NSL-174

THE ATLANTIC REFINING COMPANY
PETROLEUM PRODUCTS

Midland, Texas

Domestic Producing Department

Address Reply To:
P. O. Box 1610
Midland, Texas

Dec Dec 8, 1958

November 17, 1958

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

Re: Application for Administrative Approval of an 80-acre Non-Standard Gas Proration Unit, Eumont Gas Pool, Comprised of S/2 SW/4 of Section 34, T-20S, R-36E, Lea County, New Mexico

Application for Administrative Approval of a Non-Standard Location for a Gas Well, Eumont Gas Pool, Located 330' from the South Line and 1652' from the West Line of Section 34, T-20S, R-36E, Lea County, New Mexico

Gentlemen:

The Atlantic Refining Company respectfully requests administrative approval under provisions of Rule 5 (b) of NMOCC Order No. R-520 for a non-standard gas proration unit for its Seale (Federal) No. 4 Well, located 330' from the south line and 1652' from the west line of Section 34, T-20S, R-36E, Eumont Pool, Lea County, New Mexico. The proposed non-standard gas proration unit is to consist of 80-acres comprising the S/2 SW/4 of the above described section. Upon approval of this non-standard unit, it is requested that the New Mexico Oil Conservation Commission Administrative Order NSP-208, dated November 30, 1956, covering the SW/4 of Section 34, T-20S, R-36E, Lea County, New Mexico, be cancelled.

In addition, The Atlantic Refining Company respectfully requests administrative approval of a non-standard location for its Seale (Federal) No. 4 Well in exception to Rule 2 of NMOCC Order No. R-520.

In support of this application, the following facts are submitted:

1. The Atlantic Refining Company is the owner and operator of an oil and gas lease known as the Atlantic Seale (Federal) Lease which covers the SW/4 of Section 34, T-20S, R-36E, Lea County, New Mexico.

2. The Atlantic Refining Company is the owner and operator of the Atlantic Seale (Federal) No. 4 Well which was drilled to and completed in the Yates and Seven Rivers formations as an oil well in the Eumont Pool on January 29, 1956.

3. The Atlantic Seale (Federal) No. 4 Well was drilled and completed as an oil well in an orthodox location under the terms of Rule 104 (b) of the Commission's Rules and Regulations. This location is 330' from the South line and 1652' from the west line of Section 34, T-20S, R-36E, NMPM, Lea County, New Mexico.

4. The Atlantic Seale (Federal) No. 4 Well had a decreasing oil production so that GOR limitations for an oil well were exceeded and the well was reclassified as a gas well. (See attached GOR and Multi-Point Back Pressure Tests).

5. A plat is attached hereto showing the proposed 80-acre non-standard gas proration unit, the location of the Atlantic Seale (Federal) No. 4 Well, and the location of offset wells.

6. The proposed non-standard gas proration unit complies with the provisions of Rule 5 (b) of Order R-520 in that

(a) it is composed of contiguous quarter-quarter sections,
(b) it lies wholly within a single governmental section,
(c) the entire unit may reasonably be presumed to be productive of gas,
(d) neither its length nor its width exceeds 5280', and
(e) all operators owning interests within the same governmental section as the proposed unit, and all operators owning interests within 1500' of the well to which this unit is proposed to be allocated, have been notified of Atlantic's intent to form the unit by means of a copy of this application sent by registered mail.

7. Six copies of the New Mexico Oil Conservation Commission's revised Form C-128 are attached in accordance with the New Mexico Oil Conservation Commission Order R-985.

8. The granting of this application for the non-standard gas proration unit and the non-standard gas well location is in the interest of conservation and the protection of correlative rights.

Respectfully submitted,

THE ATLANTIC REFINING COMPANY

P. E. Fletcher

P. E. Fletcher,
Regional Operations Manager

AFFIDAVIT

On this the 17th day of November, 1958, before me appeared P. E. Fletcher, to me personally known to be the person who executed the foregoing instrument and who after being by me duly sworn on oath, stated that he is employed by or associated with The Atlantic Refining Company in the capacity of Regional Operations Manager, and that the above statements are true and correct.

IN WITNESS THERETO, I have hereunto set my hand and seal on the day and year first above written.

