Amoco Production Company
500 Jefferson Building
P.O. Box 3092
Houston, Texas 77001

D. L. Ray
Division Engineer

DHC — 101
Due Dec 21

November 23, 1971

File: TBM-986.522NM-3523

Re: Downhole Commingling
State "AJ" No. 6
Justis Blinebry & Fusselman Pools
Lea County, New Mexico

New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico 87501

Attention: Mr. A. L. Porter, Jr., Secretary-Director

Gentlemen:

Amoco Production Company respectfully requests administrative approval under the terms of Rule 303-6 to permit the commingling in the wellbore of production from the Justis Blinebry Oil Pool and the Justis Fusselman Oil Pool in their State "AJ" Well No. 6. This well is currently a dual completion in these two pools and is located in Unit M, Section 30, T-25S, R-38E, Lea County, New Mexico. Dual completion was authorized by Order DC-1011 dated November 4, 1960. A map showing the location of this well is included as Attachment 1.

In support of this application the following facts are presented:

(a) Both zones are oil zones.

(b) Commingled production from both zones will be less than 40 Bbls/day with lower zone perforations between 6000 and 6999 feet.

(c) Both zones are produced by pumping.

(d) Neither zone produces more than 40 barrels of water per day.

(e) The fluids from each zone are compatible with fluids from the other and no formation damage should result from the combined stream.

(f) The total value of the crude will not be reduced.

(g) The ownership of the two zones is common.

(h) The commingling will not jeopardize secondary recovery operations.

Attached are Forms C-116 showing current tests for each of the zones and production decline curves for each zone. Also attached is Form C-124 showing latest available bottom hole pressure information. Adjustment of the pressure data to a common datum shows the pressures to be very similar.

Commission Order No. PC-94 dated September 5, 1962, authorized surface commingling of Justis Blinebry oil production from State "AJ" Well No. 5 and Justis Fusselman oil production from State "AJ" No. 6, both of which met pipeline requirements for sweet crude. Blinebry production from State "AJ" No. 6 was handled separately since it has heretofore been termed sour. Attached is a copy of a letter from Texas-New Mexico Pipeline stating they will accept this as sweet crude if the stream meets their requirements. These are a gravity of not less than 35° API and not more than 0.6% sulfur by weight. The attached report from Wolf Petro Lab, Inc. shows these requirements are met. Also attached are computations showing the value of the combined streams to be even greater than the separate streams.

By copy of this application all offset operators are being notified of this request.

