

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT - " for such proposals

5. Lease Designation and Serial No.
SF - 078387 - A

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No.
KERNAGHAN B #6

9. API Well No.
3004527339

10. Field and Pool, or Exploratory Area
BASIN FRUITLAND COAL

11. County or Parish, State
San Juan New Mexico

1. Type of Well
 Oil Well Gas Well Other

2. Name of Operator
AMOCO PRODUCTION COMPANY

Attention:
Nancy I. Whitaker

3. Address and Telephone No.
P.O. BOX 800 DENVER, COLORADO 80201 303-830-5039

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1280 FNL 1800 FEL B Sec. 29 T 31N R 8W UNIT B

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input checked="" type="checkbox"/> Other DEEPEN RAT HOLE
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*
AMOCO PRODUCTION COMPANY REQUESTS PERMISSION TO DEEPEN THE RAT HOLE ON THE ABOVE WELL ACCORDING TO THE ATTACHED PROCEDURES.

FOR TECHNICAL INFORMATION PLEASE CALL MIKE KUTAS 303-830-5159

Maximum Total Depth - 3750'

RECEIVED
BLM
97 MAR 26 AM 10:27
070 FARMINGTON, NM

RECEIVED
APR 1 1997

OIL CON. DIV.
DIST. 3
Staff Assistant

14. I hereby certify that the foregoing is true and correct
Signed *Nancy I. Whitaker* Title Staff Assistant Date 03-25-1997

(This space for Federal or State office use)
Approved by */s/ Duane W. Spencer* Title _____ Date APR - 9 1997
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

SJOET Well Work Procedure

Kernaghan B 6

Version: #1
Date: March 25, 1997
Budget: Well Repair
Work Type: Deepen/ c/o / C/O wellhead

Objectives:

1. C/O TBG head, c/o fill, deepen for rat hole
 2. Replace 4 1/2" TBG w/2 7/8" TBG
 3. Place well back on production
-

Pertinent Information:

Location:	1280'FNLx1800' FEL; Sect 29B-T31N-R08W	Horizon:	FT
County:	San Juan	API #:	30-045-27339
State:	New Mexico	Engr:	Kutas
Lease:	BLM; SF-078387-A	Phone:	H--(303)840-3700
Well Flac:	70303901		W-(303)830-5159
			P--(303)553-6334

Economic Information:

APC WI:	50%	Prod. Before Repair:	5500MCFD
Estimated Cost:	\$65,000	Anticipated Prod.:	6500MCFD
Payout:	2 Months		
Max Cost -12 Mo. P.O.	\$443M		
PV15:			
Max Cost PV15:			

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

Formation Tops: (Estimated formation tops)

Nacimiento:		Mesaverde:	
Ojo Alamo:		Point Lookout:	
Kirtland Shale:		Mancos Shale:	
Fruitland:	3110-3445'	Gallup:	
Pictured Cliffs:	3470' (Est'd Kernaghan #3)	Graneros:	
Cliff House:		Dakota:	
		Morrison:	

Bradenhead Test Information:

Test Date: 5/96 **Tubing:** 163 **Casing:** 200 **BH:** 0 psi

Time	BH	CSG	INT	CSG
5 min				
10 min				
15 min				

Comments:

Kernaghan B 6

Orig. Comp. 8/89

TD = 3446', PBTD = 3446'

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Kernaghan B 6:

Current wellbore info: 7" CSA 3250', OH at 3250-3446', 4 1/2" TSA 3266', Fill at 3294'KB by 3/18/97 W.L. tag(?)
Current flow info: 5500 MCFD, FTP=59 psi, FCP=60 psi, LP=56 psi; Producing tubing and casing; Well has original TBG head and is currently producing through only one 2 1/8" CSG valve (1.5" ID).

General observations:

1. Well is experiencing loading problems
2. Well was cavitated in 8/89, recavitated in 3/94, and underreamed in 3/94.
3. Ledge and sloughing problems were encountered both times at the Cahn seam at 3400' to TD
4. Well has not responded to lateral compression as anticipated

Short term plans: 1. Replace WH, C/O, deepen, replace tubing

Contingency plans: 1. Run and perf liner (if needed)

Long term plans: 1. Place on artificial lift (if needed); Rathole will be added for gas separation.

