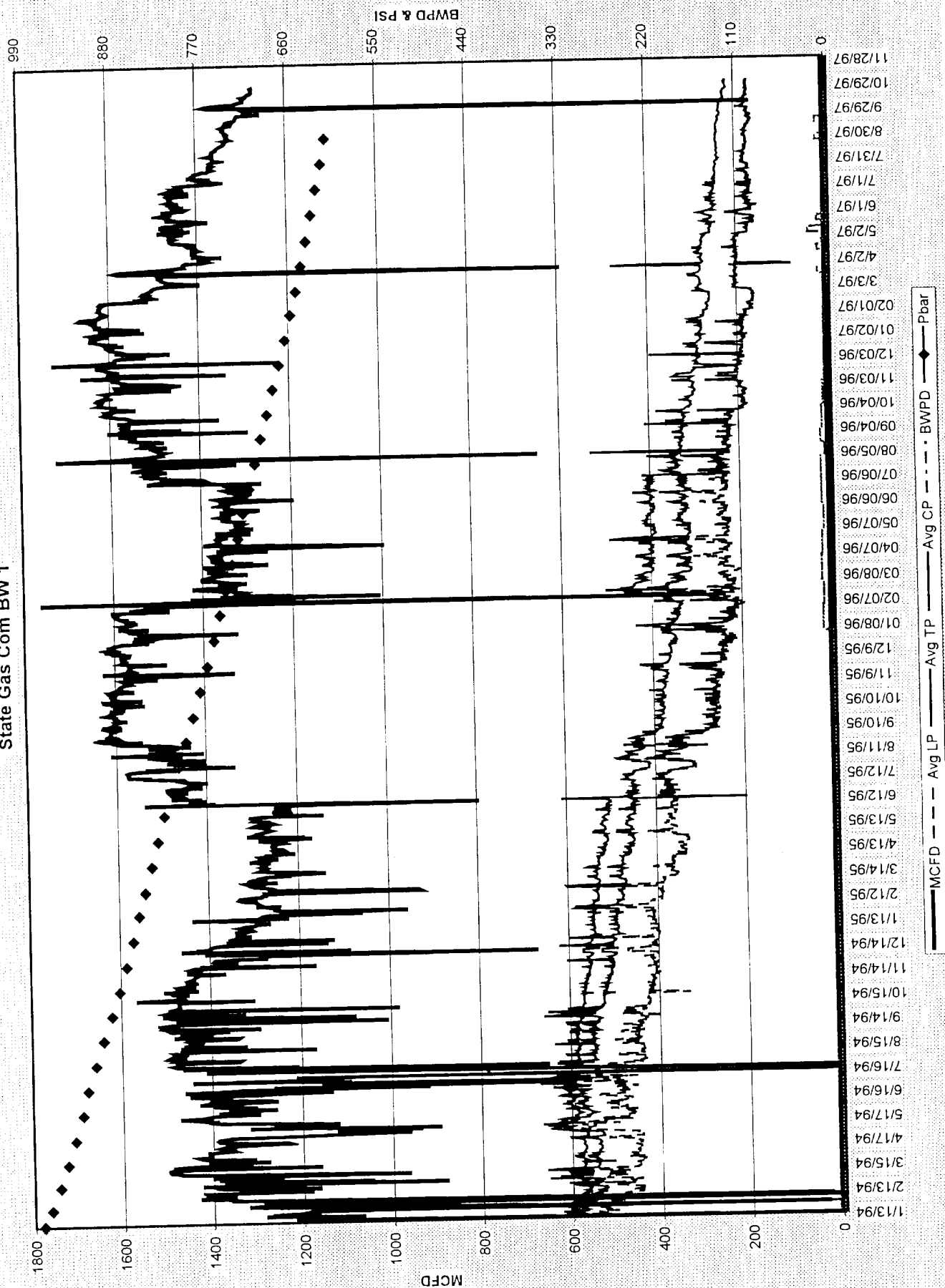
County: SAN JUAN, NM F.P. Date: 11/81

Field: CEDAR HILL (FRUITLAN) Oil