

Case 24- Application of UNITED
STATES OF AMERICA & MEXICO
CO. INC. vs. ...

Case No.

2264

Application, Transcript,
and Exhibits, Etc.

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

*Copy
Filed
2264*

August 6, 1962

United Smelting Refining and Mining Co.
P. O. Box 1877
Midland, Texas

Attention: Mr. W. C. Dougherty

Gentlemen:

Reference is made to your letter of July 26, 1962, wherein you request permission to remove one of the meters in the Lea-Bone Spring - Lea Pennsylvanian commingling installation authorized by the Commission in Order No. R-1974, dated May 17, 1961.

It is our understanding that you have had considerable difficulty obtaining accurate results in metering the Pennsylvanian distillate production due to the high gravity of the product.

Inasmuch as both zones produce relatively small volumes of liquids, the Commission has no objection to the removal of the meter from the Pennsylvanian leg of the installation, provided however, that the Bone Spring production shall continue to be constantly measured by means of a meter equipped with a non-reset counter.

Very truly yours,

A. L. PORTER, Jr.,
Secretary-Director

ALP/DSM/eg

cc: Oil Conservation Commission - Hobbs

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BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 2264
Order No. R-1974

APPLICATION OF UNITED STATES SMELTING
REFINING AND MINING COMPANY FOR AN OIL-
GAS DUAL COMPLETION (CONVENTIONAL), AND
FOR PERMISSION TO COMBINGLE THE PRODUCC-
TION FROM TWO SEPARATE POOLS, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on
May 4, 1961, at Santa Fe, New Mexico, before Daniel S. Mutter,
Examiner duly appointed by the Oil Conservation Commission of New
Mexico, hereinafter referred to as the "Commission," in accordance
with Rule 1214 of the Commission Rules and Regulations.

Now, on this 17th day of May, 1961, the Commission, a
quorum being present, having considered the application, the
evidence adduced, and the recommendations of the Examiner,
Daniel S. Mutter, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by
law, the Commission has jurisdiction of this cause and the subject
matter thereof.
- (2) That the applicant, United States Smelting Refining and
Mining Company, seeks authorization to complete its Federal 11-20-
34 Well No. 1, located 1980 feet from the North line and 2130 feet
from the West line of Section 11, Township 20 South, Range 34 East,
NMPN, Lea County, New Mexico, as a dual completion (conventional),
in such a manner as to permit the production of oil from the Bone
Springs formation adjacent to the Lea-Bone Springs Pool and the
production of gas from an undesignated Pennsylvanian pool through
parallel strings of 2-inch tubing.
- (3) That the mechanics of the proposed dual completion are
feasible and in accord with good conservation practices.
- (4) That the applicant further seeks permission to com-
ingle the Bone Springs oil production and the Pennsylvanian
distillate production from the subject well.

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CASE No. 2264
Order No. R-1974

(5) That the liquid production from each of the subject pools should be separately metered prior to commingling, and that the meters to be used for this purpose should be equipped with non-reset totalizers.

(6) That approval of the subject application will neither cause waste nor impair correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, United States Smelting Refining and Mining Company, is hereby authorized to complete its Federal 11-20-34 Well No. 1, located 1980 feet from the North line and 2130 feet from the West line of Section 11, Township 20 South, Range 34 East, HMPM, Lea County, New Mexico, as a dual completion (conventional), in such a manner as to permit the production of oil from the Bone Springs formation adjacent to the Lea-Bone Springs Pool and the production of gas from an undesignated Pennsylvanian pool through parallel strings of 2-inch tubing.

PROVIDED HOWEVER, That the applicant shall complete, operate, and produce said well in accordance with the provisions of Section V, Rule 112-A.

PROVIDED FURTHER, That the applicant shall take packer-leakage tests upon completion and annually thereafter during the Gas-Oil Ratio Test Period for the Lea-Bone Springs Pool, or as required by the Secretary-Director of the Commission.

