Tenneco Oil Company
A Tenneco Company
Western Rocky Mountain Division
P.O. Box 3249
Englewood, Colorado 80155
(303) 740-4800

Delivery Address:
6162 South Willow Drive
Englewood, Colorado

October 12, 1983

New Mexico Oil Conservation Commission
Box 2088
Santa Fe, New Mexico 87501

Attention: Gilbert Quintana

RE: Jicarilla A8
NE/4 Sec 17, T26N, R5W
Rio Arriba County, NM

Gentlemen:

We have enclosed all necessary data for administrative approval to commingle production in the referenced well.

Questions concerning this request can be directed to Mr. Mark Owen (303/740-4840).

Very truly yours,

TENNECO OIL COMPANY

Harry Hufft
Division Production Manager

HH/JO/gj

Enclosures

Tenneco Oil Company
A Tenneco Company
Western Rocky Mountain Division
P.O. Box 3249
Englewood, Colorado 80155
(303) 740-4800

Delivery Address:
6162 South Willow Drive
Englewood, Colorado

October 12, 1983

Occidental Petroleum
410 17th Street, Suite 850
Denver, CO 80202

RE: Jicarilla A8
NE/4 Sec. 17, T26N, R5W
Rio Arriba County, NM

Gentlemen:

Tenneco has applied for administrative approval to commingle production from the Gallup and Dakota zones in the above referenced well. If you as an offset operator, have no objection to the proposed commingling, please sign the waiver at the bottom of this page and forward to:

New Mexico Oil Conservation Commission
P.O. Box 2088
Santa Fe, New Mexico 87501
Attention: Gilbert Quintana

We would appreciate your returning one copy to the undersigned.

Very truly yours,

TENNECO OIL COMPANY

Harry Hufft
Division Production Manager

HH/JO/gj

W A I V E R

We hereby waive any ojbections to Tenneco Oil Company's application to commingle production as set forth above.

Name:_____ Title:_____

Date:_____

Tenneco Oil Company
A Tenneco Company
Western Rocky Mountain Division
P.O. Box 3249
Englewood, Colorado 80155
(303) 740-4800

Delivery Address:
6162 South Willow Drive
Englewood, Colorado

October 12, 1983

Amoco Production Company
Amoco Building
17th Broadway
Denver, CO 80202

Attn: Laura Greeley

RE: Jicarilla A8
NE/4 Sec. 17, T26N, R5W
Rio Arriba County, NM

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Harry Hufft
Division Production Manager

HH/JO/gj

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Name:_____ Title:_____

Date:_____

Tenneco Oil Company
A Tenneco Company
Western Rocky Mountain Division
P.O. Box 3249
Englewood, Colorado 80155
(303) 740-4800

Delivery Address: SANTA FE
6162 South Willow Drive
Englewood, Colorado

October 12, 1983

El Paso Natural Gas Company
P.O. Box 1492
El Paso, TX 79978

RE: Jicarilla A8
NE/4 Sec. 17, T26N, R5W
Rio Arriba County, NM

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Harry Hufft
Division Production Manager

HH/JO/gj

W A I V E R

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Name:_____ Title:_____

Date:_____

The Jicarilla A #8 was drilled as a Gallup-Dakota dual with 4-1/2" production casing in 1966. Because of the size restriction imposed by the 4-1/2" casing, only one string of production tubing can be run. Both zones were produced until April 15, 1974. At this point the Dakota was temporarily abandoned so that the Gallup could be produced up a single string of open-ended tubing. This was necessary due to operational problems that were associated with flowing the Gallup through a crossover tool that allowed the Gallup production to flow up the tubing.

Enclosed are decline curves for both the Dakota and Gallup zones.

The bottom-hole pressure of the Gallup zone was directly measured with a bottom-hole bomb after eight days of shut-in and was found to be 642 psig. Since the Dakota has been temporarily abandoned, it is not possible to obtain a measured bottom-hole pressure for that zone. Enclosed is the last well deliverability test report for the Dakota formation (dated May, 1973). The eight day surface shut-in pressure on this report is 684 psia. The bottom-hole pressure corresponding to this surface pressure was calculated to be 917 psia. A common datum of 6440' was chosen for the comparison of the two bottom-hole pressures. The Dakota pressure adjusted to this datum is 808 psia. The Gallup bottom-hole pressure can be expressed as an absolute pressure of 656 psia. This value is 81% of the adjusted Dakota bottom-hole pressure and therefore satisfies the requirement that the lower pressured zone have a pressure that is greater than 50% of the bottom-hole pressure of the higher pressured zone adjusted to a common datum.

