



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

ilg

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

April 2, 1984

Administrative Order No. DHC-467

Southland Royalty Company
P.O. Drawer 570
Farmington, NM 87401

Attention: Doug R. Harris

Re: SRC-Moore #3, Unit J,
Sec. 35, T-32N, R-12W,
San Juan County, NM,
Fruitland and Pictured
Cliffs Pools

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APR 10 1984
OIL CONSERVATION
DIVISION

Gentlemen:

Reference is made to your recent application for an exception to Rule 303-A of the Division Rules and Regulations for the subject dually completed well to permit the removal of the down-hole separation equipment and to commingle the production from both pools in the wellbore.

It appearing that the subject well qualifies for approval for such exception pursuant to the provisions of Rule 303-C, and that reservoir damage or waste will not result from such downhole commingling, and correlative rights will not be violated thereby, you are hereby authorized to commingle the production as described above and any administrative Division Order No. which authorized the dual completion and required separation of the two zones, is hereby placed in abeyance.

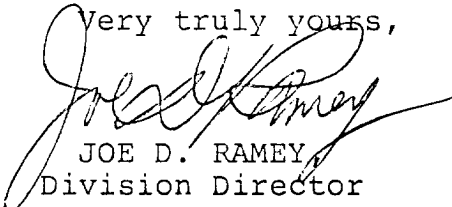
In accordance with the provisions of Rule 303.C.4., total commingled oil production from the subject well shall not exceed 20 barrels per day, and total water production from the well shall not exceed 40 barrels per day. The maximum amount of gas which may be produced daily from the well shall be determined by adding the individual gas production from each pool just prior to commingling.

Assignment of allowable to the well and allocation of production from the well shall be on the following basis:

Fruitland Pool: Oil 100 %, Gas 68 %
Pictured Cliffs Pool: Oil 0 %, Gas 32 %

Pursuant to Rule 303-C 5, the commingled authority granted by this order may be rescinded by the Division Director if, in his opinion, conservation is not being best served by such commingling.

Very truly yours,



JOE D. RAMEY
Division Director



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

OIL CONSERVATION DIVISION
BOX 2088
SANTA FE, NEW MEXICO 87501

DATE 3-20-84

RE: Proposed MC _____
Proposed DHC X _____
Proposed NSL _____
Proposed SWD _____
Proposed WFX _____
Proposed PMX _____

Gentlemen:

I have examined the application dated 3-14-84
for the Shenandoah Royalty Moore #3 J-35-32N-12W
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Approve

Yours truly,

Frank J. O'Leary



Southland Royalty Company

March 9, 1984

Mr. Joe D. Ramey
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

RE: Downhole Commingling
SRC - Moore #3
Fruitland/Pictured Cliffs
SE/4, Section 35, T32N, R12W
San Juan County, New Mexico

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MAR 14 1984
OIL CON. DIV.
DIST. 3

Dear Mr. Ramey:

Southland Royalty Company requests permission to downhole commingle production from the Fruitland and Pictured Cliffs formations in this dual well. The Fruitland formation cannot continuously produce enough gas to lift the oil it produces. With the additional gas from the Pictured Cliffs formation, we feel that the Fruitland oil will be produced with fewer problems.

The gas produced from each zone is similar, and the Fruitland oil produced has no adverse effect on the Pictured Cliffs formation. Bottom hole pressures are similar for the two formations and there will be no crossflow between the zones, therefore no production will be lost.

Production allocation between the two zones was determined from the decline curves and cumulative production from each zone. Proposed allocation is as follows:

Oil Production:	100% Fruitland
Gas Production:	68% Pictured Cliffs 32% Fruitland

Royalty ownership in both zones of the well are identical. The well is currently unproductive and no current 24 hour productivity test can be supplied, therefore, we have included the latest deliverability test reports. In addition, copies of gas analysis from each zone, decline curves, production plats, and miscellaneous data are included with this package for your information.

Mr. Joe D. Ramey
Page Two
March 9, 1984

A copy of this application has also been sent to the Bureau of Land Management
and all offset operators.

Sincerely,

SOUTHLAND ROYALTY COMPANY

Doug R. Harris
Petroleum Engineer

Doug R. Harris
DRH/eg

Attachments

XC: BLM-Farmington
Mesa Petroleum-Amarillo, TX
Kimbark Oil & Gas Co.-Denver, CO

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DIST. 3

MISCELLANEOUS DATA

Fruitland Bottom Hole Pressure	=	867 psi
Pictured Cliffs Bottom Hole Pressure	=	808 psi
Fruitland Oil Gravity	=	46.3 Deg.