Very truly yours,

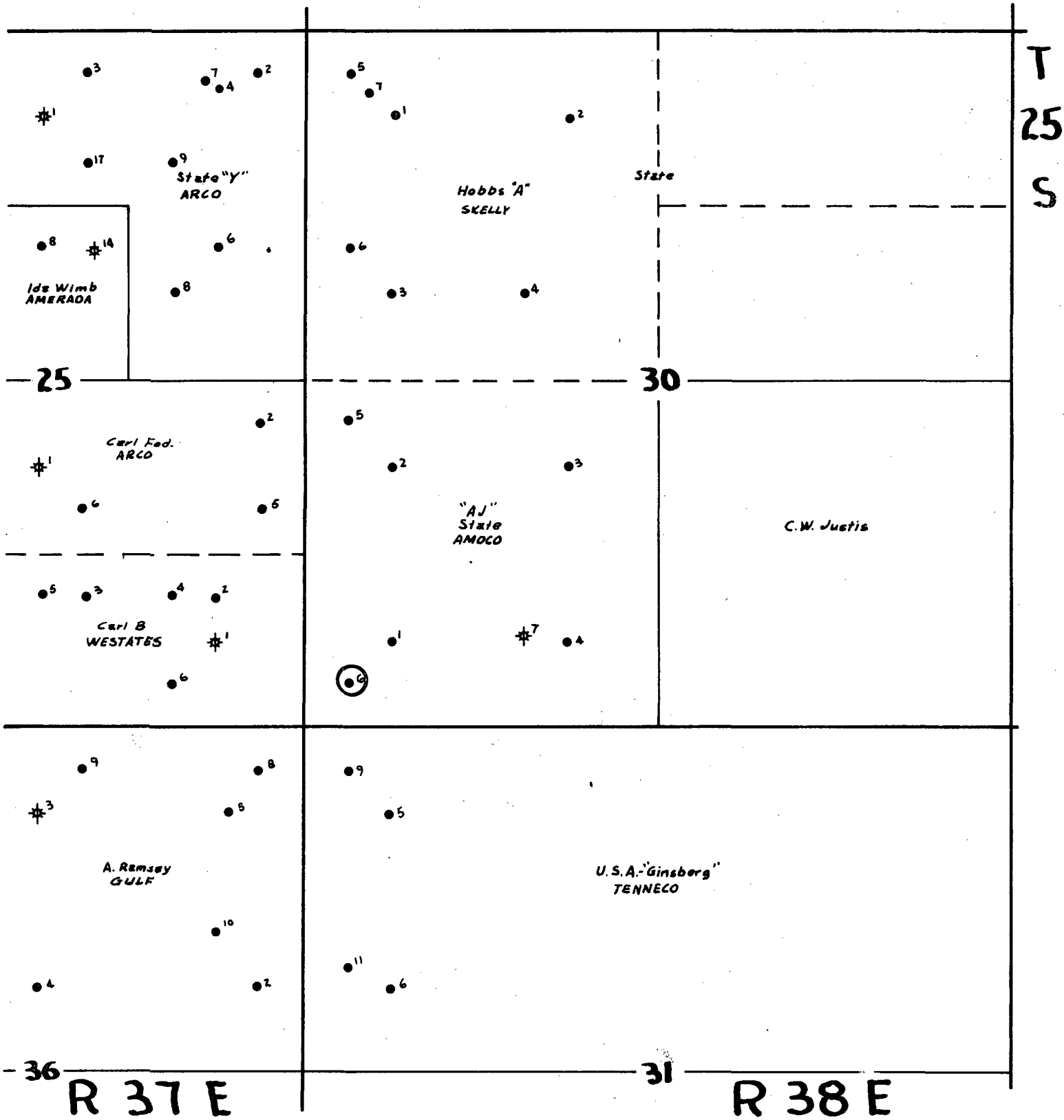
D. L. Ray

Attachments

cc: New Mexico Oil Conservation Commission
Hobbs, New Mexico

Offset Operators (list attached)

DRC:as



Amoco Prod. Co
State "AJ" Lse.
Lea Co., New Mex.
1"=1000'

NEW MEXICO OIL CONSERVATION COMMISSION

GAS – OIL RATIO TESTS

C-116
Revised 1-1-65

Operator	Pool	County
Amoco Production Company	Justis Blinebry	Lea

Address	TYPE OF TEST – (X)	Scheduled	Completion	Special
P. O. Box 68, Hobbs, New Mexico, 88240		☐	☐	☒

LEASE NAME	WELL NO.	LOCATION U	S	T	R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	GAS – OIL RATIO CU.FT./BBL.
State "AJ"	6	M	30	25	38	10/28/71	P			17	24	9.0	-	7.1	11.0	1549

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.

J E Yerk
(Signature)

Area Engineer
(Title)

November 1, 1971
(Date)

NEW MEXICO OIL CONSERVATION COMMISSION

GAS – OIL RATIO TESTS

C-116
Revised 1-1-65

Operator	Pool	County
Amoco Production Company	Justis Fusselman	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 "AJ"	6	M	30	25	38	10/28/71	P			17	24	13.0	-	11.1	1.9	171

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.