A compatibility test was performed using the produced Gallup water from this well and the Dakota water from the Jicarilla B #5E, a nearby producer. The test indicated that no scale or precipitate problems should result from commingling the production from these two zones. In addition, the salinities of the waters are similar enough that no formation damage should occur due to the presence of produced water from another zone.

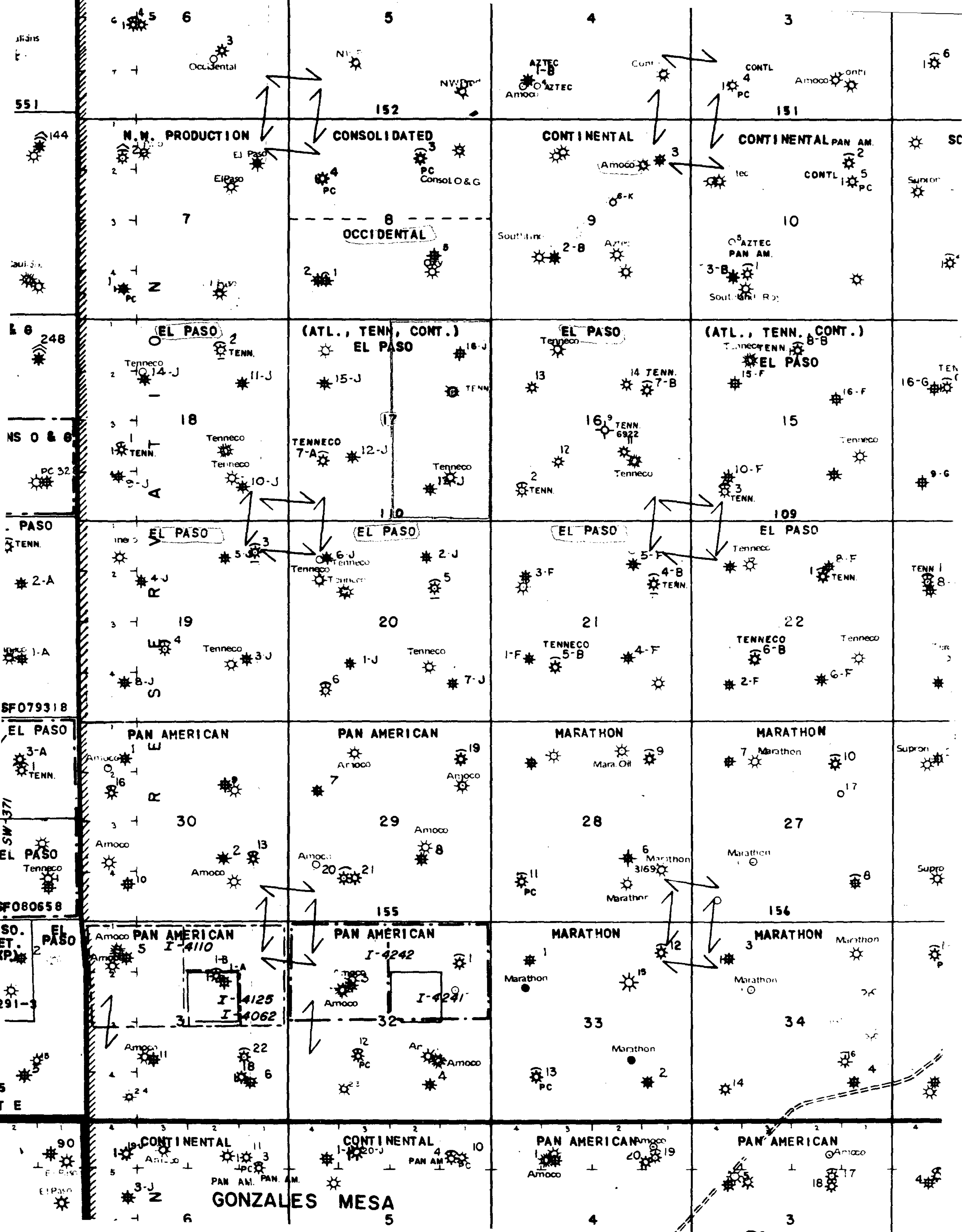
The purpose of commingling these two zones is to enable Tenneco to produce the reserves present in the Dakota at the same time we are producing the Gallup. It is important that both zones be produced while the wellbore is still in good condition since a new well could not be justified with the degree of depletion already experienced in either zone.