1. MIRURT

2. ND tree, rig up BOP's w/cavitation capability, complete with venturies on blooie lines. Test BOE. Set plug in F-nipple in 4 1/2" TBG (3.833" F-nipple set 1 jt off btm, at approx. 3232'). TOH and lay down 4 1/2" tubing
3. Set wireline EZSV in 7" at 3200'. Load csg and pressure test. NDBOE and change out TBG head to allow hanging 2 7/8" TBG (w/full opening 3 1/8" casing valves). NUBOE and test
4. Pick up 4.750" drill collars and 3.500" drill pipe with 6.250" bit, blow hole dry, drill up EZSV, clean out fill from 3,294' to total depth (3446') using air and foam. Drill out to a total depth of 3470'. C/O and stabilize hole as quickly as possible (after reaching TD, trip out to casing shoe and wait for 4-6 hours and check to determine amount of fill and how difficult it is to clean up.

Contingency steps:

A. If hole can not be stabilized, run a blank 5.500" flush joint liner (Hydril 511) from TD back to approx. 3,100'. Install a tricone bit on bottom with a float immediately above bit and a Baker Model SLR-P Liner Hanger Packer. Strip in hole and drill to bottom with power swivel if necessary. Hang liner, lay down drill pipe

B. RU HES, run GR-CCL to identify correct coal seam depths; TIH and perforate liner as follows:

<u>COAL ZONES</u>		<u>PERFORATIONS</u>		
Ignacio	3,279 to 3,294'	3,279 to 3,294'	4 jspf	60 holes
	3,318 to 3,328	3,318 to 3,328	4 jspf	40 holes
Cottonwood	3,355 to 3,374'	3,355 to 3,374'	4 jspf	76 holes
Cahn	3,409 to 3,445'	3,409 to 3,445'	4 jspf	144 holes
		Total		320 holes

5. Pick up and run 2 7/8" TBG as follows:
- 1) 2 7/8" Blind Mule shoe
 - 2) 4' 2 7/8" perf'd tbg sub
 - 3) 2 7/8" std. SN (2.280" ID) with retrievable plug in place
 - 4) remainder 2 7/8" TBG (All TBG: 6.4# J55)

Land bottom of TBG at approximately 3420' (approx. mid-upper Cahn seam). Pull retrievable plug. RDMODU. Turn well over to production. Note: bring well on slowly, well may need swabbing in order to RTP.

Dependent on speed of hole stabilization, I estimate this procedure to require approximately 3-4 days and to cost approximately \$65,000 (see attached AFE form). A liner, if needed to stabilize hole, will add \$25M to the cost of this repair.

If problems are encountered, please contact:

Mike Kutas

(W) (303) 830-5159

(H) (303) 840-3700

(P) (303) 553-6334

Repair Well Cost Detail

Property - KERNAGHAN /B/, Well# 006B29

SAN JUAN County, NM

Property FLAC - 698862

Well FLAC - 703039

Operating Field - BLANCO-MESAVERDE

Amoco Production Company

Ownership Code: 00

Intangibles

Rig Cost	\$32,000
Equipment Rental	\$0
Circulating Media	\$0
Cement and Service	\$0
Packers and Equipment	\$0
Perforate, Log, Wireline	\$3,800
Stimulation	\$0
Labor	\$4,000
Special Equipment	\$0
Fishing	\$0
Other Intangibles	\$8,900
Total Intangibles	\$48,700

Tangibles

Casing	\$0
Tubing	\$7,800
Wellhead	\$8,500
Other	\$0
Total Tangibles	\$16,300

	Net	Gross
Total This Request	\$32,500	\$65,000
Previous Estimate	\$0	\$0
Total to Date Estimate	\$32,500	\$65,000