Cum: 0 bbl

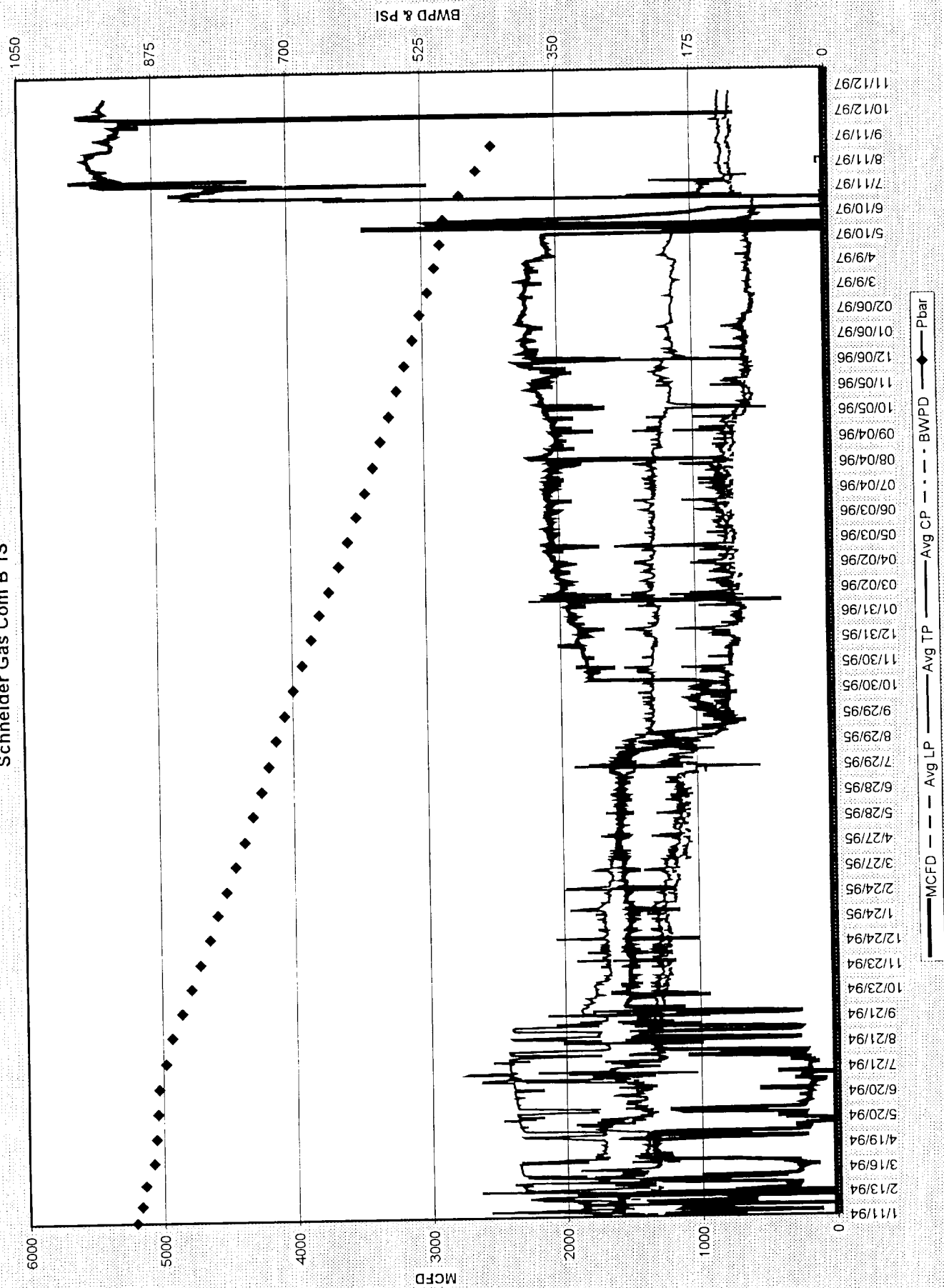
Reservoir: FRUITLAND BASAL Gas Cum: 6241 mmcf