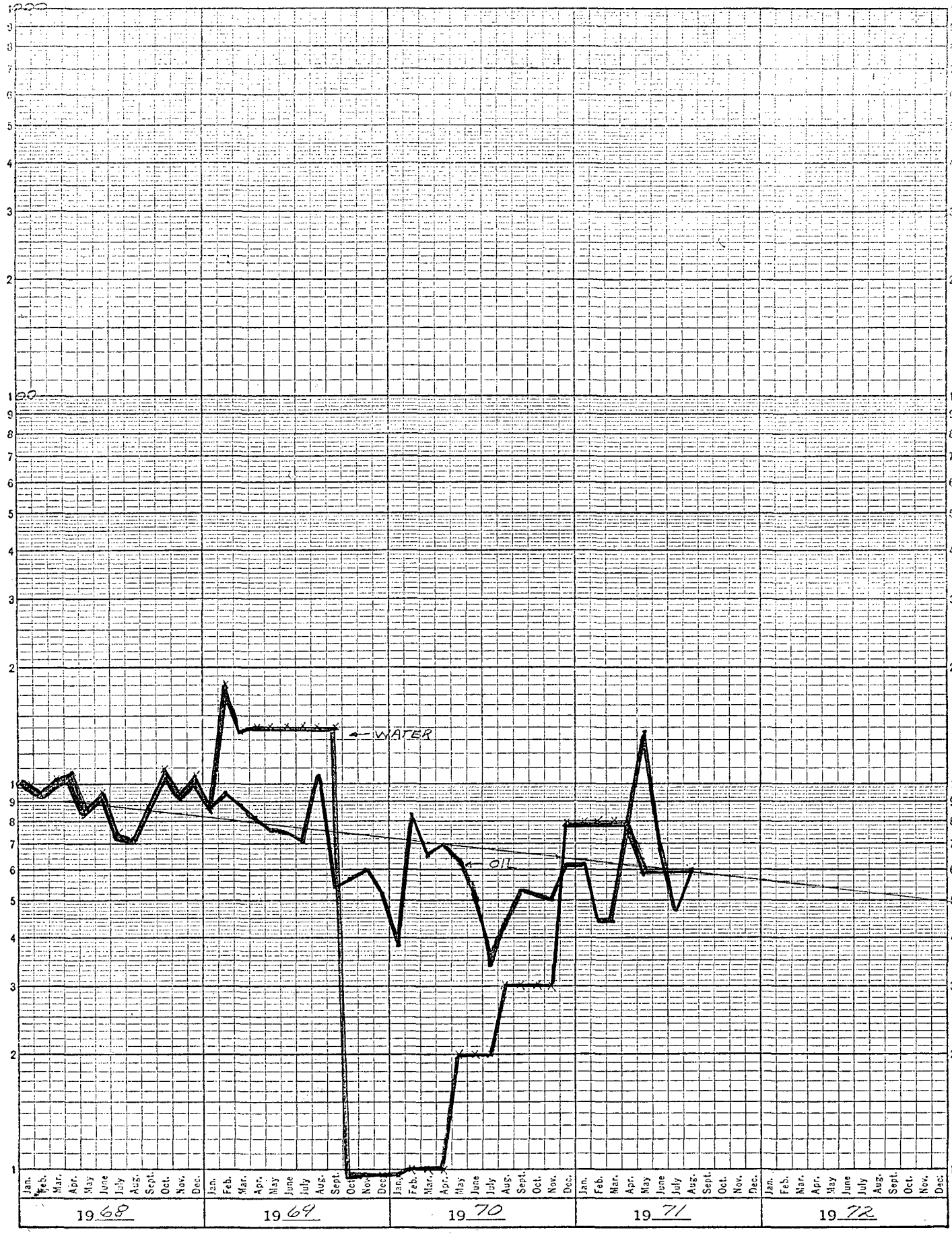
O. E. Yoke
(Signature)

Area Engineer
(Title)

November 1, 1971
(Date)