Amoco Production Company

ENGINEERING CHART

Sheet No _____ Of _____

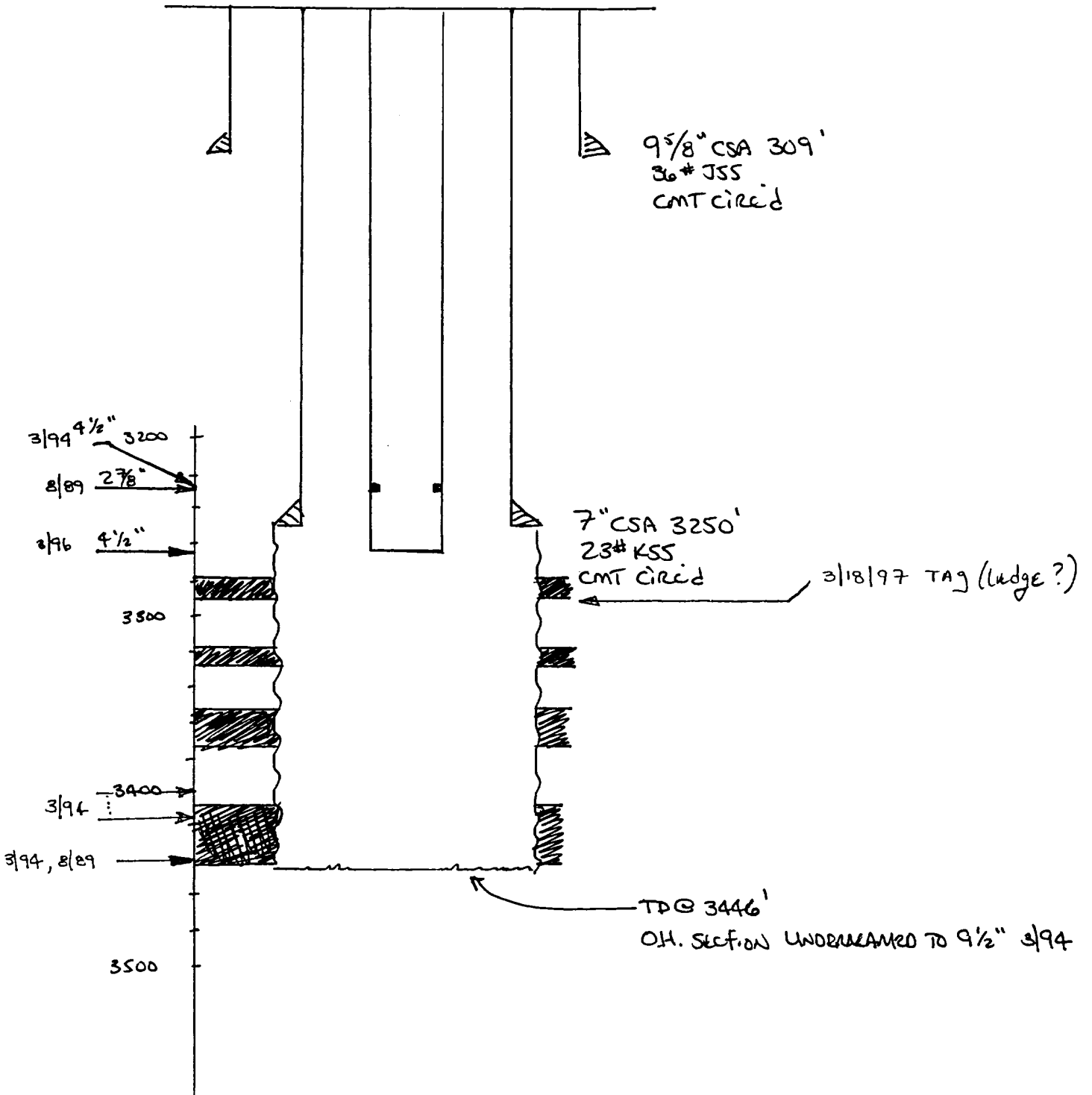
File _____

Appn _____

Date 3-17-97

By Gmk

SUBJECT KENAGHAN B 6



SUBJECT: KERNAGHAN B 6

SPud: 6/10/89 9 5/8" CSA 309, 36# K55, CMT circ'd
RAEL: 6/14/89 7" CSA 3250, 23# K55, CMT circ'd