The total production from the well should increase by at least 100 MCFD This is the rate that the Dakota was producing at when it was abandoned in 1974. The greater velocity in the tubing due to this increased flow rate should also improve the liquid lifting capacity and keep the Gallup zone unloaded. This should improve the flow rate from the Gallup zone.

Based on the decline curves for each of these zones, I recommend that the production be split on a strict percentage basis with 71% of the production assigned to the Gallup and 29% assigned to the Dakota.

If you need additional information, feel free to call me at (303) 740-4804.

Mark W. Owen
Production Engineer


N.M. PRODUCTION
CONSOLIDATED
CONTINENTAL
CONTINENTAL
OCCIDENTAL
EL PASO
(ATL., TENN., CONT.) EL PASO
EL PASO
(ATL., TENN., CONT.) EL PASO
EL PASO
EL PASO
EL PASO
EL PASO
PAN AMERICAN
PAN AMERICAN
MARATHON
MARATHON
PAN AMERICAN
PAN AMERICAN
MARATHON
MARATHON
CONTINENTAL
CONTINENTAL
PAN AMERICAN
PAN AMERICAN
GONZALES MESA
I-4110
I-4125
I-4062
I-4242
I-4241
152
151
110
109
155
156
551
SF079318
SF080658
Tenneco
Amoco
Marathon
Occidental

NEW MEXICO OIL CONSERVATION COMMISSION

GAS - OIL RATIO TESTS

C-116
Revised 1-1-65

Operator	Pool	County
Tenneco Oil Company	Tapicito Gallup	Rio Arriba

Address	TYPE OF TEST - (X)	Scheduled	Completion	Special
Box 3249, Englewood, CO 80155		[ ]	[ ]	[X]

LEASE NAME	WELL NO.	LOCATION U	S	T	R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	GAS - OIL RATIO CU.FT/BBL.
Jicarilla	A8	H	17	26	5	9/8/83	F	none	140	-0-	24	1		-0-	55	-0-

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

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

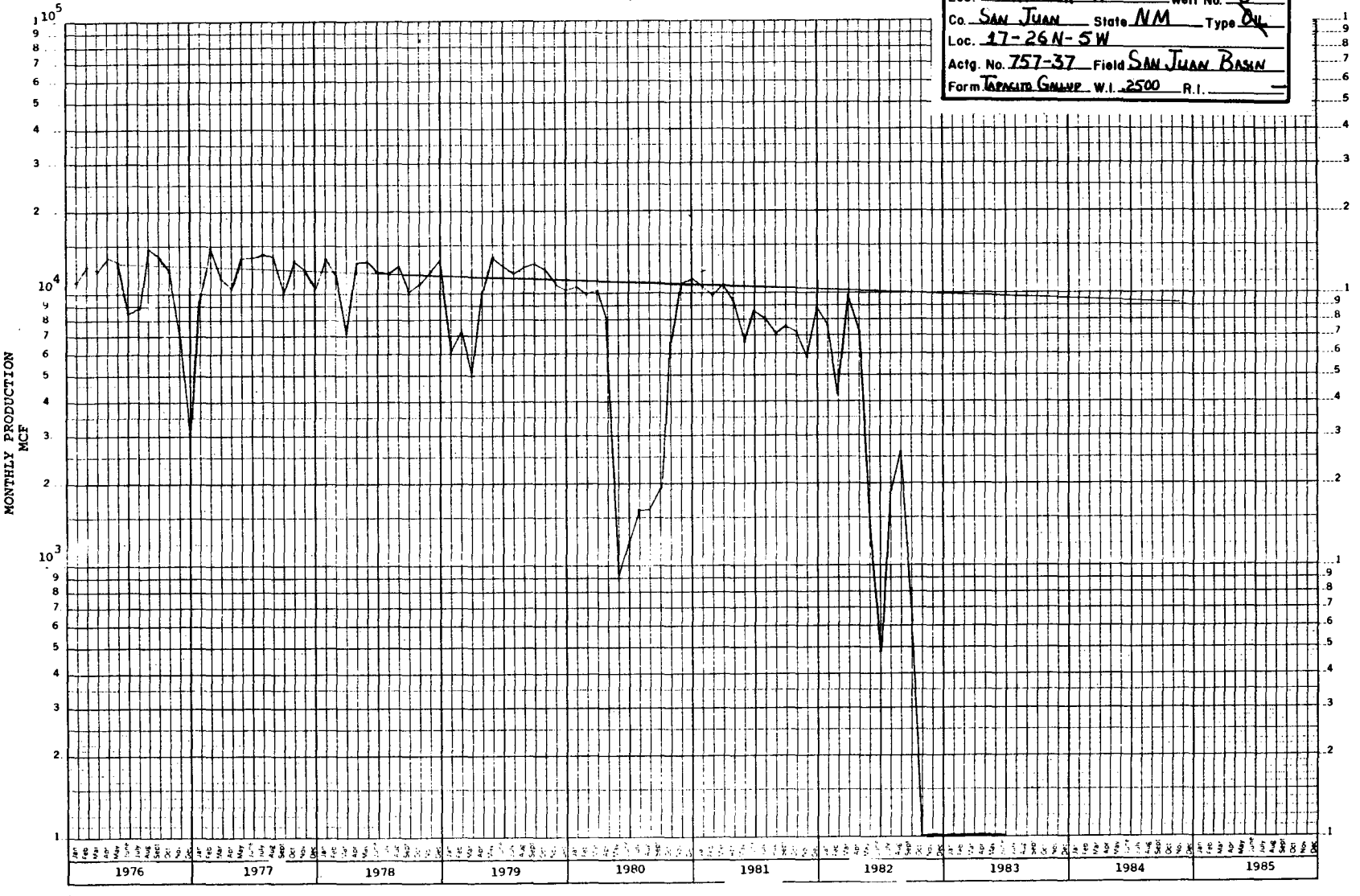
Katherine Jenkins
(Signature)