Operator: AMOCO PRODUCTIO Location: 32B 32N 10W

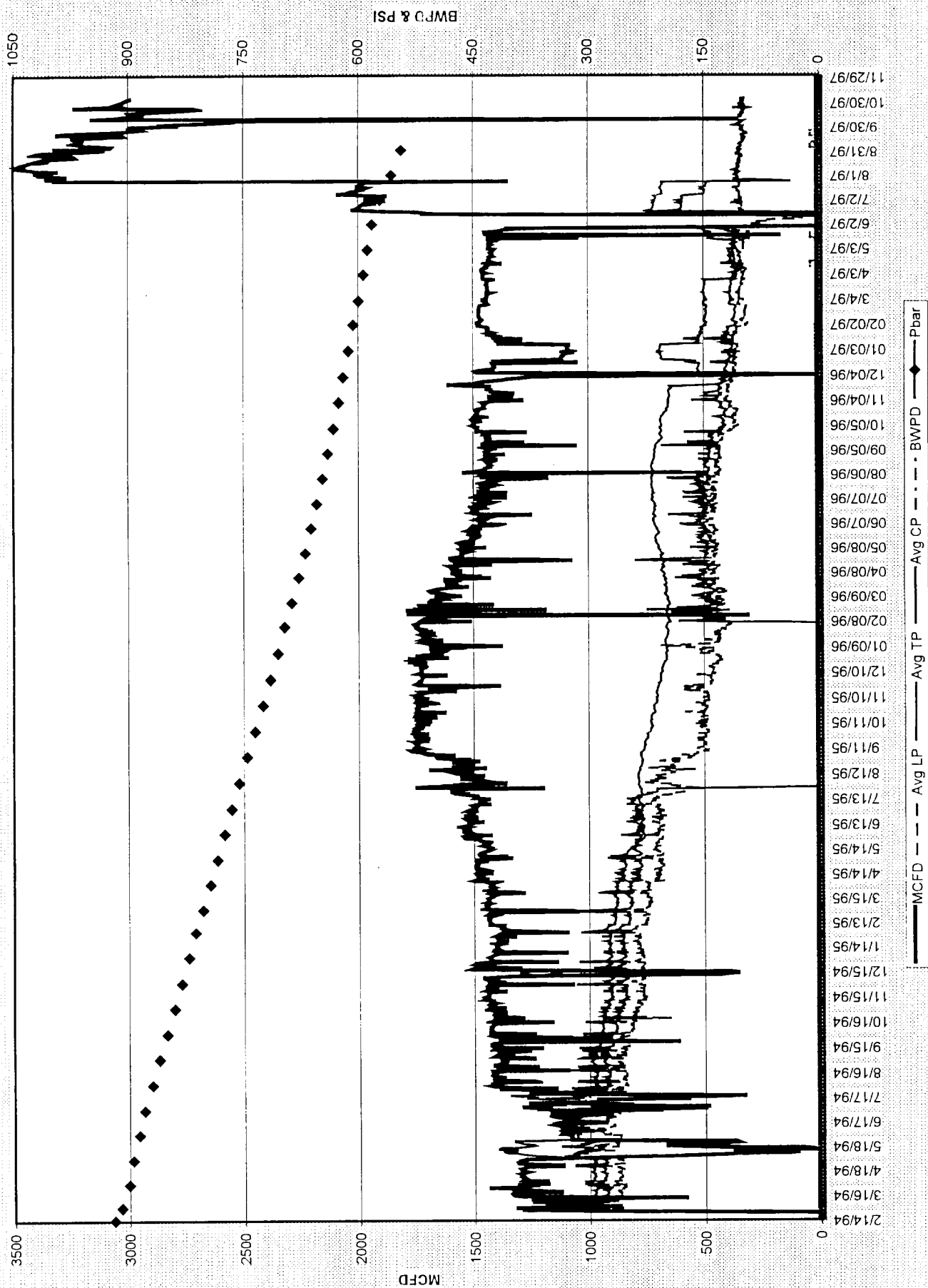
State Gas Com BW 1



Schneider Gas Com B 1S



State Gas Com BX 1





BOREHOLE LOCATION

BOREHOLE STATE GAS COR. 5N2
CLIENT AMCC

AREA San Juan County DEPTH SCALE
240 : 1

COUNTRY U.S.A.

DATE LOGGED May 26, 81 1 OF 4 LOGS

BOREHOLE DATA

PERMANENT DATUM K.V.

ELEVATION OF P.D. 8 P.B. DRILLER K.V.

MEASUREMENTS FROM 6.5' 27.4'

DEPTH REACHED 27.4'

CASING SHOE 2680'

BIT SIZES 1 3/4 TO 2680' 2 1/2 TO 27.4'

CASING SIZES 1 7/8 TO 2680' 2 TO

FLUID DATA

NATURE Calcium Chloride

SG 1.30 PM / SC

LEVEL

VISCOSITY 0.1 Cm. Hekene

Rm at meas temp

BHT

OPERATION DATA

FIRST READING 2707'

LAST READING 1000'

INTERVAL LOGGED 1707'