- 8/4/89 - MIRMUSU, TEST BOE, PU x LUN BID, DC, DP
 - Drill out to 3446', FOUND CAPS @:
 - Flow TEST: 3/4" 4.5 min, 175 → 105 psi, 2557 → 1552 MCFD
 - Flow TEST: 3/4" 3 hrs, 105 → 15 psi, 1572 → 1377 MCFD
 - 66 → 44 BWPD ; 3 I 5 1/2 HAS, - 1110 psi, TAG: c/o 33' Fill, R:R - PROD COAL; sh
 - Flow TEST: 3/4" 4 hrs, 170 → 205 psi, 2465 → 2972 MCFD, 242 → 290 BWPD, 15-18' FLARE
 - CST #1 x 4, 1100-1600 psi. CLEAN WTR RETURNS, TAG: c/o 3' Fill, CST #1 @ CALW x 2, 120-15 psi
 - TAG: c/o 3' Fill, R:R - well unloading lots coal, clean up;
 - Flow TEST continued: 3/4" 4 1/2 hrs, 200 psi, 2900 MCFD, 257 BWPD ; TAG: c/o 6' Fill, R:R
 - CST #2 @ 1300 psi, c/o 5' Fill, R:R REC BLACK WTR; LOT'S COAL; Flow TEST: 3/4" 5 hrs
 - 200 → 275 psi, 87 BWPD, 3987 MCFD
 - Finish Flow TEST: 2175 MCFD, 63 BWPD, TAG: c/o 5' Fill, circ, TAG: c/o 6' Fill
 - TO H x LD DP, RU SNUB
 - Finish SNUB ON DP SNUB IN 204.17' PERF 5.5" 23# A110 CSG + 94' OF
 - SAME - NON PERFD CSG; LOAD LINER @ 3440' LINER TOP @ 3131'; SNUB IN
 - Hole w/ 2 7/8" TAG x Mill
 - Mill AL Plugs, c/o 3437', PERFS @ 3234-3438'; 2 7/8" TSA 3229.91'
 - w/ milk shore; EXP CHECK ON BTM, BAKER 2.25" F-Nipple @ 1 ft OFF BTM
- 3/5/94 - MIRMUSU, SECP: 700 psi, LD 2 7/8" TAG, Flow TEST: 3/4" 7.6 min, 530 psi
- PU x TIR w/ Bit, DP, DC; TAG @ 3133'
- Mill TOP OF LINER @ 3133', FISH LINER, REC 7/9 JTS
- REC REM 2 JTS LINER, SET BOP @ 3200', TEST BOE EQUIP, D.O. BP, C/O TO
- 3446' - Circ lg AMOUNTS COAL; WTR
- R:R ON BTM - HEAVY COAL; WTR RTN, TAG: c/o 4' Fill, UNDERREAM FROM
- 3257-3400'
- Finish UR TO 3446'; TOH w/UR, Flow TEST: 3/4" 2 hrs, 100-325 psi, 4200 → 4712 MCFD
- CST #1 x 7, 690 psi, HEAVY COAL; WTR RETURNS, TAG BRIDGE @ 3067', C/O TO 8080',
- HEAVY COAL RETURNS, STICK PIPE, FREE UP
- C/O TO TD, R:R ON BTM; Flow TEST: 3/4" 2 hrs, 70 → 450 psi, 5220-6525 MCFD, WET
- CST #2 x 8, 690 psi, HEAVY COAL RETURNS, TAG: c/o 46' Fill
- Attempt Flow TEST: TOO MUCH COAL; CST #3 x 7, 460 psi; TAG: c/o 30' Fill
- Flow TEST: 3/4" 3 hrs, 60-500 psi; 5438 → 7250 MCFD, WET EARLY - Dried up