Agent
(Title)

September 13, 1983
(Date)

Jicarilla A #8 (Gallup - continued)

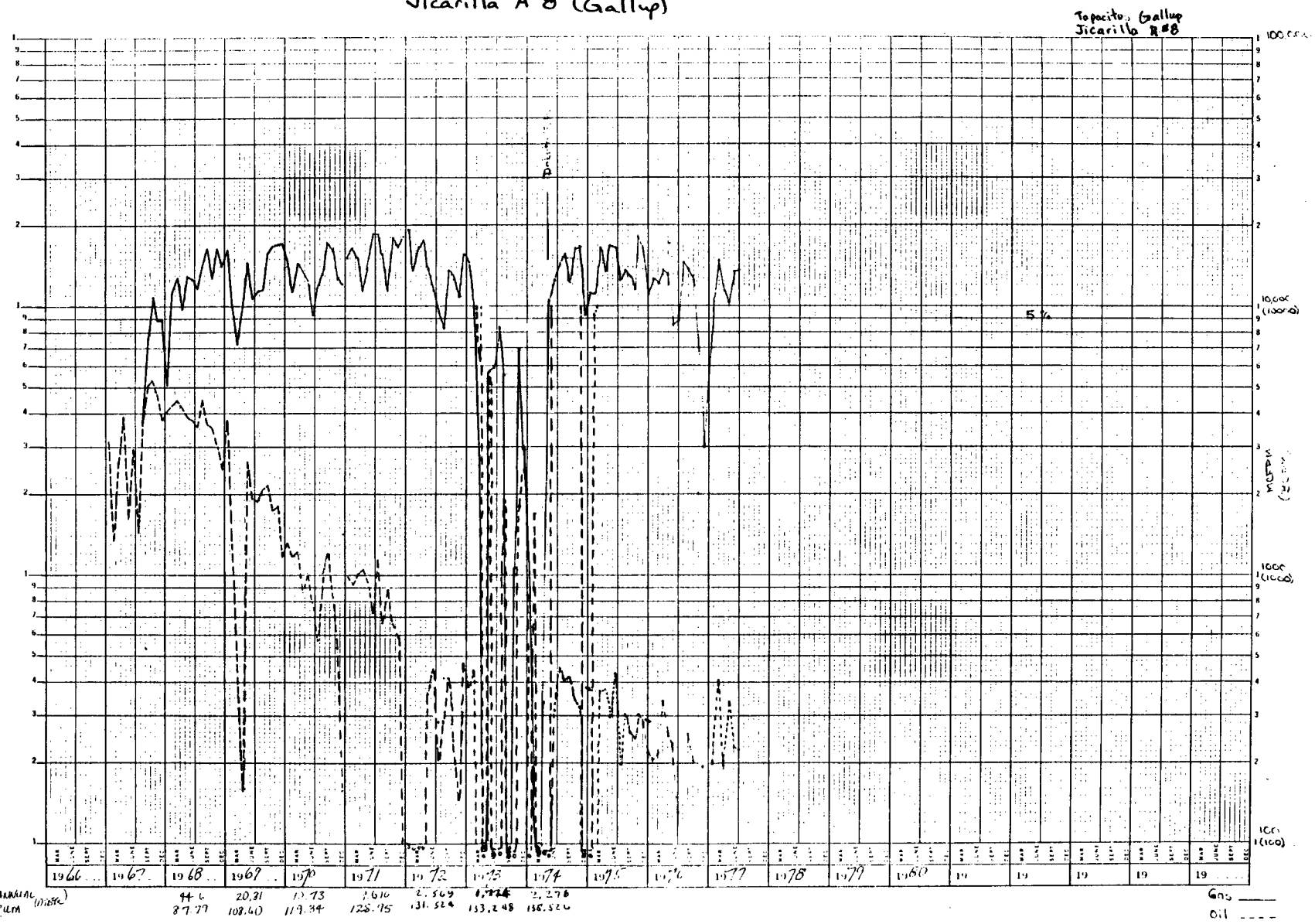
TENNECO OIL COMPANY Company Operated
Lse. JICARILLA "A" Well No. 8
Co. SAN JUAN State NM Type Oil
Loc. 17-26N-5W
Actg. No. 757-37 Field SAN JUAN BASIN
Form TOPACITO GALLUP W.I. .2500 R.I. —