BTU/CF at 14.73/60 F/Dry (Fruitland)	1265.7
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BTU/CF at 14.73/60 F/Dry (Pictured Cliffs)	1194.6
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OIL CON. DIV.
DIST. 3

WELL DELIVERABILITY TEST REPORT FOR IS 82

WELL NAME Undesignated	WELL SLOPE R= .85	PERMITTEE Fruitland	COUNTY San Juan
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OWNER Southland Royalty Company			WELL NAME AND NUMBER Moore #3		
WELL LETTER J	SECTION 35	TOWNSHIP 32N	RANGE 12W	PURCHASER-OPERATOR Southern Union Gathering	
CASING I.D. - INCHES 4.500	CASING I.D. - INCHES 4.052	SET AT DEPTH - FEET 3038	TUBING O.D. - INCHES 1.900	TUBING I.D. - INCHES 1.610	TOP - TUBING PERF. - FEET
Casing Port Size FROM 2456 TO 2544		WELL PRODUCTION TEST Casing X Tubing		Casing Gravity .689	Casing & Tubing 1692
DATE OF FLOW TEST FROM 4-9-82 TO 4-17-82			DATE SHUT-IN PRESSURE MEASURED 4-24-82		

PRESSURE DATA - ALL PRESSURES IN PSIA

(a) Flowing Casing Pressure (DWI)	(b) Flowing Tubing Pressure (DWI)	(c) Flowing Meter Pressure (DWI)	(d) Flow Choke Static Standing	(e) Meter Error (Initial - Final)	(f) Friction Loss (a-c) - (b-d)	(g) Average Meter Pressure (Average)
433	-0-	438	442	-4	-5	444
(h) Cased Meter Pressure (g-h)	(i) Avg. Wellhead Press. $P_1 = (b+f)$	(j) Shut-in Casing Pressure (DWI)	(k) Shut-in Tubing Pressure (DWI)	(l) $P_2 =$ higher value of (i) or (k)	(m) Del. Pressure $P_d =$ <u>80</u> % P_2	(n) Separator or Condensate Pr. (DWI) (no control: same as j)
440	435	770	-0-	770	616	

FLOW-RATE CORRECTION (METER ERROR)

Integrated Volume - MCF/D	Quantity of $\frac{\text{Error}}{\text{Reading}}$	$\sqrt{\frac{\text{Error}}{\text{Reading}}}$	Corrected Volume
87	.9910	.9955	Q = 87 MCF/D

WORKING PRESSURE CALCULATION

$(1 \rightarrow 2)$	$(P_1 Q_w)^2 (1000)$	$\frac{P_1^2}{(1 \rightarrow 2) (P_1 Q_w)^2 (1000)}$	P_1^2	$P_w^2 = P_1^2 + P^2$	$P_w = \sqrt{P_w^2}$
.116	59	7	189225	189232	435

DELIVERABILITY CALCULATION

$$D = Q \left[\frac{P_1^2 - P_d^2}{P_1^2 - P_w^2} \right]^{.875} = 87 \left[\frac{213444}{403668} \right]^{.875} \left(\frac{.5288}{.5818} \right)^{.875} = 51 \text{ MCF/D}$$

REMARKS:

FIRST AND ANNUAL

SUMMARY

Depth 440 Feet
 P_1 770 Feet
 Q 87 MCF/D
 P_w 435 Feet
 P_d 616 Feet
 D 51 MCF/D

Company Southland Royalty Company

By CC Larson
Title District Manager

Witnessed By _____

Company _____

May 17, 1982

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MAR 14 1984

OIL CON. DIV.