Notary Public In and For Midland County, Texas

MAILING LIST

New Mexico Oil Conservation Commission
Box 871
Santa Fe, New Mexico

*Cactus Drilling Company
1316 East Alston
Hobbs, New Mexico

*Elliott, Inc.
Box 703
Roswell, New Mexico

*Gulf Oil Corporation
Box 2167
Hobbs, New Mexico

*Amerada Petroleum Corporation
Box 2040
Tulsa, Oklahoma

*Charm Oil Company
302 Carper Building
Artesia, New Mexico

*Sinclair Oil & Gas Company
Box 809
Roswell, New Mexico

*Morris R. Antweil
Box 1058
Hobbs, New Mexico

*The Superior Oil Company
218 West Illinois
Midland, Texas

*Sent by registered mail with return receipt requested.

Form C-128
Revised 5/1/57

NEW MEXICO OIL CONSERVATION COMMISSION

Well Location and Acreage Dedication Plat

Section A.

Date July 14, 1958

Operator The Atlantic Refining Company Lease Seale-Federal No. 063116

Well No. 4 Unit Letter N Section 34 Township 20 South Range 36 East NMPM

Located 330 Feet From South Line, 1652 Feet From West Line

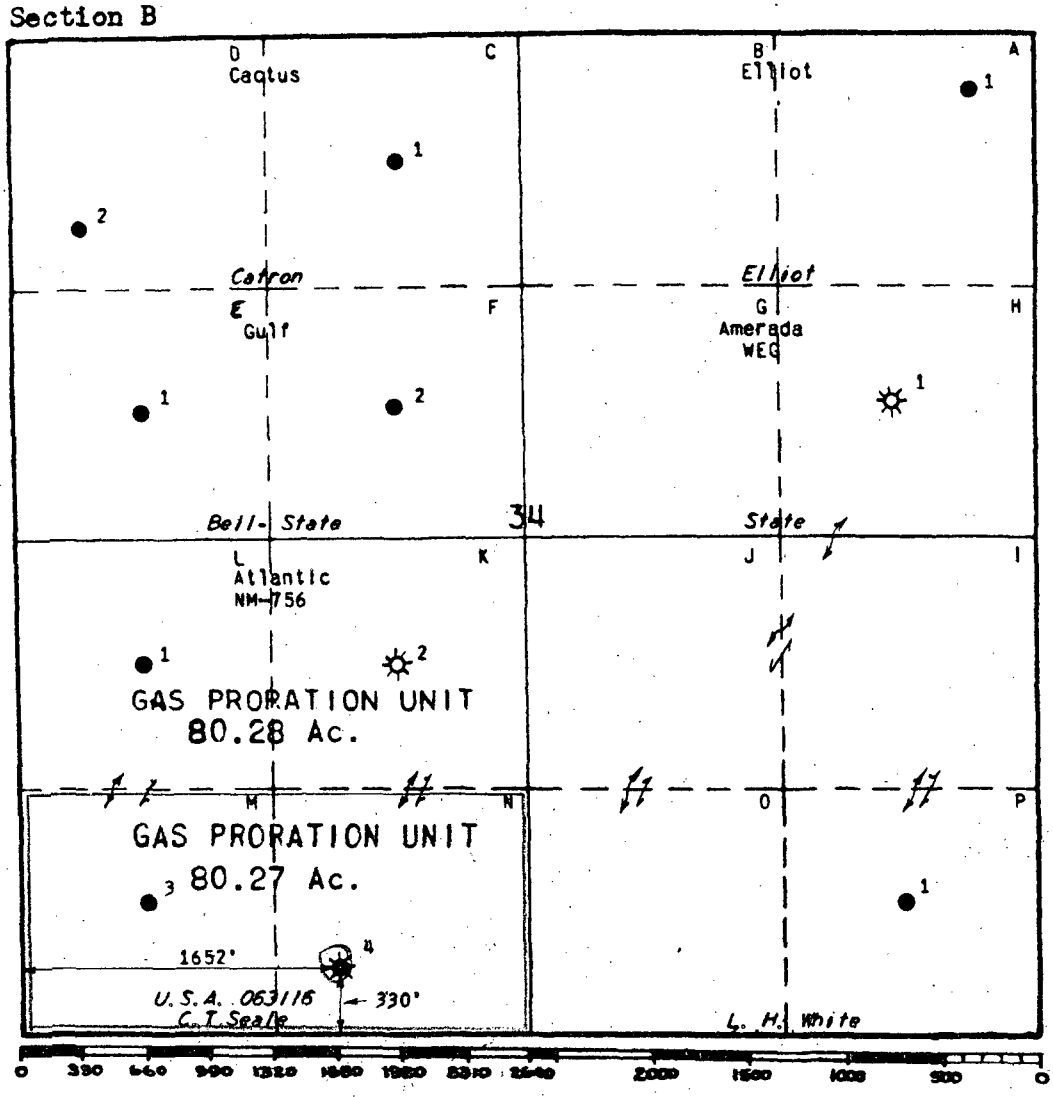
County Lea G. L. Elevation _____ Dedicated Acreage 80.27 Acres