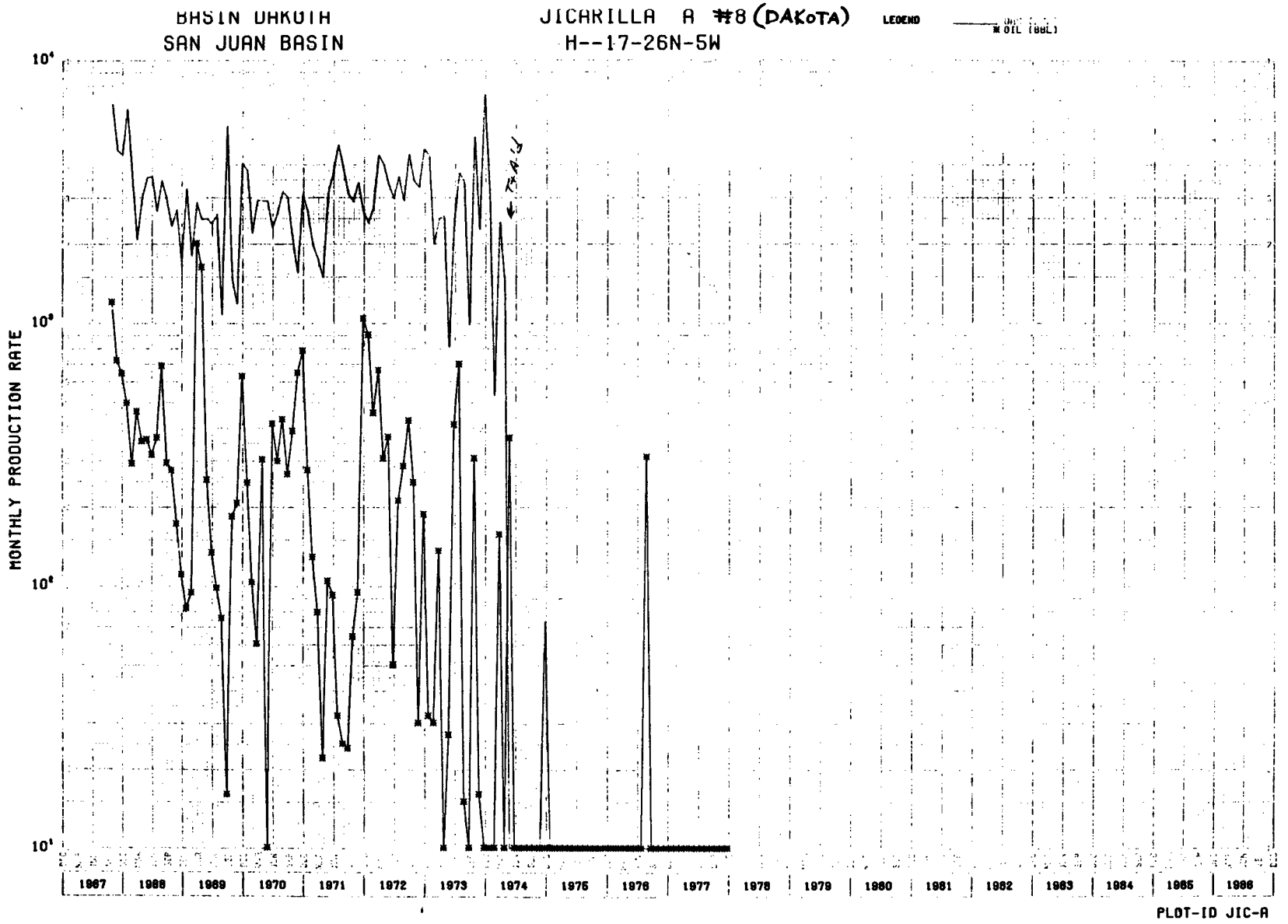


K+E 10 YEARS BY MONTHS x 3 LOG CYCLES KEUFFEL & ESSER CO MADE IN U.S.A.