WELL DELIVERABILITY TEST REPORT FOR 19 82

WELL NAME Blanco	WELL DEPTH n= .85	FORMATION Pictured Cliffs	COUNTY San Juan
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OWNER Southland Royalty Company			WELL NAME AND NUMBER Moore #3		
WELL-LETTED J	SECTION 35	TOWNSHIP 32N	RANGE 12W	PURCHASER-OPERATOR Southern Union Gathering	
CASING O.D. - INCHES 4.500	CASING I.D. - INCHES 4.052	SET AT DEPTH - FEET 3038	TUBING O.D. - INCHES 1.900	TUBING I.D. - INCHES 1.610	TOP - TUBING-DEPT. - FEET 2915
WELL PRODUCTION TIME			WELL PRODUCTION TIME		
PROD. 2870	TO 2954	CASING	TUBING X	CASING GRAVITY .689	GRAVITY S. LEGEND 2008
DATE OF FIELD TEST PROD. 4-9-82 TO 4-17-82			DATE OF FIELD TEST 4-24-82		

PRESSURE DATA - ALL PRESSURES IN PSIA

(a) Flowing Casing Pressure (DPR)	(b) Flowing Tubing Pressure (DPR)	(c) Flowing Bottom Pressure (DPR)	(d) Flow Choke Static Reading	(e) Meter Error (Range - Range)	(f) Friction Loss (Range - Range)	(g) Average Meter Pressure (Average)
-0-	433	438	442	-4	-5	444
(h) Corrected Meter Pressure (g + e)	(i) Avg. Wellhead Pressure $P_1 = (b + f)$	(j) Shut-in Casing Pressure (DPR)	(k) Shut-in Tubing Pressure (DPR)	(l) $P_2 =$ higher value of (i) or (k)	(m) Del. Pressure $P_d =$ <u>80</u> $\times P_2$	(n) Separator or Dehydrator Pr. (DPR) (as critical, none only)
440	435	-0-	696	696	557	

FLOW RATE CORRECTION (METER ERROR)

Integrated Volume - MCF/D	Quantity of Meter	Corrected Volume	Quantity of Meter
171	.9910	.9955	Q = 170 MCF/D

WORKING PRESSURE CALCULATION

$(1 - \frac{P_1}{P_2})$	$(P_2 Q_u)^2 (1000)$	$P_1^2 = (1 - \frac{P_1}{P_2}) (P_2 Q_u)^2 (1000)$	P_1^2	$P_2^2 = P_1^2 + P_d^2$	$P_2 = \sqrt{P_2^2}$
.136	7830	1065	189225	190290	436

DELIVERABILITY CALCULATION

$D = Q \left[\frac{P_2^2 - P_1^2}{P_2^2 - P_d^2} \right]^{.875}$	170	$\left[\frac{174167}{294126} \right]^{.875}$	$(.5922)^{.875}$	.6406	109 MCF/D
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REMARKS:

FIRST AND ANNUAL

SUMMARY

P₁ = 440
 P₂ = 696
 Q = 170 MCF/D
 P_d = 436
 P₂ = 557
 D = 109 MCF/D

Company Southland Royalty Company

By [Signature]
Title District Manager

Witnessed By

Company

May 17, 1982

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OIL CON. DIV.

SOUTHERN UNION GATHERING COMPANY
REPORT OF BTU TEST RESULTS

48314

TO: SOUTHLAND ROYALTY CO (826)

REF: MOORE 003 PC
9325
NORTHWEST NEW MEXICO (70)

DATE OF THIS TEST: 4/08/82
DATE OF LAST TEST: NO PRIOR TEST
TEST FREQUENCY: 12

RESULTS: SPECIFIC GRAVITY: 0.6749
BTU/CF @ 14.73/60F/DRY: 1194.6

	MCL %	G.P.M.
CARBON DIOXIDE	0.263	0.0000
NITROGEN	0.126	0.0000
METHANE	86.340	0.0000
ETHANE	7.430	1.9870
PROPANE	3.208	0.8820
ISOBUTANE	0.600	0.1960
N-BUTANE	0.812	0.2560
ISOPENTANE	0.307	0.1120
N-PENTANE	0.213	0.0770
HEXANE +	0.727	0.3200
TOTAL	100.026	3.8300

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OIL CON. DIV.
DIST. 3

SOUTHERN UNION GATHERING COMPANY
REPORT OF BTU TEST RESULTS

48311

TO: SOUTHLAND ROYALTY CO (826)

REF: MOORE 003 FRT
9257
NORTHWEST NEW MEXICO (70)

DATE OF THIS TEST: 4/08/82
DATE OF LAST TEST: NO PRIOR TEST
TEST FREQUENCY: 12

RESULTS: SPECIFIC GRAVITY: 0.7154
BTU/CF @ 14.73/60F/DRY: 1265.7

	MOL %	G.P.M.
CARBON DIOXIDE	0.023	0.0000
NITROGEN	0.094	0.0000
METHANE	80.690	0.0000
ETHANE	9.450	2.5280
PROPANE	6.868	1.8900
ISOBUTANE	1.011	0.3300
N-BUTANE	1.157	0.3640
ISOPENTANE	0.220	0.0800
N-PENTANE	0.162	0.0580
HEXANE +	0.346	0.1520
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TOTAL	100.021	5.4020