(2) That the applicant is hereby authorized to commingle the Bone Springs oil production and the Pennsylvanian distillate production from the subject well, after separately metering the liquid production from each pool by means of meters equipped with non-reset totalizers.

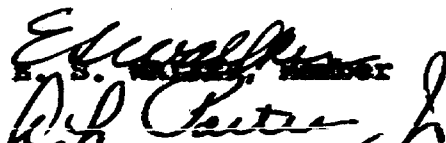
PROVIDED HOWEVER, That it may be that this installation, at a later date, will have to be altered to conform to such standards as the Commission may prescribe.

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


EDWIN L. MECHEM, Chairman


A. L. PORTER, Member & Secretary

esx/

Case - 264

UNITED STATES SMELTING REFINING AND MINING COMPANY

OIL OPERATIONS
P. O. BOX 1877
MIDLAND, TEXAS

April 6, 1961

New Mexico Oil Conservation Commission
107 Mabry Hall, Capitol Building
Santa Fe, New Mexico

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

Re: Request to Dual Complete
United States Smelting
Refining and Mining Company's
Federal 11-20-34 No. 1 Well
Lea County, New Mexico

Gentlemen:

United States Smelting Refining and Mining Company herewith makes application to the Oil Conservation Commission to dual complete their Federal 11-20-34 No. 1 Well, located 1980 feet from the North Line and 2130 feet from the West Line of Section 11, T-20-S, R-34-E, Lea County, New Mexico.

Our plans are to make a Gas-Oil Dual between the Pennsylvanian Gas Zone and the Bone Springs Oil Zone. We will perforate the Pennsylvanian section from 13,034-54' and 13,074-98'. The Bone Springs pay will be opened from 10,158-10,166'. A Baker Model "D" Production Packer will be set at 10,650' to separate both zones. Operator then proposes to run a Baker Model "K" Double Grip Dual Packer to be set at approximately 10,000'. The well will be produced through dual tubing strings. The Pennsylvanian zone will be produced through 2" EUE N-80 tubing set at approximately 12,800'. The Bone Springs production will be produced through 2" Hydril Type "A" tubing set in top of Baker Model "K" Packer at approximately 10,000'.

Operator also proposes to commingle the fluid produced from both zones, at the surface. A metering separator device, approved by the Commission, will be placed on the stream producing liquids from the Pennsylvanian.

*Approved
M. H. ...
4-27-61*

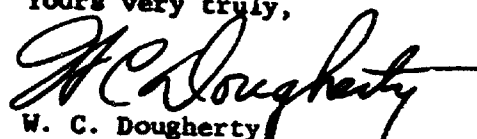
New Mexico Oil
Conservation Commission
Santa Fe, New Mexico

Request to Dual Complete
Federal 11-20-34 No. 1
Lea County, New Mexico

April 6, 1961
Page No. 2

Therefore, United States Smelting Refining and Mining Company respectfully requests that this application be placed on the docket for an early hearing.

Yours very truly,


W. C. Dougherty
Manager of Production

OLD:cra

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 5/11/61

CASE 2264

Hearing Date 9am 5/4/61

JSN @ SF

My recommendations for an order in the above numbered cases are as follows:

Enter an order approving, US SR+M's
deal completion of its Federal 11-20-34
#1 to produce ^{oil} from the Bone Springs adj.
to the La Bone Springs and ^{gas} from an
undesignated Permian gas pool thru
parallel strings of 2 7/8" log.

Procker leakage tests shall be taken
during annual ^{La Bone Springs} GOR
test period.

- ✓ Also approve applicant's request to
commingle liquids from the two zones
provided however that the liquids from
each zone must be metered separately
prior to commingling w/ non-reset meters
✓ include provision installation may have to
be altered.

