Amoco Production Company
Post Office Box 68
Hobbs, New Mexico 88240

L. R. Smith
District Manager

October 22, 1985

File: SGH-2018-WF

Re: Application to Downhole Commingle
State "FU" No. 2
Bone Springs and Wolfcamp Oil Pools
Lea County, New Mexico

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

Attention: R. L. Stamets, Director

Approval is being requested to downhole commingle the State "FU" No. 2 well in accordance with NMOCD Rule 303C.

This well is located 960' FSL x 1980' FWL, Section 25, T-18-S, R-34-E, Lea County, New Mexico. The well was initially completed in the Bone Springs on September 13, 1979. However, production has steadily declined since that time. On September 25, 1985, the well was recompleted to the Wolfcamp and swab tested. A retrievable bridge plug was set to isolate the Wolfcamp pending approval to downhole commingle these two formations.

An offset well to the State "FU" No. 2 have received approval to downhole commingle the Bone Springs and Wolfcamp formations. This offset well is the:

Amoco Production Company - Operator
State "FU" No. 1
Unit K, Section 25, T-18-S, R-34-E
Administrative Order No. DHC-436

In support of our request, we submit the following facts:

1. The latest 24-hour productivity tests are as follows:

	DATE	BOPD	BWPD	MCFD	Perforations
Bone Springs	10/9/85	37	64	61	8,334-10,272' (Non-continuous)
Wolfcamp*	9/25/85	14	48	28	10,602-10,646'

*Estimated Wolfcamp production following stimulation. The Wolfcamp was swab tested 13 hours.

2. Neither zone produces more water than the combined oil limit as determined in Rule 303, Paragraph C, Section 1-A(1) and A(3).

3. The proposed commingling of the State "FU" No. 2 Bone Springs and Wolfcamp intervals are directly correlative with the commingled zones in the State "FU" No. 1. The fluids in the State "FU" No. 1 are representative of the fluids in the State "FU" No. 2 and are compatible. See attached results.

4. Both zones will be artifically lifted by beam pump. The estimated bottomhole pressures are as follows:

Bone Springs

Perforations: 8,334-10,272' (Non-continuous)
Fluid level above pump per sonolog: 10/4/85 = 1930'
Pump Depth: 10,303'
Casing Pressure: 32 psi
Oil Gravity: 35.4° API

$$S.G. = \frac{141.5}{131.5 + 35.4} = .848 \text{ S.G. x } .433 \text{ psi/Ft.} = .367 \text{ psi/Ft.}$$

Hydrostatic of Oil = 1930' x .367 psi/Ft. = 708 psi
Hydrostatic of Gas = (10,303-1,930') x .01 psi/Ft. = 84 psi
Casing Pressure = 32 psi

Formation Pressure of Bone Springs 824 psi

Wolfcamp

Perforations: 10,602-10,646'
Fluid Level: 2102' above top Wolfcamp perforation
Casing Pressure: 0 psi
Swab test results: 14 BOPD and 48 BWPD
22.6% oil and 77.4% water
Oil Gravity = 40° API (Based on offset Wolfcamp oil)

S.G. = $\frac{141.5}{131.5 + 40}$ = .825 S.G. x .433 psi/Ft. = .357 psi/Ft.

Hydrostatic of Oil = 2102' x .226 (Oil) x .357 psi/Ft. = 170 psi
Hydrostatic of Water = 2102 x .774 (Water) x .433 psi/Ft. = 704 psi
Hydrostatic of Gas = (10,602-2,102') x .005 psi/Ft. = 42 psi

Formation Pressure of Wolfcamp 916 psi

Credit to common datum at 10,303'
$\frac{916 \text{ psi}}{10{,}602'}$ = .086 psi/Ft.

BHP at datum = 10,303' x .086 psi/Ft. = 886 psi

Higher Pressure Zone = 886 psi (Wolfcamp)
Lower Pressure Zone = 824 psi (Bone Springs)

Conclusion: Lower pressure zone is not less than 50% (443 psi) of higher pressure zone.

5. The commingled value of the commingled production will be approximately the same as the total value of the segregated production. Production data from the two zones are as follows:

	Bone Springs	Wolfcamp	Commingled
Daily Production	37	14	51
Gravity	35.4°	40.0°	36.7°
Value/bbl	$27.29	$27.98	$27.48

6. Recommended oil and gas allocations are as follows:

	Wolfcamp	Bone Springs
Oil	28%	72%
Gas	32%	68%

7. All offset operators have been notified by certified mail. Copy of receipt is attached.

8. Other supporting data attached are production decline curves, ownership plat, C-116, and a list of offset operators and their addresses.