State "AJ" No. 6

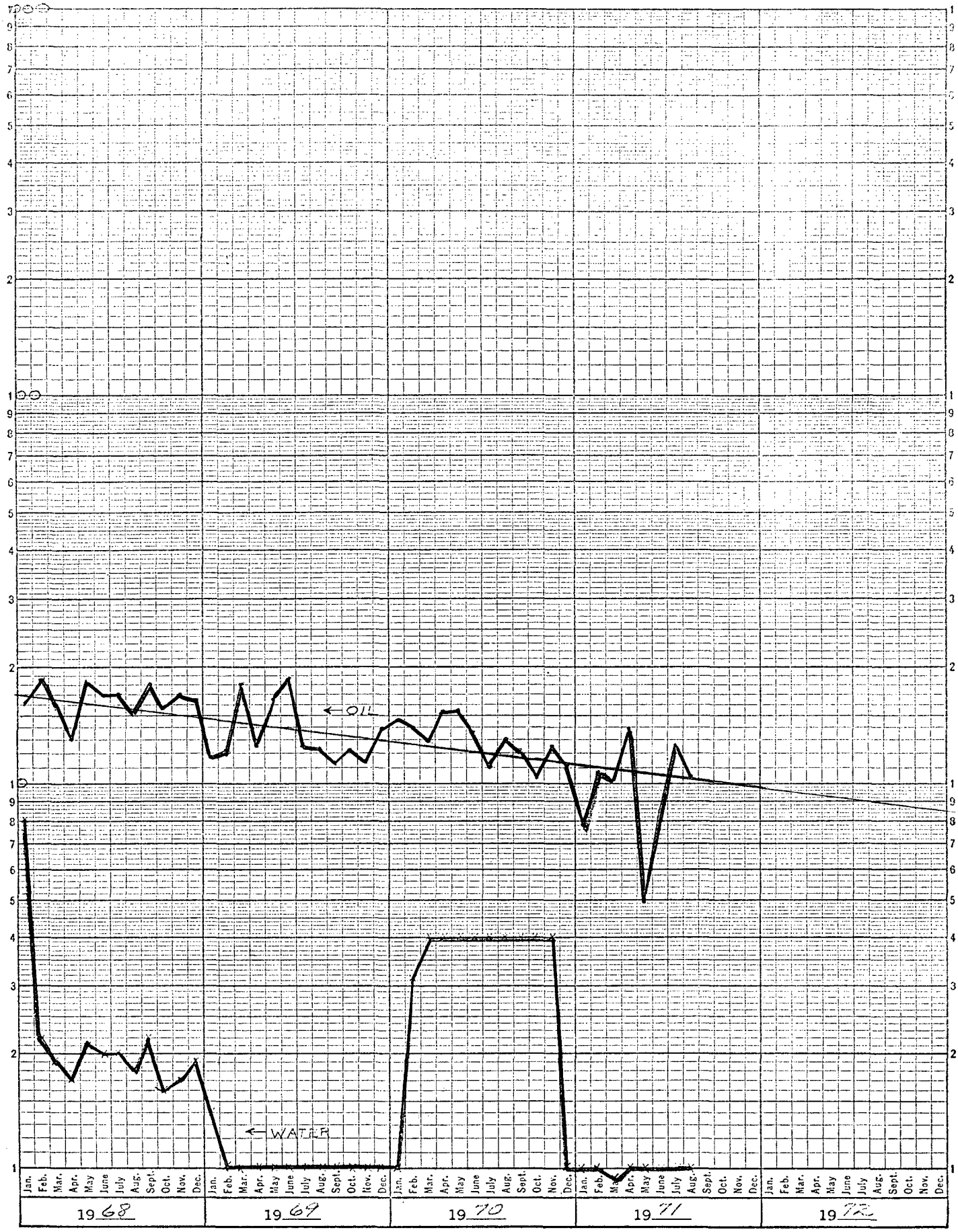
Justis Blinebry Field



5 YEARS BY MONTHS 46 6690
X 3 LOG CYCLES
MADE IN U.S.A.
KEUFFEL & ESSER CO.

State "AJ" No. 6

Justis Fusselman Field



KEUFFEL & ESSER CO. 5 YEARS BY MONTHS X 3 LOG CYCLES 46 6690 MADE IN U.S.A.