JSN
Examiner

DOCKET: EXAMINER HEARING - THURSDAY, MAY 4, 1961

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or
Elvis A. Utz, as alternate examiner:

CONTINUED CASE

CASE 2234: Application of Kay Kimbell for an order force-pooling a
320-acre gas proration unit in the Basin-Dakota Pool.
Applicant, in the above-styled cause, seeks an order force-
pooling all mineral interests in the Basin-Dakota Pool in
the E/2 of Section 22, Township 29 North, Range 11 West,
San Juan County, New Mexico, including those of Roy L. Cook
as lessee and various other parties as lessors in the E/2
NW/4 NE/4 of said Section 22.

NEW CASES

CASE 2261: Application of Continental Oil Company for two non-standard
gas proration units. Applicant, in the above-styled cause,
seeks the establishment of a 480-acre non-standard gas
proration unit in the Eumont Gas Pool consisting of the
S/2 and the NE/4 of Section 24, Township 20 South, Range
37 East, Lea County, New Mexico. Said unit is to be dedi-
cated to the SEMU Eumont Well No. 67, located 1980 feet
from the South and West lines of said Section 24.

Applicant further seeks the establishment of a 480-acre
non-standard gas proration unit in the Eumont Gas Pool
consisting of the NW/4 of Section 24, and the SE/4, the SW/4
NE/4, the S/2 SW/4 and the NW/4 SW/4 of Section 13, all in
Township 20 South, Range 37 East, Lea County, New Mexico.
Said unit is to be dedicated to the SEMU Eumont Well No. 69,
located 1980 feet from the North and West lines of said
Section 24.

CASE 2262: Application of V. S. Welch for an unorthodox oil well
location. Applicant, in the above-styled cause, seeks
approval of an unorthodox oil well location in the Culwin-
Yates Pool for a well to be drilled at a point 330 feet
from the South line and 2590 feet from the West line of
Section 29, Township 18 South, Range 31 East, Eddy County,
New Mexico.

CASE 2263: Application of Collier Drilling Company for an exception to Rule 309 (a). Applicant, in the above-styled cause, seeks an exception to Rule 309 (a) to permit the transportation of oil from the Western Yates Lease, comprising the SE/4 NW/4 of Section 20, Township 18 South, Range 28 East, Eddy County, New Mexico, to a separate tank battery located on its Amerada Lease, comprising the NE/4 NW/4 of said Section 20.

CASE 2264: Application of United States Smelting Refining and Mining Company for an oil-gas dual completion and for permission to commingle the production from two separate pools. Applicant, in the above-styled cause, seeks authorization to dually complete its Federal 11-20-34 Well No. 1, located 1980 feet from the North line and 2130 feet from the West line of Section 11, Township 20 South, Range 34 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Bone Springs formation adjacent to the Lea-Bone Springs Pool and the production of gas from an undesignated Pennsylvanian pool through parallel strings of 2-inch tubing.

Applicant further proposes to commingle the production from both of said pools in said well after metering only the Pennsylvanian pool production.

CASE 2265: Application of Nash, Windfohr and Brown for an unorthodox well location. Applicant, in the above-styled cause, seeks approval of an unorthodox location in an undesignated Abo pool for its Jackson Federal Well No. 23-B, located 1420 feet from the South line and 1980 feet from the East line of Section 24, Township 17 South, Range 30 East, Eddy County, New Mexico.

CASE 2266: Application of Nearburg & Ingram for permission to commingle the production from two separate leases, and from two separate pools. Applicant, in the above-styled cause, seeks permission to commingle, after separate measurement, the Southwest Gladiola-Pennsylvanian Pool production from all wells on its Keating lease, comprising the NE/4 of Section 34 with Southwest Gladiola-Pennsylvanian and Southwest Gladiola-Devonian production from all wells on its Midhurst Lease, comprising the NW/4 of Section 35, all in Township 12 South, Range 37 East, Lea County, New Mexico.