Should you require additional information regarding this matter, please contact Charles Herring at (505) 393-1781, Extension 252.

L. R. Smith /SGH

CMH/tjt
APRD03-V

Attachments

cc: State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P. O. Box 1980
Hobbs, NM 88240

OFFSET OPERATOR

Chevron USA, Inc.
P. O. Box 670
Hobbs, NM 88240
Attention: J. C. Prindle

Amoco Production Company
P. O. Box 68
Hobbs, NM 88240

October 21, 1985

File: 934.21

Re: Change to Standard Time

To: All EAGP Supervisors

Daylight Saving Time will end at 2:00 a.m. October 27, 1985; however, posted daily working hours will remain unchanged for all personnel.

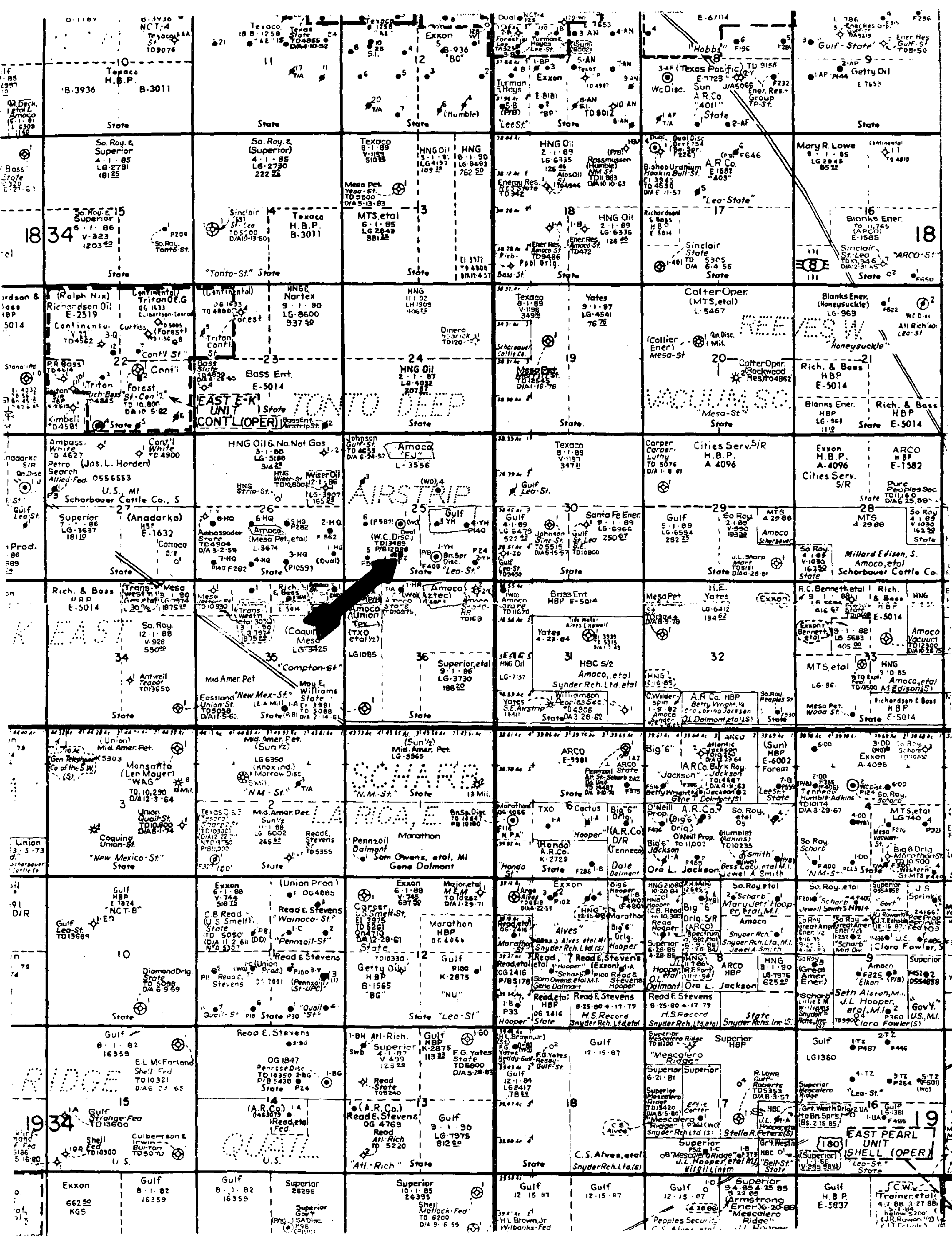
Shift workers who are working at 2:00 a.m. October 27, will be scheduled to work thirteen hours during that shift. They will be paid one hour overtime, and that one hour must be reported on Form 5747 as an "exception" to the regular work schedule.