Name of Producing Formation Yates-Seven Rivers Pool Eumont

1. Is the Operator the only owner* in the dedicated acreage outlined on the plat below? Yes X No _____.
2. If the answer to question one is "no," have the interests of all the owners been consolidated by communitization agreement or otherwise? Yes _____ No _____. If answer is "yes," Type of Consolidation _____
3. If the answer to question two is "no," list all the owners and their respective interests below:

Owner	Land Description

Section B



This is to certify that the information in Section A above is true and complete to the best of my knowledge and belief.

The Atlantic Refining Company
(Operator)

W. J. Burkett
(Representative)

P.O. Box 2819 Dallas, Texas
Address

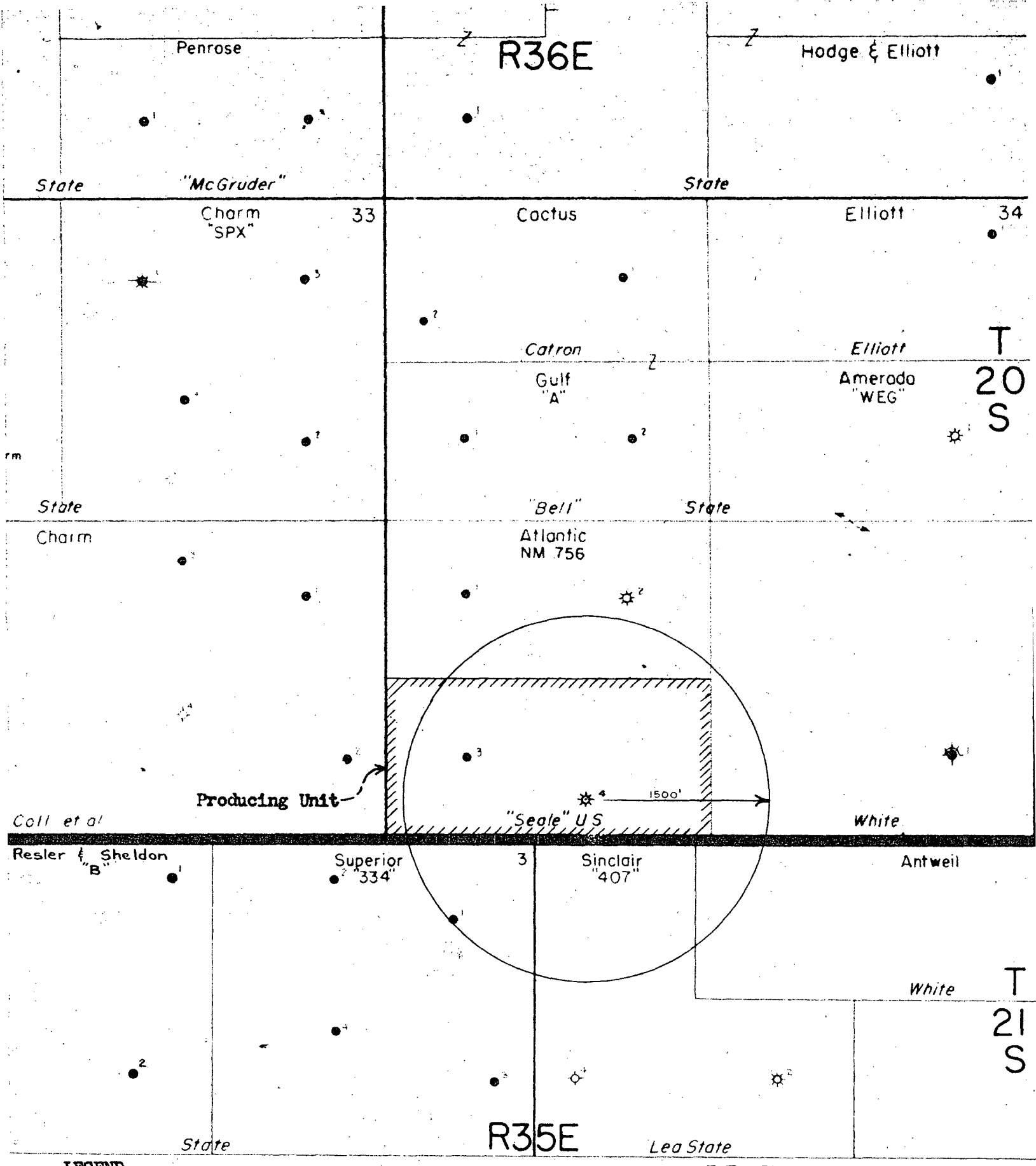
This is to certify that the well location shown on the plat in Section B was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed 11-15-55