TYPE OF REPORT – (X)	
Initial Completion	
Special	
General Survey	

NEW MEXICO OIL CONSERVATION COMMISSION

RESERVOIR PRESSURE REPORT

Form C-124
Revised 1-1-65

Operator	Pool	County	Date
Pan American Petroleum Corp	Justis	Lea	12/ 18/70

Address	Producing Formation	Oil Gradient	Water Gradient	Gas Gravity	Datum Plane
P. O. Box 68, Hobbs, New Mexico	Blinebry and Fusselman	Blinebry .3633 psi/ft.	Blinebry .4775 psi/ft.	Blinebry .765	Blinebry -2300 Fusselman -3900

LEASE	WELL NO.	LOCATION U	S	T	R	ELEV.	OIL (O) OR GAS (G)	DATE TESTED	SHUT-IN HOURS	SHUT-IN TBG. PRESS.	BOMB TEST DATA: TEST DEPTH	B.H. TEMP. °F	OBSERVED PRESS.	SONIC INSTRUMENT TEST DATA*: PROD. TEST (BBLS./DAY) OIL	WATER	LIQUID LEVEL	LIQUID GRADIENT PSI/FT.	WT. OF LIQUID COL. PSI	WT. OF GAS COL. PSI	CSG. PRESS.	PRESS. AT DATUM
State "AJ"	6	M	30	25	38	3069 RDB															
Blinebry							0	1/26/70	24			114				5131	.429	102	40	267	409
Fusselman							0	10/ 2/68	24		5269	117	580				. 34				1158

All depths plus or minus sea level; all pressures psi; Bomb shall be calibrated frequently enough against a dead weight tester to ensure an accuracy of one per cent; gas gravity shall be determined by analysis; liquid level shall be feet above datum plane. SEE RULE 302.

* Well shall be produced at least 24 hours prior to shutting in for sonic test.

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

James E. York
(Signature)

Area Engineer
(Title)

December 18, 1970
(Date)

(E-OIL PRODUCTION OPERATING PRACTICES - Cont'd.)

assigned to the well, the allowable change shall become effective upon the date the Form C-116 is received by the Proration Department. A special test does not exempt any well from the regular survey.

(1) (As Added by Order No. R-3036, February 9, 1966.) During the productivity test, no well shall be produced at a rate exceeding top unit allowable for the pool in which it is located by more than 25 per cent. No well shall be assigned an allowable greater than the amount of oil produced on test during a 24-hour period.

RULE 302. SUBSURFACE PRESSURE TESTS (As Amended by Order No. R-329, June 10, 1953; Order No. R-3037, February 9, 1966.)

The operator shall make a subsurface pressure test on the discovery well of any new pool hereafter discovered, and shall report the results thereof to the Commission within 30 days after the completion of such discovery well. On or before December 1 of each calendar year the Commission shall designate the months in which subsurface pressure tests shall be taken in designated pools. Included in the designated list shall be listed the required Shut-in Pressure time and datum of tests to be taken in each pool. In the event a newly discovered pool is not included in the Commission's list, the Commission shall issue a supplementary Bottom Hole Pressure Schedule. Tests as designated by the Commission shall only apply to flowing wells in each pool. This test shall be made by a person qualified by both training and experience to make such test, and with an approved subsurface pressure instrument which shall be calibrated against an approved dead-weight tester at intervals frequent enough to ensure its accuracy within one per cent. Unless otherwise designated by the Commission all wells shall remain completely shut in for at least 24 hours prior to the test. In the event a definite datum is not established by the Commission the subsurface determination shall be obtained as close as possible to the midpoint of the productive sand of the reservoir. The report shall be on Form C-124 and shall state the name of the pool, the pool datum (if established), the name of the operator and lease, the well number, the wellhead elevation above sea level, the date of the test, the total time the well was shut in prior to the test, the subsurface temperature in degrees Fahrenheit at the test depth, the depth in feet at which the subsurface pressure test was made, the observed pressure in pounds per square inch gauge (corrected for calibration and temperature), the corrected pressure computed from applying to the observed pressure the appropriate correction for difference in test depth and reservoir datum plane and any other information as required by Form C-124.