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Southland Royalty Company

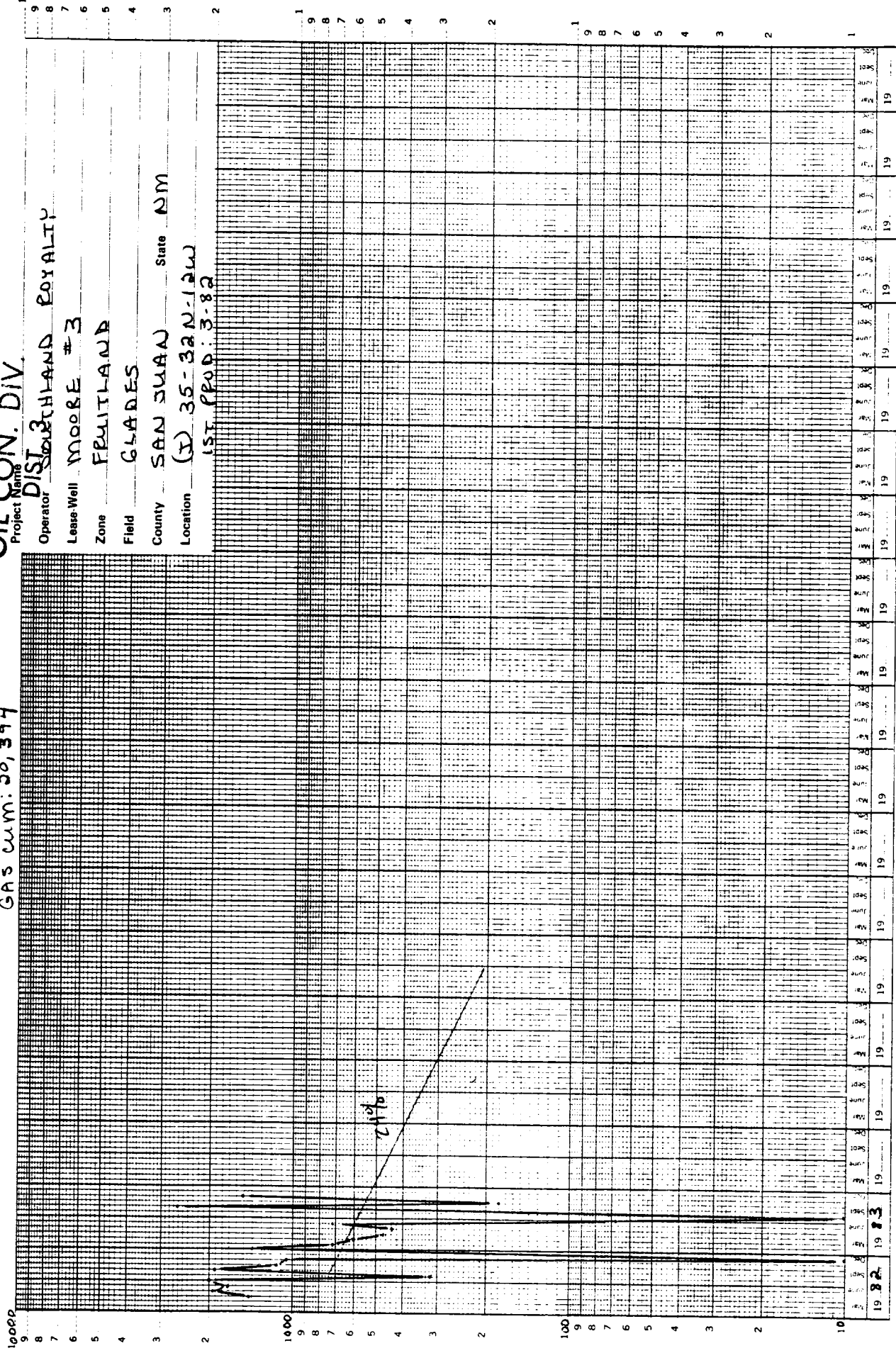
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GAS cum: 20,394

OIL CON. DIV.