W. J. Burkett
W. J. Burkett, Chief Surveyor
The Atlantic Refining Company

(See instructions for completing this form on the reverse side)

UA10-564



- LEGEND -

- ● Eumont Oil Producer
- ✷ Abn'd Eumont Gas, Eumont Oil Only
- ✷ Dual, Abn'd. Eumont Oil, Eumont Gas Only
- ☼ Eumont Gas Producer

THE ATLANTIC REFINING COMPANY
WEST TEXAS - NEW MEXICO REGION
EUMONT POOL
SCALE 1"=1000'
To Accompany Application for
Non-Standard Gas Unit - Atlantic
Seale (Federal) No. 4 Well

Form C-116
Revised (12/1/55

NEW MEXICO OIL CONSERVATION COMMISSION

GAS-OIL RATIO REPORT

OPERATOR The Atlantic Refining Company POOL Eumont

ADDRESS Box 1031, Denver City, Texas MONTH OF July, 19 58

SCHEDULED TEST ..... COMPLETION TEST ..... SPECIAL TEST X (Check One)

Lease	Well No.	Date of Test	Producing Method	Choke Size	Test Hours	Daily Allowable Bbls.	Production During Test			GOR Cu. Ft. Per Bbl.
							Water Bbls.	Oil Bbls.	Gas MCF	
Seale Federal	4	7-24	Flow	Variable	24	0	0	0	430	Infinite

This test is for reclassification from an oil well to a gas well.

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 degrees F. Specific gravity base will be 0.60.

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 certify that the information given is true and complete to the best of my knowledge.)

Date August 22, 1958

The Atlantic Refining Company
Company

By W. A. Carr

District Superintendent
Title

NEW MEXICO OIL CONSERVATION COMMISSION
One-point Back Pressure Test for Gas Wells
(Deliverability)

Form C-122-C
4-1-54

Pool Eumont Formation Yates-Seven Rivers County Lea
Initial X Annual ____ Special ____ Date of test 7-11-58
Company ____ Lease ____ Well No. ____
Unit ____ Sec. 34 Twp. 20-S Rge. 36-E Purchaser Phillips Petroleum Company
Casing 5½" Wt. 14# IFT. I.D. 5.012" Set at 3883' Perf. 3814' To 3850'
Tubing 2" Wt. 4.7# IFT. I.D. 2" Set at 3793' Perf. ____ To ____
Gas Pay: From 3814' To 3850' L 3814' x G 0.685 = GL 2613 Bar.Press. 13.2
Producing Thru: Casing ____ Tubing X Type Well Single
Single- Bradenhead-G.G. or G.O. Dual

FLOW DATA

Started Date	Started time	Taken Date	Taken time	Duration Hours	Type Taps	Line Size	Orfice Size	Static Press.	Differ-ential	Flow Temp.
7-17-58	10 AM / PM	7-18-58	10 AM / PM	24 hrs.	Flange	3"	1.25"	21 psig	21" H_2O	105°F