L. R. SMITH

JEP/tjt
APERM8-LL

Copy to be posted on bulletin boards:

T. J. Cottrell - Empire Abo Gasoline Plant



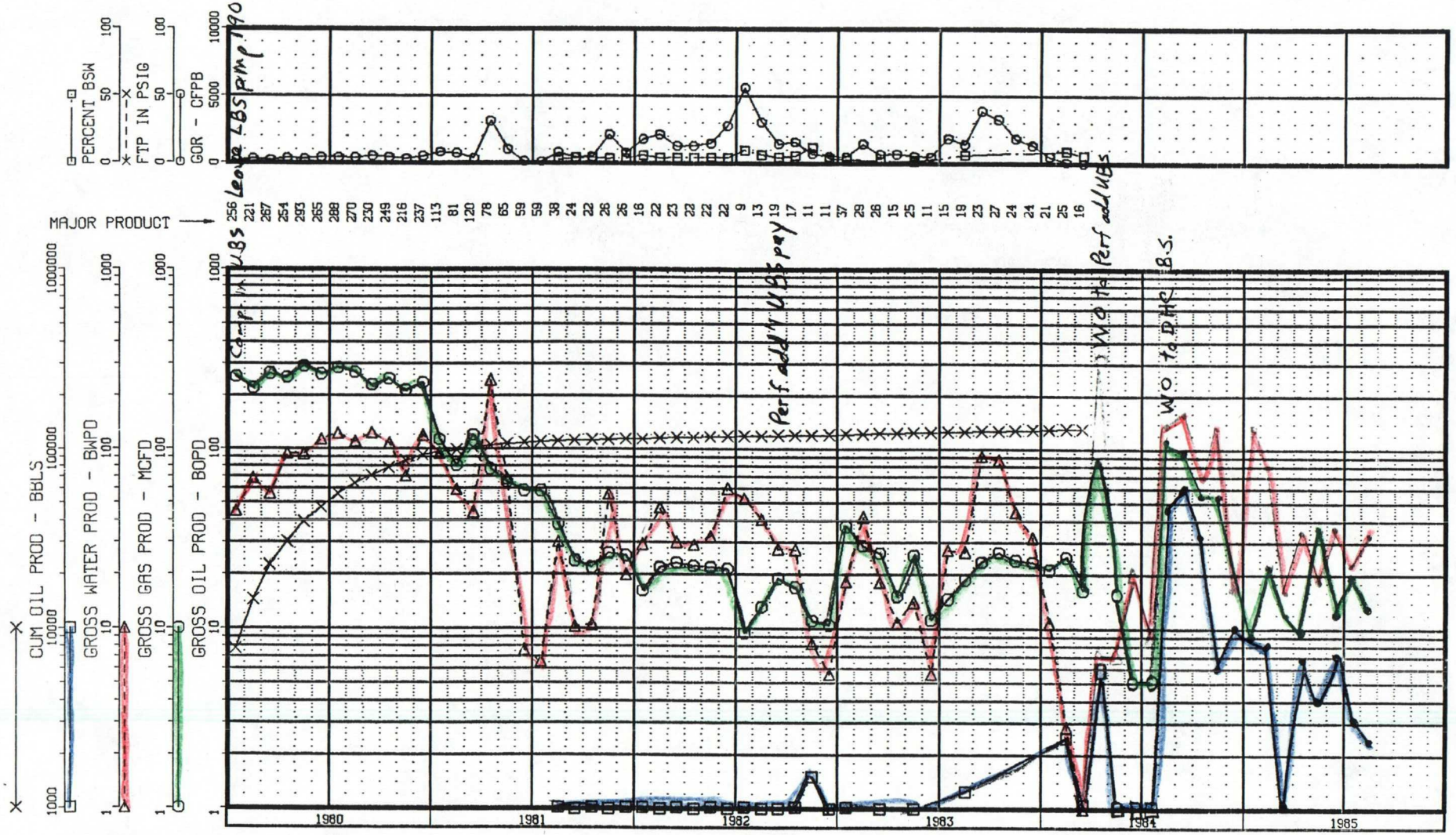
18 34
19 34
18
19
TONTO DEEP
AIRSTRIP
REEVES W.
"Honeysuckle"
VACUUM S.
"Mesa-St."
EAST E-K UNIT CONT'L (OPER)
K EAST
"Compton-St."
"New Mex-St."
SCHARB
LA RICA, E.
RIDGE
QUAIL
"Mescalero Ridge"
EAST PEARL UNIT SHELL (OPER)
"Lea-St."
"Tonto-St."
"Lea State"
Schabauer Cattle Co.
Snyder Rch. Ltd.