RULE 303. SEGREGATION OF PRODUCTION FROM POOLS (As Amended by Order No. R-1597, February 8, 1960, Order No. R-2060, September 16, 1961, and Order No. R-3845, October 1, 1969.)

A. SEGREGATION REQUIRED

Each pool shall be produced as a single common source of supply and the wells therein shall be completed, cased, maintained, and operated so as to prevent communication, within the wellbore, with any other specific pool or horizon, and the production therefrom shall at all times be actually segregated, and the commingling or confusion of such production, before marketing, with the production from any other pool or pools is strictly prohibited.

B. SURFACE COMMINGLING

The Secretary-Director of the Commission shall have the authority to grant an exception to Rule 303-A to permit the commingling in common facilities of the commonly owned production from two or more common sources of supply, without notice and hearing, provided that the liquid hydrocarbon production from each common source of supply is to be accurately measured or determined prior to such commingling in accordance with the applicable provisions of the Commission "Manual for the Installation and Operation of Commingling Facilities," then current.

Applications for administrative approval to commingle the production from two or more common sources of supply shall be filed in triplicate with the Santa Fe office of the Commission. The application must contain detailed data as to the gravities of the liquid hydrocarbons, the values thereof, and the volumes of the liquid hydrocarbons from each pool, as well as the expected gravity and value of the commingled liquid hydrocarbon production; a schematic diagram of the proposed installation; a plat showing the location of all wells on the applicant's lease and the pool from which each well is producing. The application shall also state specifically whether the actual commercial value of such commingled production will be less than the sum of the values of the production from each common source of supply and, if so, how much less.

Where State or Federal lands are involved, applicant shall furnish evidence that the Commissioner of Public Lands for the State of New Mexico or the Regional Supervisor of the United States Geological Survey has consented to the proposed commingling.

C. DOWN-HOLE COMMINGLING

1. The Secretary-Director of the Commission shall have the authority to grant an exception to Rule 303-A to permit the commingling in the well-bore of dually completed oil wells when the following facts exist and the following conditions are met:

(a) Both zones to be commingled in the well-bore are classified as oil zones.

(b) The total daily production from both zones before commingling (as determined in accordance with Section 2, paragraphs (d) and (e) below) does not exceed the following:

Bottom perforation, lowermost pool	Bbls/day
Less than 4999 feet	20
5000 feet to 5999 feet	30
6000 feet to 6999 feet	40
7000 feet to 7999 feet	50
8000 feet to 8999 feet	60
9000 feet to 9999 feet	70
More than 10,000 feet	80

(c) Both zones require artificial lift, or, both zones are capable of flowing. (Special consideration may be given to an exception to this latter requirement in the case in which a particular well's characteristics may justify same; however, the commingled production must be artifically lifted if either zone required artificial lift prior to commingling.)

(E-OIL PRODUCTION OPERATING PRACTICES - Cont'd.)

(d) Neither zone produces more water than the combined oil limit as determined in paragraph (b) above.

(e) The fluids from each zone are compatible with the fluids from the other, and combining the fluids will not result in the formation of precipitates which might damage either reservoir.

(f) The total value of the crude will not be reduced by commingling.

(g) Ownership of the two zones to be commingled is common (including working interest, royalty, and overriding royalty).

(h) The commingling will not jeopardize the efficiency of present or future secondary recovery operations in either of the zones to be commingled.

2. To obtain approval for down-hole commingling, the operator of the well shall submit the following in duplicate to the Secretary-Director of the Commission plus one copy to the appropriate District Office of the Commission:

(a) Name and address of the operator.

(b) Lease name, well number, well location.