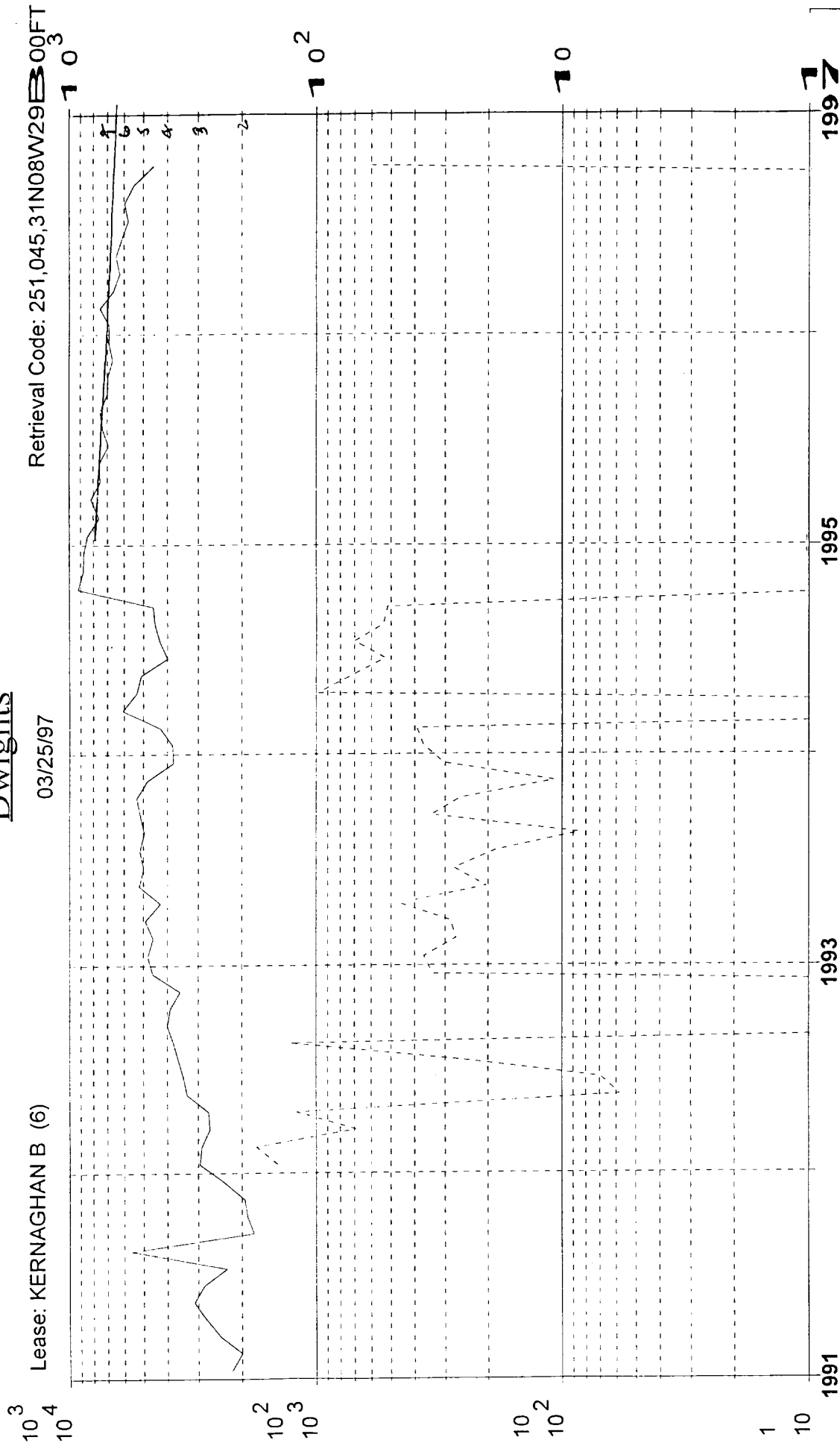
INTERNAL	Depth	Shows
IGNACIO	3279-92'	low-NOSATS, SL FLARE
COTTONWOOD	3318-28'	896 u
CALW	3409-45'	1152-1098 u