UNIT - TRUCK NO 66 / V810

ENGINEER KAG / CSN

WITNESS Jim Clawson

EQUIPMENT AND RECORDING DATA

LOG	EQUIPMENT			TAPING			PANEL			CAL COEFF	DEPTHS		
	SONDE	SOURCE	CALIBRATOR	LOG TAPED	RECORD SPEED	DIRECTOR REPLAY	SPEED	T.C. SECS	NORM		FROM	TO	INTERVAL
General	1500	BATH	02	100	20	1	50	1	1.1		2707	1000	1707
TEMP	"	"	02	100	20	1	50	1	1.1		2711	1000	1711
Cal.	"	"	1	100	20	1	50	1	1		2715	1000	1715

ADDITIONAL SONDES RUN

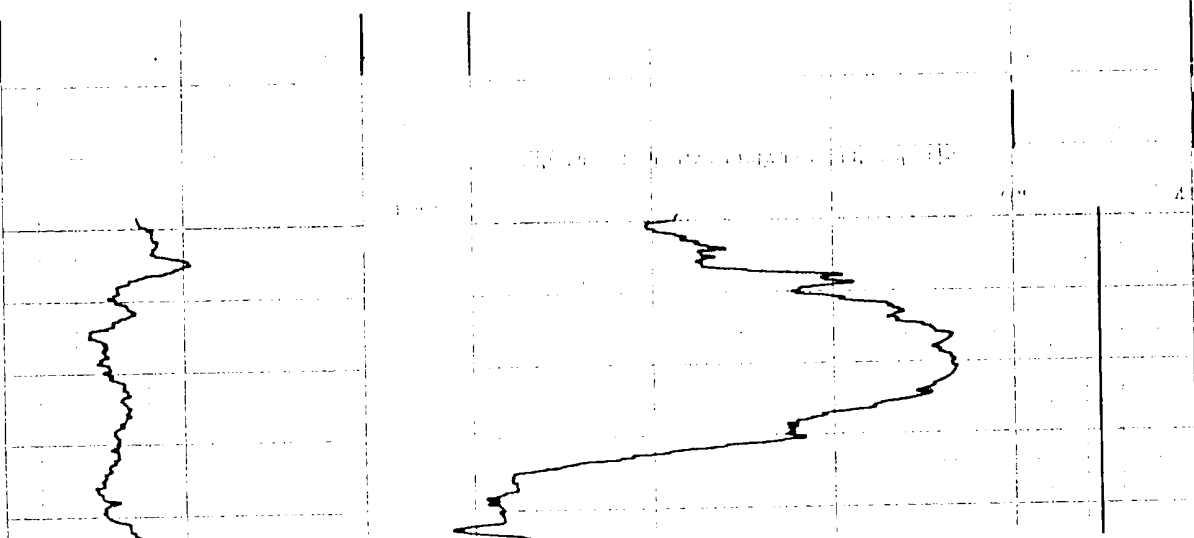
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG
	2707		1:1