(c) Names of the pools the well is completed in and the Commission order number which authorized the dual completion.

(d) A current (within 30 days) 24-hour productivity test on Commission Form C-116 showing the amount of oil, gas, and water produced from each zone.

(e) A production decline curve for both zones showing that for a period of at least one year a steady rate of decline has been established for each zone which will permit a reasonable allocation of the commingled production to each zone for statistical purposes. (This requirement may be dispensed with in the case of a newly completed or recently completed well which has little or no production history. However, a complete résumé of the well's completion history including description of treating, testing, etc., of each zone, and a prognostication of future production from each zone shall be submitted.)

(f) Estimated bottom-hole pressure for each artificially lifted zone. A current (within 30 days) measured bottom-hole pressure for each zone capable of flowing.

(g) A description of the fluid characteristics of each zone showing that the fluids will not be incompatible in the well-bore.

(h) A computation showing that the value of the commingled production will not be less than the sum of the values of the individual streams.

(i) A statement that all offset operators and, in the case of a well on Federal land, the United States Geological Survey, have been notified in writing of the proposed commingling.

3. The Secretary-Director of the Commission may approve the proposed down-hole commingling in the absence of a valid objection within 20 days after the receipt of the application if, in his opinion, there is no disqualifying disparity of bottom-hole pressures or other reservoir characteristics, waste will not result thereby, and correlative rights will not be violated. The 20-day waiting period may be dispensed with upon receipt of waivers of objection from all parties mentioned in Section 2, paragraph (i).

(4) Upon such approval, the well shall be operated in accordance with the provisions of the administrative order which authorized the commingling, and allocation of the commingled production from the well to each of the producing zones shall be in accordance with the allocation formula set forth in the order. The production from the well shall be subject to the lower of the daily gas-oil ratio limitations applicable to the reservoirs. Wells shall be tested on a commingled basis annually, except that a well penalized for a high gas-oil ratio shall be tested semi-annually.

5. The Secretary-Director may rescind authority to commingle production in the well-bore and require both zones to be produced separately, if, in his opinion, waste or reservoir damage is resulting thereby or the efficiency of any secondary recovery project is being impaired, or if any change of conditions renders the installation no longer eligible for down-hole commingling under the provisions of Section 1, paragraphs (a) through (h).

RULE 304. CONTROL OF MULTIPLE COMPLETED WELLS

Multiple completed wells which have been authorized by the Commission shall at all times be operated, produced, and maintained in a manner to insure the complete segregation of the various common sources of supply. The Commission may require such tests as it deems necessary to determine the effectiveness of the segregation of the different common sources of supply.

RULE 305. METERED CASINGHEAD GAS

The owner of a lease shall not be required to measure the exact amount of casinghead gas produced and used by him for fuel purposes in the development and normal operation of the lease. All casinghead gas produced and sold or transported away from a lease, except small amounts of flare gas, shall be metered and reported in standard cubic feet monthly to the Commission. The amount of casinghead gas sold in small quantities for use in the field may be calculated upon a basis generally acceptable in the industry, or upon a basis approved by the Commission in lieu of meter measurements.

RULE 306. VENTED CASINGHEAD GAS

Pending arrangement for disposition for some useful purpose, all vented casinghead gas shall be burned, and the estimated volume reported on Form C-115.

RULE 307. USE OF VACUUM PUMPS

Vacuum pumps or other devices shall not be used for the purpose of creating a partial vacuum in any stratum containing oil or gas.

RULE 308. SALT OR SULPHUR WATER

Operators shall report monthly on Form C-115 the amount or percentage of salt or sulphur water produced with the oil by each well making 2% or more water.

TEXAS-NEW MEXICO PIPE LINE COMPANY

P. A. LYONS
DIVISION MANAGER

P. O. BOX 1510
MIDLAND, TEXAS 79701

June 15, 1971

DOWNHOLE COMMINGLING
STATE "AJ" WELL NO.6
LEA COUNTY, NEW MEXICO

Mr. V. E. Staley
Area Superintendent
Amoco Production Company
P.O. Box 68
Hobbs, New Mexico 88240

Dear Mr. Staley:

Texas-New Mexico Pipe Line Company is presently running commingled oil from the Justis Blinebry and Justis Fusselman Zones as sweet crude from your State "AJ" lease.