PLOT 2 20.10.04 TUES 7 AUG, 1984 JOB-R63AFWN3, SOCO, TULSA CENTER DISSPLA VER 8.2

INDUSTRY PRODUCTION DATA RATE–TIME PLOTS

OIL
WELL: STATE FU 000002
FIELD: AIRSTRIP UPPER BONE SPRING UB 008000194
OPERATOR: AMOCO PRODUCTION CO 019922
STATE: NM 30 COUNTY: LEA 025
FIRST PROD LAST PROD 84 03
REQUESTOR: REL FOR SPERRY LOCATION: HOBBS

API NO: 300250000000
GENID: 4WO14626
RESERVOIR: UB
COMP DATE: 80 01
TOT. OIL CUM: 130,791
TOT. GAS CUM: 79,228
PERFS:



1984–08–07

REPORT NUMBER 321

UNICHEM INTERNATIONAL

601 NORTH LEECH P.O.BOX1499

HOBBS, NEW MEXICO 88240

COMPANY : AMOCO
DATE : 9-7-82
FIELD.LEASE&WELL : STATE FU#1
SAMPLING POINT: UPPER BONE SPRINGS
DATE SAMPLED : 9-2-82

SPECIFIC GRAVITY = 1.055
TOTAL DISSOLVED SOLIDS = 81879
PH = 4.47

		ME/L	MG/L
CATIONS			
CALCIUM	(CA)+2	720	14428.
MAGNESIUM	(MG)+2	230	2795.
SODIUM	(NA).CALC.	527.	12129.
ANIONS			
BICARBONATE	(HCO3)-1	0	0
CARBONATE	(CO3)-2	0	0
HYDROXIDE	(OH)-1	0	0
SULFATE	(SO4)-2	11.1	537.
CHLORIDES	(CL)-1	1466.	51988.
DISSOLVED GASES			
CARBON DIOXIDE	(CO2)	NOT RUN	
HYDROGEN SULFIDE	(H2S)	NOT RUN	
OXYGEN	(O2)	NOT RUN	
IRON(TOTAL)	(FE)		740
BARIUM	(BA)+2	.03	2.5
MANGANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
CARBONATE INDEX	-.20
CALCIUM CARBONATE SCALING	UNLIKELY
SULFATE INDEX	-.36
CALCIUM SULFATE SCALING	UNLIKELY

UNICHEM INTERNATIONAL

601 NORTH LEECH P.O.BOX1499

HOBBS, NEW MEXICO 88240

OMPANY : AMOCO
ATE : 9-7-82
IELD,LEASE&WELL : STATE HR#1.
AMPLING POINT: WOLFCAMP
ATE SAMPLED : 9-2-82

PECIFIC GRAVITY = 1.084
OTAL DISSOLVED SOLIDS = 124195
H = 6.2

		ME/L	MG/L
CATIONS			
ALCIUM	(CA)+2	140	2805.
AGNESIUM	(MG)+2	100	1215.
ODIUM	(NA).CALC.	1904.	43774.
ANIONS			
ICARBONATE	(HCO3)-1	1.6	97.6
ARBONATE	(CO3)-2	0	0
YDROXIDE	(OH)-1	0	0
ULFATE	(SO4)-2	27.4	1319.
HLORIDES	(CL)-1	2115	74983.
DISSOLVED GASES			
ARBON DIOXIDE	(CO2)	NOT RUN	
YDROGEN SULFIDE	(H2S)	NOT RUN	
XYGEN	(O2)	NOT RUN	
RON(TOTAL)	(FE)		45.5
ARIUM	(BA)+2		.5
ANGANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
ARBONATE INDEX	.889
ALCIUM CARBONATE SCALING	LIKELY
ULFATE INDEX	-1.3
ALCIUM SULFATE SCALING	UNLIKELY