47 6740

Jicarilla A #8 (Gallup)




BASIN DAKOTA
SAN JUAN BASIN
JICARILLA A #8 (DAKOTA)
H--17-26N-5W
LEGEND
OIL (BBL)
MONTHLY PRODUCTION RATE
10⁴
10³
10²
10¹
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
PLOT-ID JIC-A

B & R SERVICE, INC.

P. O. Box 1048
Farmington, New Mexico 87499
(505) 325-2393

Company Tenneco Oil Co | Lease Jicarilla | Well A-8

County Rio Arriba | State N. Mex. | Date 8-16-83

Shut-In 8 Days | Zero Point G.L. | Tbg. Pressure 486

Casing Pressure | Tbg. Depth | Casing Perf. 6814-18

Max. Temp. | Fluid Level None

DEPTH	PSIG	GRADIENT
0	488	----
1000	509	.021
2000	529	.020
3000	552	.023
4000	577	.025
5000	604	.027
6000	629	.025
6440	642	.030

/ MEXICO OIL CONSERVATION COMMISS

WELL DELIVERABILITY TEST REPORT FOR 19 73

Form C122-A
Revised 1-1-68

POOL NAME	POOL SLOPE	FORMATION	COUNTY
BASIN	n = 75	DAKOTA	RA

75-079

COMPANY			WELL NAME AND NUMBER		
TENNECO OIL COMPANY			JICARILLA A #6 DK		
UNIT LETTER	SECTION	TOWNSHIP	RANGE	PURCHASING PIPELINE	
H	17	26	5	EL PASO NATURAL GAS CO.	
CASING O.D. - INCHES	CASING I.D. - INCHES	SET AT DEPTH - FEET	TUBING O.D. - INCHES	TUBING I.D. - INCHES	TOP - TUBING PERF. - FEET
4.500	4.52	7656	2.375	1.995	729
GAS PAY ZONE		WELL PRODUCING THRU		GAS GRAVITY	GRAVITY X LENGTH
FROM 7312 TO 7544		CASING	TUBING X	.705	5139
DATE OF FLOW TEST			DATE SHUT-IN PRESSURE MEASURED		
FROM 12/31/72 TO 01/08/73			05/07/73		

PRESSURE DATA - ALL PRESSURES IN PSIA

(a) Flowing Casing Pressure (DWt)	(b) Flowing Tubing Pressure (DWt)	(c) Flowing Meter Pressure (DWt)	(d) Flow Chart Static Reading	(e) Meter Error (Item c - Item d)	(f) Friction Loss (a-c) or (b-c)	(g) Average Meter Pressure (Integr.)
	313	241	3.3	0	16	314
(h) Corrected Meter Pressure (g+e)	**(i) Avg. Wellhead Press. P_t = (h+f)**	**(j) Shut-in Casing Pressure (DWt)**	**(k) Shut-in Tubing Pressure (DWt)**	**(l) P_c = higher value of (j) or (k)**	**(m) Del. Pressure P_d = 5 %P_c**	**(n) Separator or Dehydrator Pr. (DWt) for critical flow only**
318	324		684	684	342	

FLOW RATE CORRECTION (METER ERROR)

Integrated Volume - MCF/D	Quotient of $\frac{\text{Item c}}{\text{Item d}}$	$\sqrt{\frac{\text{Item c}}{\text{Item d}}}$	Corrected Volume
148	90.1	.99	Q = 147 MCF/D

WORKING PRESSURE CALCULATION

$(1-e^{-s})$	$(F_c Q_m)^2 (1000)$	$R^2 = (1-e^{-s})(F_c Q_m)^2(1000)$	P_t^2	$P_w^2 = P_t^2 + R^2$	$P_w = \sqrt{P_w^2}$
.312	1.91	596	1.4976	1.5572	325

DELIVERABILITY CALCULATION

$$D = Q\left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}\right]^n = 147 \left(\frac{35.892}{302284}\right)^n = (.9685)^n = .9769 = 144 \text{ MCF/D}$$

REMARKS:

Submitted to Commission
5-30-73

SUMMARY

Item h	318	Psia
P_c	684	Psia
Q	147	MCF/D
P_w	325	Psia
P_d	342	Psia
D	144	MCF/D

Company ENGR. & PROD
By
Title
Witnessed By ORIGINAL SIGNED BY J. D. HICKS
Company ENGINEERING & PRODUCTION SERVICE, INC.