- CASE 2267: Application of Byard Bennett for permission to institute a waterflood project in the Caprock-Queen Pool, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks permission to institute a waterflood project in the Caprock-Queen Pool in an area comprising the E/2 SE/4 of Section 20 and the SW/4 of Section 21, all in Township 14 South, Range 31 East, Chaves County, New Mexico, by the injection of water into the Stella Zimmerman Well No. 2, located in the SE/4 SE/4 of said Section 20.
- CASE 2268: Application of Humble Oil & Refining Company for an exception to Rule 303 (a). Applicant, in the above-styled cause, seeks an exception to Rule 303 (a) to permit commingling, without separate measurement, of the production from the Paddock, Penrose-Skelly and Drinkard Pools on the J. L. Greenwood Lease, comprising the S/2 of Section 9, Township 22 South, Range 37 East, Lea County, New Mexico.
- CASE 2269: Application of Great Western Drilling Company for an oil-salt water dual completion. Applicant, in the above-styled cause, seeks authorization to dually complete its Federal MM Well No. 2, located in the SE/4 NW/4 of Section 8, Township 9 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Bough C formation adjacent to the East Allison-Pennsylvanian Pool and the injection of salt water into the San Andres formation.
- CASE 2270: Application of Pan American Petroleum Corporation for an oil-oil dual completion. Applicant, in the above-styled cause, seeks authorization to dually complete its Greenwood Unit Well No. 3, located in Unit H, Section 27, Township 18 South, Range 31 East, Eddy County, New Mexico, in such a manner as to permit the production of oil from an undesignated Bone Springs pool and the production of oil from an undesignated Wolfcamp pool through parallel strings of 2-inch tubing.
- CASE 2271: Application of Pan American Petroleum Corporation for two non-standard oil proration units and for an unorthodox oil well location. Applicant, in the above styled cause, seeks the establishment of a 70.58-acre non-standard oil proration unit in the Cha Cha-Gallup Oil Pool consisting of Lots 8 and 9 and the S/2 of that portion of the San Juan River channel lying in the S/2 NE/4, all in Section 18,

CASE 2271 (Cont.)

Township 29 North, Range 14 West, San Juan County, New Mexico, said unit to be dedicated to the Navajo Tribal "G" Well No. 7, at an unorthodox location 2545 feet from the North line and 1670 feet from the East line of said Section 18, and of a 46.75-acre non-standard oil proration unit in said pool consisting of Lot 6 and the S/2 of that portion of the San Juan River channel lying in the SE/4, all in Section 16, Township 29 North, Range 14 West, San Juan County, New Mexico, said unit to be dedicated to the Navajo Tribal "E" Well No. 10, located 660 feet from the South line and 1980 feet from the East line of said Section 16.

CASE 2272:

Application of Pan American Petroleum Corporation for two non-standard oil proration units and for two unorthodox oil well locations. Applicant, in the above-styled cause, seeks the establishment of an 89.62-acre non-standard oil proration unit in the Cha Cha-Gallup Oil Pool consisting of Lots 2, 3 and 4 of Section 8, Township 28 North, Range 13 West, San Juan County, New Mexico, said unit to be dedicated to the C. J. Holder Well No. 11, at an unorthodox location 493 feet from the North line and 660 feet from the West line of said Section 8, and of an 89.22-acre non-standard oil proration unit in said pool consisting of Lot 1 of Section 8 and Lots 3 and 4 of Section 9, all in Township 28 North, Range 13 West, San Juan County, New Mexico, said unit to be dedicated to the C. J. Holder Well No. 12, at an unorthodox location 493 feet from the North line and 660 feet from the West line of said Section 9.

CASE 2273:

Application of El Paso Natural Gas Company for an exception to Rule 309 (a). Applicant, in the above-styled cause, seeks an exception to Rule 309 (a) to permit the transportation of oil produced on Federal Lease LC-064198-A, comprising the SE/4 of Section 18, prior to measurement, to tank batteries located on Federal Lease No. 025566, comprising the E/2 of Section 19, all in Township 19 South, Range 32 East, Lea County, New Mexico.