FLOW CALCULATIONS

Static Pressure p_f	Differ-ential h_w	Meter Extension $\sqrt{p_f h_w}$	24-Hour Coeff-icient	Gravity Factor F_g	Temp. Factor F_t	Compress-ability F_{pv}	Rate of Flow MCF/Da. @ 15.025 psia Q
34.2 psia	21"	26.80	9.781	0.9359	0.9592	1.005	236.49

SHUT-IN DATA / FLOW DATA

Shut-in Date	Shut-in Time	Press. Taken Date	Press. Taken Time	Duration Hours	Wellhead Pressure (P_c) psia Tubing	Wellhead Pressure (P_c) psia Casing	W.H. Working Pressure (P_w) and (P_t) psia Tubing	W.H. Working Pressure (P_w) and (P_t) psia Casing
7-11-58	10 AM / PM	7-14-58	10 AM / PM	72 hrs.	523.2 psia	-0-	235.2 psia	

FRICTION CALCULATIONS(if necessary)

$P_w = (P_t^2 + (P_c)^2(2e^{-s}))^{\frac{1}{2}}$

$P_w = (54.382 + 5.518 \times 0.165)^{\frac{1}{2}} = 235$ psia

DELIVERABILITY CALCULATIONS

P_w 235 P_c 523.2 $P_w^2 \div P_c$ 0.4491

$1 - \frac{P_w}{P_c}$ 0.5509 $1 + \frac{P_w}{P_c}$ 1.4491 $\left|1 - \frac{P_w}{P_c}\right| \left|1 + \frac{P_w}{P_c}\right| = M$ 0.7985

.36 + M 0.4508 Log -0.34602 x (n) 0.771 = -0.266781 +

Log Q = 2.373830

Log D = 2.107049

Antilog = 127.95 = D

SUMMARY

P_c = 523.2 psia
Q = 236.49 MCF/Da.
P_w = 235.0 psia
P_d = 418.56 psia
D = 127.95 MCF/Da.

COMPANY The Atlantic Refining Company
ADDRESS Box 1038, Denver City, Texas
AGENT and TITLE N. A. Carr, Dist. Superintendent
WITNESSED ____
COMPANY ____

REMARKS

This form is to be used for reporting deliverability tests in the designated Dry Gas Pools of Lea County as ordered by New Mexico Oil Conservation Commission Directive dated March 15, 1954, which directive was provided for by Orders R-365-A through R-376-A. For details regarding this test please refer to the above mentioned Directive.

NOMENCLATURE

Q = Actual flow at end of flow period at W. H. working pressure (P_w). MCF/da. @ 15.025 psia and 60° F.

P_c = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater. psia

P_d = Deliverability pressure; 80 % of 72 hour individual wellhead shut-in pressure (P_c). psia

P_w = Static wellhead working pressure as determined at the end of flow period. (Casing if flowing thru tubing, tubing if flowing thru casing.) psia

P_t = Flowing wellhead pressure (tubing if flowing through tubing, casing if flowing through casing). psia

D = Deliverability at Deliverability pressure (P_d) MCF/da. @ 15.025 psia and 60° F.

p_f = Static meter pressure, psia.

h_w = Differential meter pressure, inches water.

F_g = Gravity correction factor.

F_t = Flowing temperature correction factor.

F_{pv} = Supercompressability factor.

n = Slope of back pressure curve.

DELIVERABILITY FORMULA

$$D = Q \left[\frac{.36}{\left(1 - \frac{P_w}{P_c}\right)\left(1 + \frac{P_w}{P_c}\right)} \right]^n$$

Note: If P_w cannot be taken because of manner of completion or condition of well, then P_w must be calculated by adding the pressure drop due to friction within the flow string to P_t.

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool [illegible] Formation Yates-Seven Rivers County Lea

Initial X Annual _____ Special _____ Date of Test 7-16-58

Company [illegible] Lease [illegible] Well No. 4

Unit _____ Sec. 24 Twp. 20-S Rge. 36-E Purchaser Phillips Petroleum Co.