Dwights

Lease: KERNAGHAN B (6)

03/25/97

Retrieval Code: 251,045,31N08W29B00FT



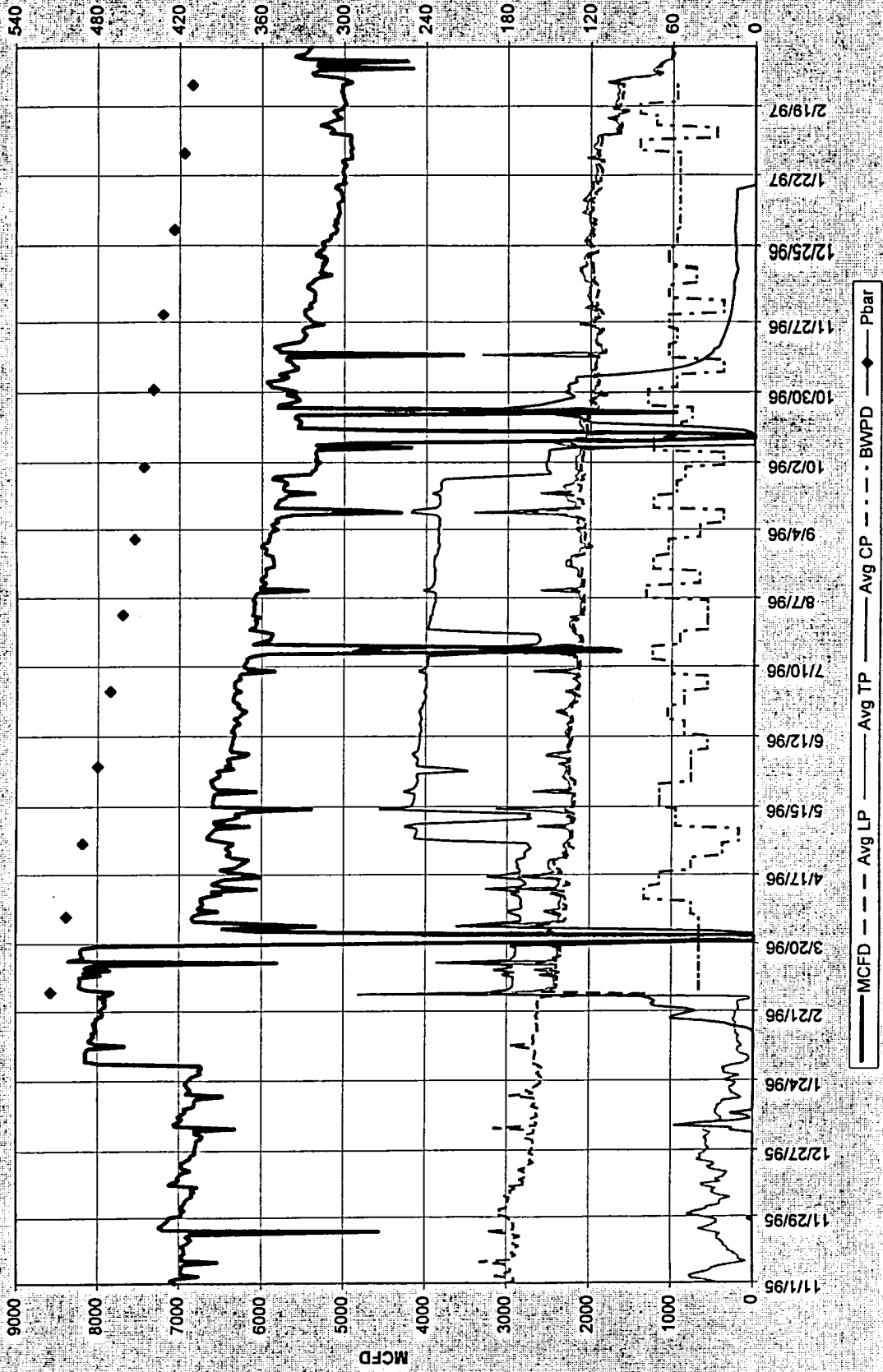
Gas (mcf/day)