731.5122 5.265 75-079

JICARILLA A #8
DAKOTA BOTTOM-HOLE PRESSURE
ADJUSTED TO DEPTH OF 6440'

DATE: 08/19/83
FILE: A8
PROJ: 0

G A S W E L L P R E S S U R E S

MEASURED DEPTH, FEET	6440.	FLOW STREAM ID, INCHES	0.
TRUE VERTICAL DEPTH, FEET	6440.	FLOW STREAM OD, INCHES	1.995
GAS GRAVITY	0.700	CRITICAL TEMPERATURE	390.
BOTTOM HOLE TEMPERATURE	180.	CRITICAL PRESSURE	666.
NITROGEN, MOL %	0.	CONDENSATE GRAVITY, DEG API	50.0
CARBON DIOXIDE, MOL %	0.	WATER GRAVITY	1.047
HYDROGEN SULFIDE, MOL %	0.	PIPE ROUGHNESS, INCHES	0.00060

GAS RATE M/D-----	WH TEMP DEG F--	WELLHEAD PSIG------	BOTTOMHOLE PSIG------	P/Z PSIG------	CONDENSATE STB/MMCF--	WATER BW/MMCF--
0.	60.	672. = 684 psia	796.◆ = 808 psia	864.	0.	0.

◆ COMPUTED VALUE

This is a calculation of the bottom-hole pressure of the Dakota zone adjusted to a datum of 6440'. The surface pressure after 8 days of SI was 684 psia, according to the last Well Deliverability Test Report, dated May, 1973. The Dakota was temporarily abandoned in April, 1974.

SMITH ENERGY SERVICES
Divison of Smith International, Inc.

2198 East Bloomfield Highway
Farmington, New Mexico 87401
Phone (505) 327-7281

August 25, 1983

Tenneco
Western Rocky Mtn. Div.
P.O. Box 3249
Englewood, Co. 80155

ATTN: Mark Owen

Dear Mr. Owen:

A compatability study was conducted using the following formation water samples:

1.	Jicarilla B#5E	Dakota formation
2.	Jicarilla B#5E	Mesa Verde formation
3.	Jicarilla A #8	Gallup formation

A small amount of reddish orange precipitate formed, but this is to be expected when oxygen is admitted to a water sample containing even a trace of iron. This precipitate should pose no problems in a closed system. No solid precipitates of any other type was noted and these samples should be considered to be compatible for mixing in any concentrations needed.

Sincerely,
SMITH ENERGY SERVICES

Loren L. Diede
District Engineer

LLD/kr

REPORT NUMBER : 2
DATE : 8-22-83

COMPANY : TENNECO

ATTENTION OF : JOHN COOK

DATE SAMPLED : 8-20-83
COUNTY :
FIELD :
FORMATION : GALLUP
LEASE : JICARILLA "A"
WELL : #8
SES ANALYST : LOREN L. DIEDE

WATER ANALYSIS

SPECIFIC GRAVITY	1.000	pH :	6.50
CHLORIDE :	2099.527 mg/l	CALCIUM :	40.080 mg/l
BICARBONATE :	122.034 mg/l	MAGNESIUM :	48.595 mg/l
SULFATE :	300.000 mg/l	TOTAL IRON :	83.770 mg/l
SULFIDE :	0.000 mg/l	SODIUM :	1343.650 mg/l
POTASSIUM :	0.000 mg/l		

TOTAL HARDNESS (as CaCO3) : 300.180 mg/l
TOTAL DISSOLVED SOLIDS : 4037.656 mg/l
RESISTIVITY : 1.600 OHM METERS @ 60.0 DEGREES FAHRENHEIT.