Casing 5½" Wt. 14# & 15½# D. 5.012 Set at 3075' Perf. 3024 To 3050

Tubing 2" Wt 4.7# & 6½# D. 2.000 Set at 3793' Perf. _____ To _____

Gas Pay: From 3024' To 3050' L 3024' xG 0.665 -GL 2619 Bar.Press. 12.2

Producing Thru: Casing _____ Tubing X Type Well Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: _____ Packer TAC @ 3027.7 Reservoir Temp. _____

OBSERVED DATA

Tested Through ~~(Prover)~~ ~~(Choke)~~ (Meter) Type Taps Flange

No.	Flow Data ~~(Prover)~~ (Line) Size	~~(Choke)~~ (Orifice) Size	Press. psig	Diff. h_w	Temp. °F.	Tubing Data Press. psig	Tubing Data Temp. °F.	Casing Data Press. psig	Casing Data Temp. °F.	Duration of Flow Hr.
SI	2.067					530		0		72
1.	2.067	1.75	25	14	109	55		0		24
2.	2.067	1.75	23	50	110	110		0		24
3.	2.067	1.75	22	40	109	260		0		24
4.	2.067	1.75	21	21	109	530		0		24
5.										

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_w p_f}$	Pressure psia	Flow Temp. Factor F_t	Gravity Factor F_g	Compress. Factor F_{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
1.	20.25	22.91	37.2	0.9932	0.9399	1.005	414.87
2.	9.781	46.99	35.2	0.9951	0.9399	1.005	448.40
3.	9.781	37.59	34.2	0.9952	0.9399	1.005	351.10
4.	9.781	26.80	34.2	0.9952	0.9399	1.005	250.40
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio Dry Gas cf/bbl. Specific Gravity Separator Gas _____

Gravity of Liquid Hydrocarbons _____ deg. Specific Gravity Flowing Fluid _____

F_c 9.936 $(1-e^{-s})$ 0.165 P_c 520.2 P_c^2 270.74

No.	P_w P_t (psia)	P_t^2	F_cQ	$(F_cQ)^2$	$(F_cQ)^2$ $(1-e^{-s})$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.	495.0	245.02	4.129	17.051	2.820	245.02	25.72	519.92	0.9431
2.	485.0	235.22	3.888	15.116	2.502	235.22	35.52	485.07	0.9327
3.	472.2	223.00	3.370	11.356	1.879	223.00	47.74	472.20	0.9079
4.	455.0	207.02	2.489	6.195	1.025	207.02	63.72	455.00	0.8749
5.									

Absolute Potential: 430 MCFPD; n 1

COMPANY [illegible]

ADDRESS P.O. Box 1056

AGENT and TITLE [illegible]

WITNESSED _____

COMPANY _____

REMARKS

INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

NOMENCLATURE

Q = Actual rate of flow at end of flow period at W. H. working pressure (P_w). MCF/da. @ 15.025 psia and 60° F.

P_c = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater. psia

P_w = Static wellhead working pressure as determined at the end of flow period. (Casing if flowing thru tubing, tubing if flowing thru casing.) psia

P_t = Flowing wellhead pressure (tubing if flowing through tubing, casing if flowing through casing.) psia

P_f = Meter pressure, psia.

h_w = Differential meter pressure, inches water.

F_g = Gravity correction factor.

F_t = Flowing temperature correction factor.

F_{pv} = Supercompressability factor.

n = Slope of back pressure curve.

Note: If P_w cannot be taken because of manner of completion or condition of well, then P_w must be calculated by adding the pressure drop due to friction within the flow string to P_t.

EUGENE DIETZGEN CO.
MADE IN U.S.A.
NO. 340-L22 DIETZGEN GRAPH PAPER
LOGARITHMIC—2 CYCLES X 2 CYCLES
10000
1000
100
100
1000
Q-MCFD-15.025psia.
Pc²-Pw²(thsnds)

OIL CONSERVATION COMMISSION

BOX 2045

HOBBS, NEW MEXICO

DATE December 8, 1958

OIL CONSERVATION COMMISSION
BOX 871
SANTA FE, NEW MEXICO

Re: Proposed NSP_____
Proposed NSL 174
Proposed NFO _____
Proposed DC _____

Gentlemen:

I have examined the application dated_____

for the Atlantic Refining Co. Seale Fed. #4 34-20-36
Operator Lease and Well No. S-T-R

and my recommendations are as follows:

O.K.---E.F.E.

O.K.---J.W.R.

Yours very truly,

OIL CONSERVATION COMMISSION

Ezra Stughault