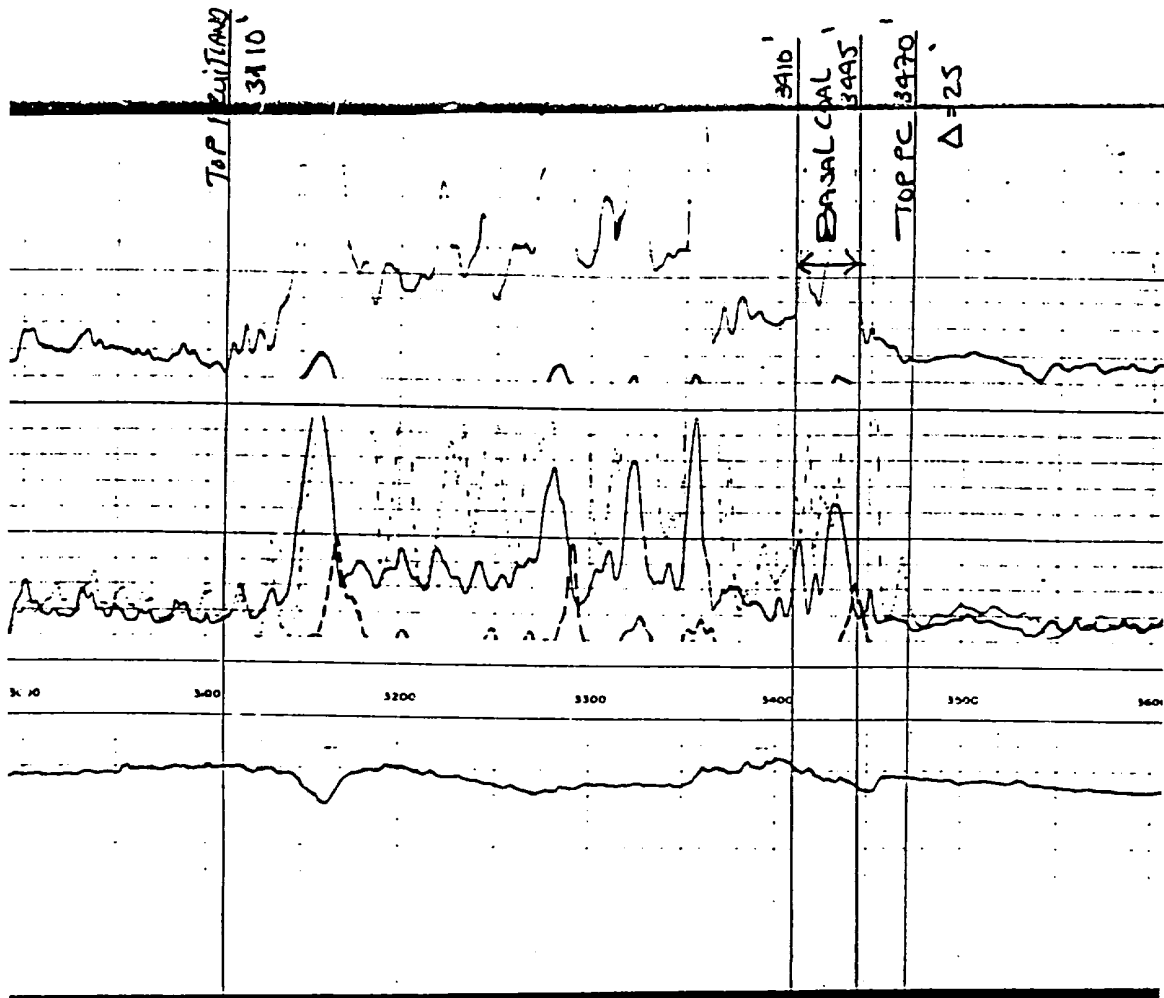
Oil (bbl/day)