We have no objections to continue running the crude from the State "AJ" lease regardless of the method of commingling as long as it does meet the minimum standard specifications for the sweet crude common stream.

When the New Mexico Oil Conservation Commission authorization of down hole commingling has been approved by administrative order, we will make a corrected connection order for the lease.

Yours very truly,

P. A. Lyons

KJMcG,jr.-MAH

WOLF PETRO LAB, INC.

DIAL EMERSON 6-9701
DIAL EMERSON 6-7171

2411 WEST 42ND STREET

P. O. BOX 643
ODESSA, TEXAS
79760

HYDROCARBON ANALYSIS

LABORATORY REPORT

Charge: Amoco Production Company
Test No.: WPL-71-1060
Date of Run: 9-12-71
Date Received: 9-10-71

A Sample of: Crude Oil from Wellhead - State "AJ" No. 6
Secured from: Justis - Blinebry - Fusselman Field
At: Lea County, New Mexico
Secured by:
Purpose:
Date: 9-8-71
Time:
Sampling Conditions: 65 % Fusselman Formation
35 % Blinebry Formation

DISTILLATION

I B P	°F
5%	°F
10%	°F
20%	°F
30%	°F
40%	°F
50%	°F
60%	°F
70%	°F
75%	°F
80%	°F
85%	°F
90%	°F
95%	°F
End Point	°F
% Loss	
% Recovery	
Color	

YIELD

Gasoline 300°F	%
Gasoline 350°F	%
Gasoline 400°F	%
Total Gasoline	%
Kerosene 525°F	%
Diesel Fuel 650°F	%

ASTM OR SPECIAL TESTING

Ash Content	
Acid or Base Numbers	
B. S. & W. (Centrifuge)	
Carbon Residue	
Carbon Residue on 10% Residue	
Cloud and Pour Point to °F	
Doctor Test	
Flash Point (open or closed)	
Fire Point	
Gravity, A. P. I. Hydrometer	36.60 @ 60° F
Hydrogen Sulfide (Crude Oil)	
Salt Content (Crude Oil)	
Sulfur (lamp method)	.57423 % By Weight
Vapor Pressure (Reid)	
Vapor Pressure (N.G.A.A.)	
Vapor Pressure (Lean Oil)	
Viscosity (Saybolt) 100°F	
Viscosity (Saybolt) 210°F	
Viscosity (Index No.)	

Run by: J. Wolf Checked by: J. Wolf Approved: J. Wolf

Additional Data and Remarks

TEXAS-NEW MEXICO PIPELINE COMPANY
2 - Mr. J. D. Sheridan
Box 1018
Eunice, New Mexico 88231
1 - File

COPIES

3 - Mr. V. E. Staley
Box 68
Hobbs, New Mexico 88240
1 - Mr. J. E. Leascher
Oil Purchases & Sales Department
Box 1725
Midland, Texas 79701

VALUE OF COMBINED STREAMS

BEFORE COMMINGLING

Fusselman (Sweet)	11.1 BOPD @ $3.48/Bbl.	=	$38.63/Day
Blinebry (Sour)	7.1 BOPD @ $3.31/Bbl.	=	23.50/Day
Total Daily Oil Revenue			$62.13/Day

Commingled Production

	18.2 BOPD @ $3.48/Bbl.	=	$63.34/Day

Atlantic Richfield Company
Box 1610
Midland, Texas 79701

Skelly Oil Company
Box 1351
Midland, Texas 79701

Westates Petroleum Company
Box 894
Odessa, Texas 79760

Gulf Oil Company - U.S.
Box 1150
Midland, Texas 79701

Amerada
Box 591
Midland, Texas 79701