UNICHEM INTERNATIONAL

601 NORTH LEECH P.O.BOX1499

HOBBS, NEW MEXICO 88240

COMPANY : AMOCO
DATE : 9-7-82
FIELD,LEASE&WELL : STATE FU#1 50% & STATEHR#1 50%
SAMPLING POINT:
DATE SAMPLED : 9-2-82

SPECIFIC GRAVITY = 1.069
TOTAL DISSOLVED SOLIDS = 103044
PH = 5.33

		ME/L	MG/L
CATIONS			
CALCIUM	(CA)+2	430	8617.
MAGNESIUM	(MG)+2	165	2013
SODIUM	(NA),CALC.	1215.	27951.
ANIONS			
BICARBONATE	(HCO3)-1	.8	48.8
CARBONATE	(CO3)-2	0	0
HYDROXIDE	(OH)-1	0	0
SULFATE	(SO4)-2	19.3	928.
CHLORIDES	(CL)-1	1790.	63485.
DISSOLVED GASES			
CARBON DIOXIDE	(CO2)	NOT RUN	
HYDROGEN SULFIDE	(H2S)	NOT RUN	
OXYGEN	(O2)	NOT RUN	
IRON(TOTAL)	(FE)		392.
BARIUM	(BA)+2	.02	1.5
MANGANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
CARBONATE INDEX	.479
CALCIUM CARBONATE SCALING	LIKELY
SULFATE INDEX	-.35
CALCIUM SULFATE SCALING	UNLIKELY

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-116
Revised 10-1-78

GAS – OIL RATIO TESTS

Operator	Pool	County
Amoco Production Company	Airstrip-Bonesprings	Lea

Address: P.O. Box 68, Hobbs, New Mexico 88240

TYPE OF TEST – (X): Scheduled ☐ Completion ☐ Special ☒

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
State FU	2	N	25	18	34	10-9-85	P			63	24	64		37	61	1649

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 Division.

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 Division 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.

James E. Smith
(Signature)

Administrative Analyst
(Title)

10-22-85

P 267 162 771

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL
(See Reverse)

SENT TO
Chevron USA, Inc.
STREET AND NO.
P.O. Box 670
P.O., STATE AND ZIP CODE
Hobbs, NM 88240

POSTAGE					$ .50
CONSULT POSTMASTER FOR FEES	CERTIFIED FEE				.75 ¢
	OPTIONAL SERVICES	SPECIAL DELIVERY			¢
		RESTRICTED DELIVERY			¢
		RETURN RECEIPT SERVICE	SHOW TO WHOM AND DATE DELIVERED		.70 ¢
			SHOW TO WHOM, DATE, AND ADDRESS OF DELIVERY		¢
			SHOW TO WHOM AND DATE DELIVERED WITH RESTRICTED DELIVERY		¢
			SHOW TO WHOM, DATE AND ADDRESS OF DELIVERY WITH RESTRICTED DELIVERY		¢
TOTAL POSTAGE AND FEES					$ 2.01

POSTMARK OR DATE

PS Form 3800, Apr. 1976

DHC

October 22, 1985

File: SGH-2017-WF

Re: Downhole Commingling of the
State "FU" Well No. 2
Bone Springs and Wolfcamp Oil Pools
Lea County, New Mexico

Chevron USA, Inc.
P. O. Box 670
Hobbs, NM 88240

Attention: J. C. Prindle

This is to inform you that Amoco Production Company is applying to the New Mexico Oil Conservation Division to downhole commingle the State "FU" Well No. 2 (Bone Springs and Wolfcamp Oil Pools) located 960' FSL x 1980' FWL, Section 25, T-18-S, R-34-E, Lea County, New Mexico. The commingling will enhance the economics of producing the well.

If you have no objections to the commingling, sign below and forward one copy to the NMOCD in Santa Fe, one copy to the NMOCD in Hobbs, one copy to this office, and retain one copy for your own records. Addressed, stamped envelopes have been provided for your convenience.

Original Signed By
L.R. Smith

CMH/tjt
APRD03-000

Attachment

APPROVAL

Company: CHEVRON U.S.A. INC.

By: R. C. Anderson

Date: 11-7-85

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE
October 28, 1985

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88240
(505) 393-6161

RECEIVED
NOV 01 1985
OIL CONSERVATION DIVISION
SANTA FE

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

RE: Proposed:
MC_____
DHC X
NSL_____
NSP_____
SWD_____
WFX_____
PMX_____

Gentlemen:

I have examined the application for the:

Amoco Production Co. State FU No. 2-N 25-18-34
Operator Lease & Well No. Unit S-T-R

and my recommendations are as follows:

O.K.----J.S.

Yours very truly,

Jerry Sexton
Supervisor, District 1

/mc