Water (bbl/day)

County: SAN JUAN, NM	F. P. Date: 11/90
Field: BASIN (FRUITLAND COAL) FT	Oil Cum: 0 bbl
Reservoir: FRUITLAND COAL	Gas Cum: 10.66 bcf
Operator: AMOCO PRODUCTION CO	Location: 29B 31N 8W

Kernaghan B 6





SCHLITZBERGER WELL SURVEYING CORPORATION
REGISTERED TRADE

ELECTRICAL LOG
SAMPLE RUN & INDUCTION LOG

COUNTY <u>SAN JUAN</u> FIELD or LOCATION <u>BLANCO KERNAGHAN #3</u> COMPANY <u>EL PASO NATURAL GAS COMPANY</u>	COMPANY <u>EL PASO NATURAL GAS COMPANY</u> WELL <u>KERNAGHAN #3</u> FIELD <u>BLANCO</u> LOCATION <u>SEC. 29-31N-8W</u> COUNTY <u>SAN JUAN</u> STATE <u>NEW MEXICO</u>	Location of Well <u>990° FR M/L</u> <u>1650° FR E/L</u> <u>SEC. 29-31N-8W</u> <u>2</u> <u>ES-62L-IND</u> <u>(ML-TEMP)</u> Elevation: <u>D.F. 6580°</u> <u>K.B. 6581°</u> <u>or G.L. 6571°</u> FINING No. _____
--	--	--

RUN No.	RESISTIVITY		
	ONE-ES	ONE-GR1	ONE-IND
Date	<u>10-14-53</u>	<u>10-22-53</u>	<u>10-22-53</u>
First Reading	<u>4593</u>	<u>5783</u>	<u>5732</u>
Last Reading	<u>180</u>	<u>4593</u>	<u>5206</u>
Feet Measured	<u>4413</u>	<u>1290</u>	<u>576</u>
Cir. Sinker	<u>180</u>	<u>5206</u>	<u>5206</u>
Cir. Driller	<u>179</u>	<u>5200</u>	<u>5200</u>
Depth Recor'd	<u>4593</u>	<u>5787</u>	<u>5737</u>
Range Driller	<u>5137</u>	<u>5790</u>	<u>5780</u>
Depth Dev.		<u>RDB</u>	<u>RDB</u>
Fluids	<u>WEL-GAS</u>	<u>DRY WMS</u>	<u>DRY WMS DILLED</u>
Density	<u>8.1</u>		
Viscosity	<u>2.3</u>		
Porosity	<u>68</u>		
Permeability	<u>1.3</u>	<u>123</u>	
Notes	<u>123</u>	<u>158</u>	<u>153</u>
	<u>8 3/4"</u>	<u>6 1/4"</u>	<u>6 1/4"</u>
SUGGS-GR	<u>16"</u>	<u>500s. 200</u>	<u>500s. 27"</u>
	<u>15" 8"</u>	<u>10 JMS. 10</u>	<u>10 JMS. 10</u>
	<u>1 1/2"</u>	<u>2 1/2"</u>	<u>1 1/2"</u>
	<u>7315</u>	<u>1730</u>	<u>1730</u>
	<u>MO. 100</u>	<u>SURF. 100</u>	<u>SURF. 100</u>
	<u>CHURCH</u>	<u>SPECK</u>	<u>SPECK</u>

RESISTIVITY CURVES: NORMAL (1000), LONG NORMAL (100), LATERAL (1000, 100)

RESISTIVITY POTENTIAL DEPTH (100, 1000, 10000)

RESISTIVITY -ohms.m/m

RESISTIVITY -ohms.m²/m

REMARKS: RUN ONE HUD FROM 1100 PIT
 POINT OF ZERO EMISSION FOR GAMMA RAY IS 30 DIVISIONS TO LEFT OF LOG.
 RECORDING SPEED FOR UR-TYPE F. IS 3000/HR.
 * RDB 10" ABOVE G.L.