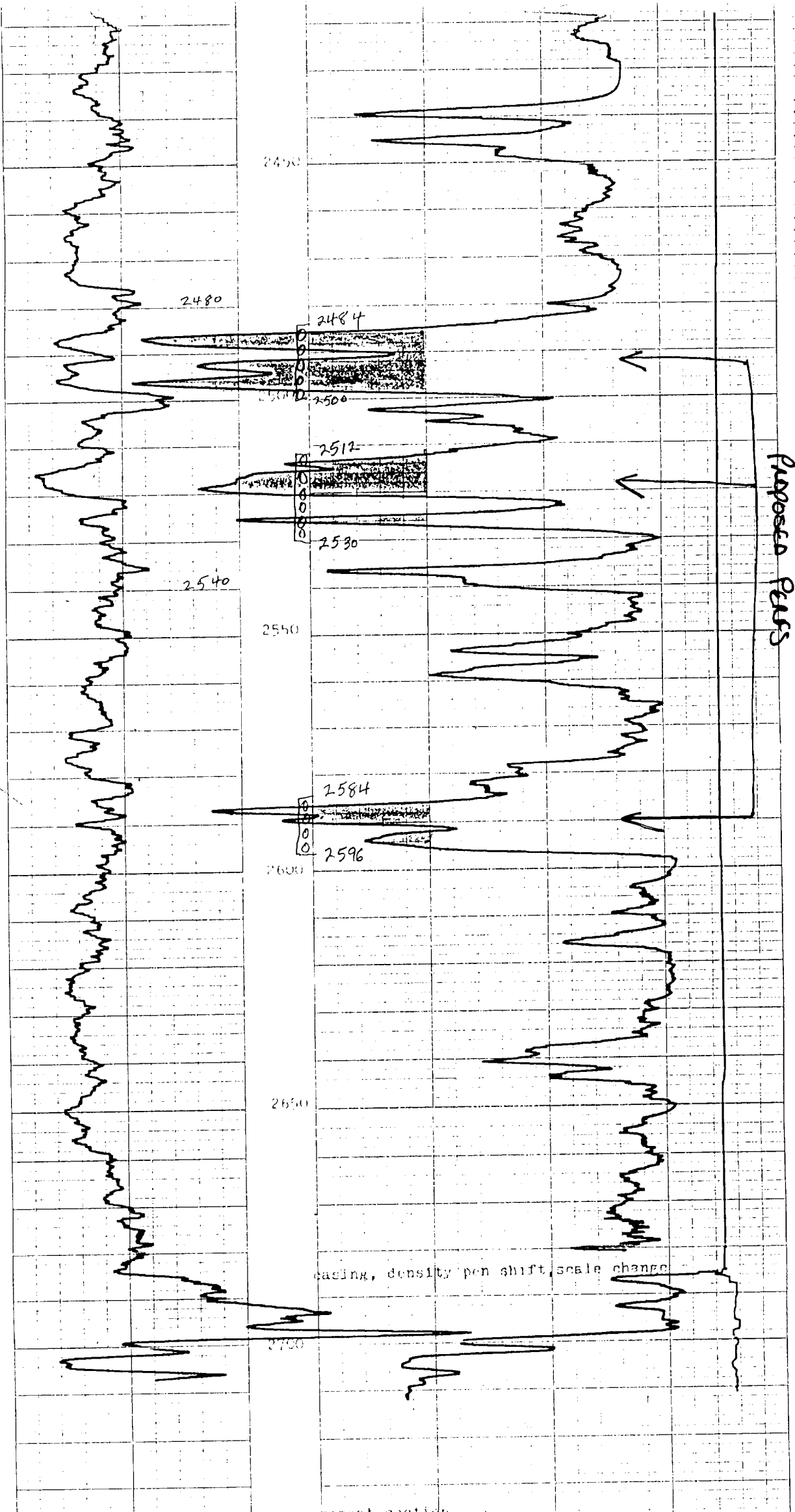
REFER TO
ADDITIONAL
HEADINGS

REMARKS

1. 100' interval from 2707' to 2715'.

DEPTH





repeat section



A GEOSCIENCE EXTENSION OF XCO

303/893-8138
DENVER, COLORADO

COMPANY

WELL NAME

STATE GAS CO. No. 41

CO. N.M.

SI

Location—Sec 32, Twp 12N, Rge 20E

FINISH

4/22/81

Elevation GL 5992' KB 5932' Spud 4/22/81

Interval Logged

300' - 2800'

Total Depth 2800'

Pump #1

5"

Pump Stroke—Length—Pump #1

Pump #2

12"

Pump Liner—Diameter—Pump #1

Pump #2

6"

LOGGING GEOLOGISTS

COMPANY AND RIG PERSONNEL

THE PACIFIC UNIT, ALABAMA

Company Geologist

A. ROSENTHAL

11777 PARTON, LOS ANGELES

Company Foreman

A. MARTINEZ

Dilling Company

ARAPAHOE

3

Tool Pusher

JACK, ARAPAHOE

Type of Mud

Oil-based

300' - 2250' RESISTANCE, 2250' TO OPEN GEL, 1 BARITE

SERVICES PERFORMED

CONVENTIONAL TWO GEOLOGIST LOG, CONTINUOUS

SUPPLYING, MUDLOGGING AND CEMENTATION

HOLE SIZE

DEPTH

1 1/2" - 2 1/2"

2 1/2" - 2800'

2 1/2" - 2800'