Sample Source :

PRODUCED WATER

Analyst's Remarks :

REPORT NUMBER : 2
DATE : 8-22-83

COMPANY : TENNECO
ATTENTION OF : JOHN COOK

DATE SAMPLED : 8-20-83
COUNTY :
FIELD :
FORMATION : DAKOTA
LEASE : JICARILLA "B"
WELL : #5E
SES ANALYST : LOREN L. DIEDE

WATER ANALYSIS

SPECIFIC GRAVITY	1.010	pH :	6.50
CHLORIDE :	7698.264 mg/l	CALCIUM :	440.880 mg/l
BICARBONATE :	610.170 mg/l	MAGNESIUM :	340.030 mg/l
SULFATE :	1500.000 mg/l	TOTAL IRON :	27.924 mg/l
SULFIDE :	0.000 mg/l	SODIUM :	4766.145 mg/l
POTASSIUM :	0.000 mg/l		

TOTAL HARDNESS (as CaCO3) : 2501.500 mg/l
TOTAL DISSOLVED SOLIDS : 15383.413 mg/l
RESISTIVITY : 0.650 OHM METERS @ 60.0 DEGREES FAHRENHEIT.

Sample Source :

PRODUCED WATER

Analyst's Remarks :

JICARILLA A 8
DETERMINATION OF ALLOCATION PERCENTAGES

Both the Gallup and the Dakota have reached the straight line portions of their decline curves. The decline rates are 8% per year for the Gallup and 10% per year for the Dakota. Assuming initial flow rates of 7000 MCF/month in the Gallup and 3700 MCF/month for the Dakota, the zones have the following remaining reserves*:

Gallup	964.1 MMCF
Dakota	387.3 MMCF

The allocations for each zone should therefore be 71% to the Gallup and 29% to the Dakota.

* Economic limit = 300MCF/month for each zone.

FILE DHC-440

Tenneco Oil Company
A Tenneco Company
Western Rocky Mountain Division
P.O. Box 3249
Englewood, Colorado 80155
(303) 740-4800

RECEIVED
OCT 31 1983
OIL CONSERVATION DIVISION
SANTA FE

Delivery Address:
6162 South Willow Drive
Englewood, Colorado

RECEIVED
OCT 17 1983
FAR WEST PRODUCING

October 12, 1983

Amoco Production Company
Amoco Building
17th Broadway
Denver, CO 80202

Attn: Laura Greeley

RE: Jicarilla A8
NE/4 Sec. 17, T26N, R5W
Rio Arriba County, NM

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Santa Fe, New Mexico 87501
Attention: Gilbert Quintana

We would appreciate your returning one copy to the undersigned.

Very truly yours,

TENNECO OIL COMPANY

Harry Hufft

Harry Hufft
Division Production Manager

HH/JO/gj

WAIVER

We hereby waive any objections to Tenneco Oil Company's application to commingle production as set forth above.

Name: R B Tiles for Title: Amoco Production Company

Date: 10/26/83

10/18/83 Copy to Dave Poage for handling 10-18-83

Tenneco Oil Company

A Tenneco Company
Western Rocky Mountain Division
P.O. Box 3249
Englewood, Colorado 80155
(303) 740-4800

Delivery Address
6162 South Willow Drive
Englewood, Colorado

TENNECO

OCT 20 1983
LAND
FARMINGTON

RECEIVED
OCT 25 1983
OIL CONSERVATION DIVISION
SANTA FE

RECEIVED
OCT 17 1983
LAND
DEPARTMENT

October 12, 1983

El Paso Natural Gas Company
P.O. Box 1492
El Paso, TX 79978

RE: Jicarilla A8
NE/4 Sec. 17, T26N, R5W
Rio Arriba County, NM

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Harry Hufft

Harry Hufft
Division Production Manager

HH/JO/gj

WAIVER

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Name: David N Poage Title: Landman

Date: 10/21/83

11-17-83
Gallup
~~Burning~~ - 2 Send
to Gene Motter
EM

RECEIVED
DEC 1 1983
OIL CONSERVATION DIVISION
SANTA FE

To: Gene Motter
If you need any info from me let me know
John Bergman

Tenneco Oil Company
A Tenneco Company
Western Rocky Mountain Division
P.O. Box 3249
Englewood, Colorado 80155
(303) 740-4800

Delivery Address:
6162 South Willow Drive
Englewood, Colorado

TENNECO

November 1, 1983

Oxy Petroleum
1600 Broadway, Suite 900
Denver, Colorado 80202

Attn: Bob Pasque

RE: Jicarilla A8
NE/4 SEc. 17, T26N, R5W
Rio Arriba County, New Mexico

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TENNECO OIL COMPANY

Harry Hufft

Harry Hufft
Division Production Manager

HH/JO/gj

WAIVER

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Name: G Motter   Title: Engr Mgr

Date: 11/18/83