Project Name DIS 3
Operator SOUTHLAND ROYALTY
Lease Well MOORE #3
Zone FRUITLAND
Field GLADES
County SAN JUAN State NM
Location (X) 35-32N-12W
IST PROD: 3-82



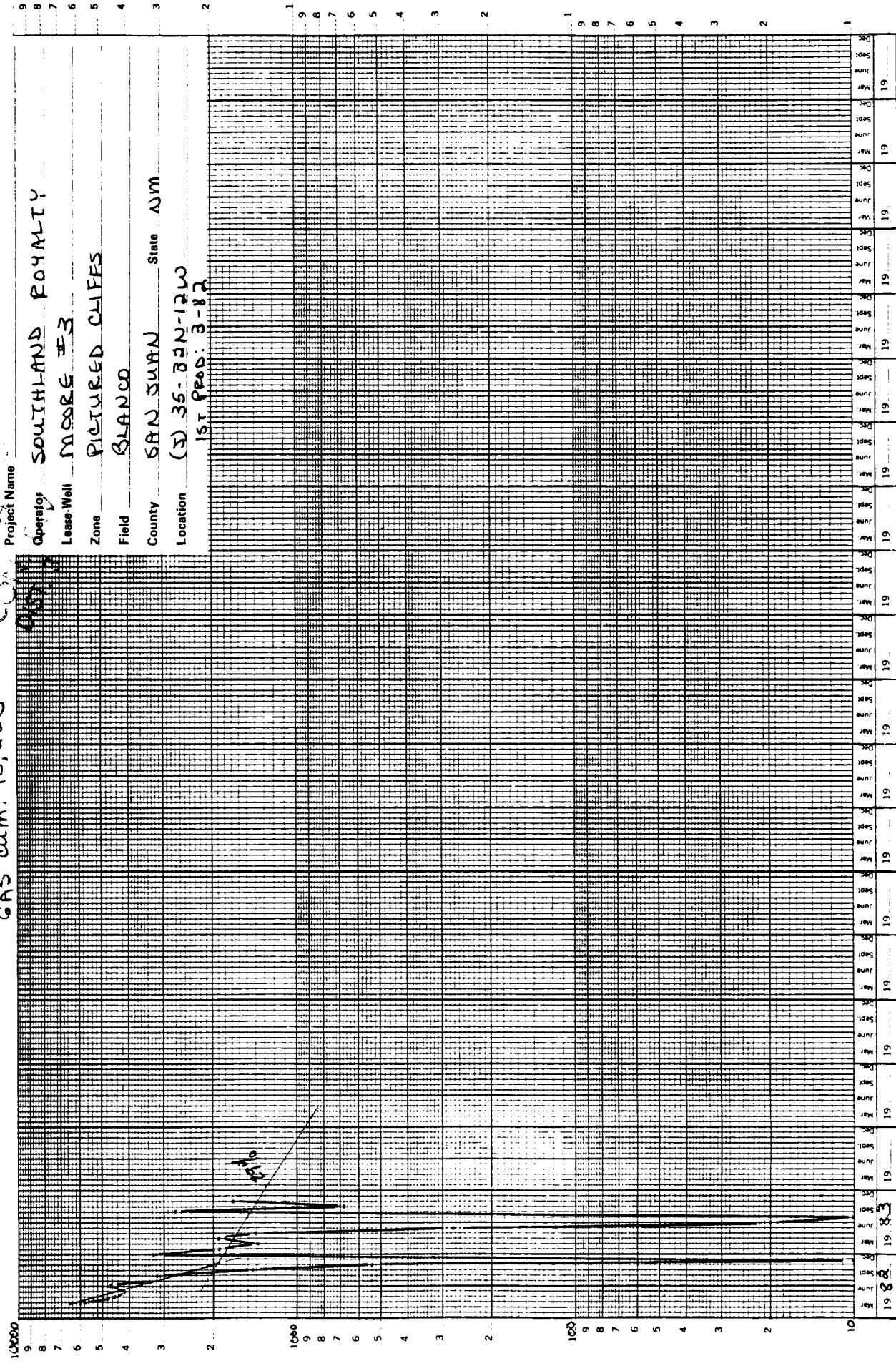


Southland Royalty Company

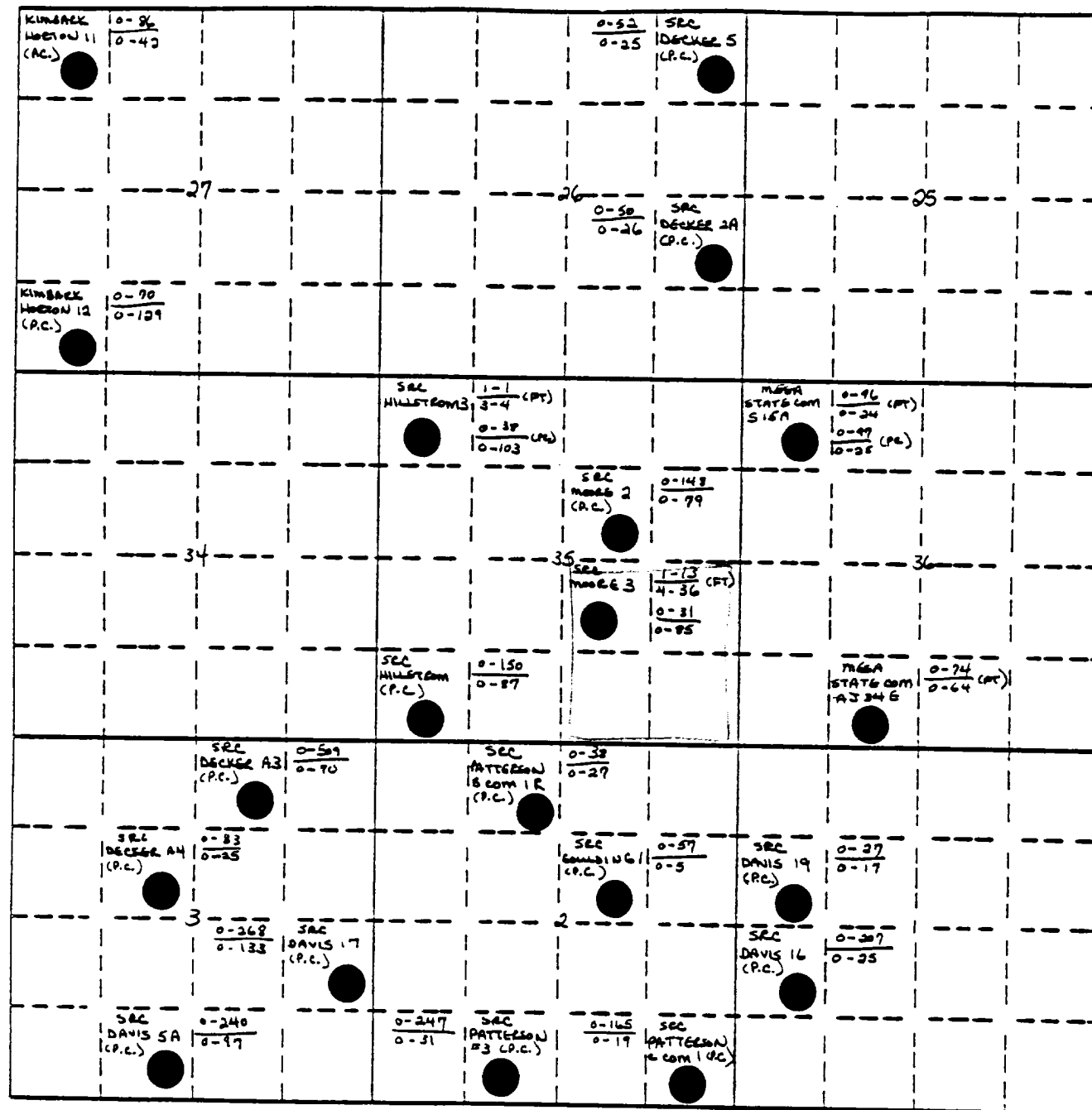
GAS cum: 43,223

MAR 1 1983
OIL COMPANY

Project Name
Operator SOUTHLAND ROYALTY
Lessee-Well MOORE #3
Zone PICTURED CLIFFS
Field BLANCO
County SAN JUAN State NM
Location (S) 35-32N-12W
1ST PROD: 3-82



12W



S.R.C.

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SAC CON. DIV.
DIST. 3

SOUTHLAND ROYALTY COMPANY

MOORE #3 (FRUIT. - P.C.)

(D) 35-32N-12W SAN JUAN

PRODUCTION

CONTOURED	CL
BY	DATE
REVISED BY	DATE
REFERENCE	DATE

NOTES