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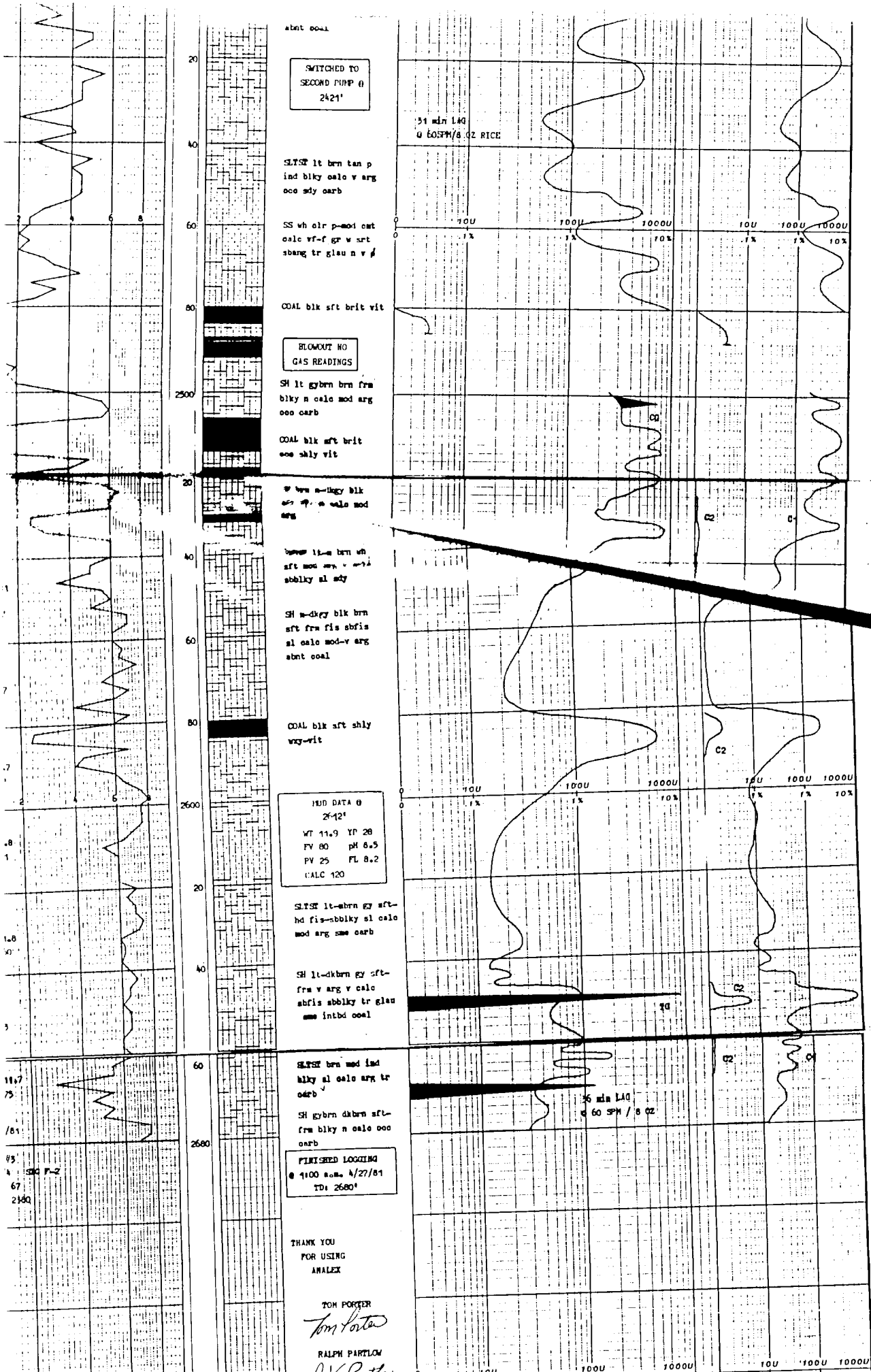
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about coal

SWITCHED TO
SECOND PUMP @
2421'

54 min LAG
@ 60SPH/8 OZ RICE

SLTST lt brn tan p
ind biky oalo v arg
ooo shy oarb

SS wh clr p-mod oad
oalc wf-f gr w art
sbang tr glau n v d

COAL blk sft brit vit

BLOWOUT NO
GAS READINGS

SH lt gybrn brn frm
biky n oalc mod arg
ooo oarb

COAL blk sft brit
ooo shly vit

SH brn m-biky blk
sft frn fis sbfns
al oalc mod-arg

SH m-dkgy blk brn
sft frn fis sbfns
al oalc mod-v arg
sbtnt coal

COAL blk sft shly
vgy-vit

MUD DATA @
2442'

WT 11.9 VP 28
PV 80 pH 8.5
PV 25 FL 8.2
CALC 120

SLTST lt-brn gy sft-
hd fis-sbbiky al oalc
mod arg oarb

SH lt-dkbrn gy sft-
frn v arg v oalc
sbfns sbbiky tr glau
ooo intbd coal

SLTST brn mod ind
biky al oalc arg tr
oarb

SH gybrn dkbrn sft-
frn biky n oalc ooo
oarb

FINISHED LOGGING
@ 1100 a.m. 4/27/81
TD: 2680'

THANK YOU
FOR USING
ANALEX

TOM PORTER

Tom Porter

RALPH PARTLOW

R. Partlow