Docket No. 13-61

-5-

CASE 2274:

Application of El Paso Natural Gas Company for an oil-gas dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its Lusk Deep Unit Well No. 2, located in Unit O, Section 18, Township 19 South, Range 32 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Strawn formation adjacent to the Lusk-Strawn Pool and the production of gas from the Morrow formation in an undesignated pool through parallel strings of 2 3/8-inch tubing.

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form No. 1
 Revised 8/1/57

SEE INSTRUCTIONS FOR COMPLETING THIS FORM ON THE REVERSE SIDE

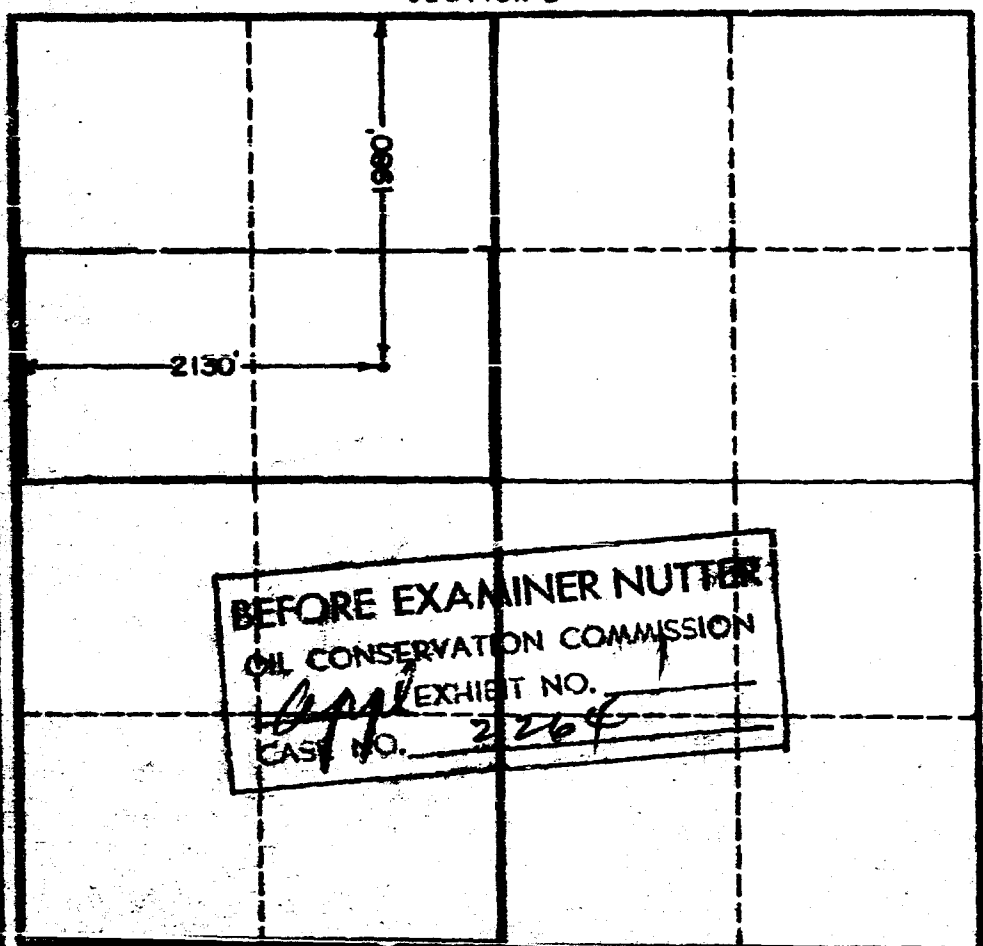
SECTION A

Operator U.S. Smelting, Mining & Refining			Lease Federal		Well No. 1-11
Unit Letter F	Section 11	Township 20 South	Range 34 East	County LEA	
Actual Footage Location of Well: 1980 feet from the North line and 2130 feet from the West line					
Ground Level Elev. 3644.3	Producing Formation Devonian	Pool Undesignated		Dedicated Acreage: 80 Acres	

1. Is the Operator the only owner in the dedicated acreage outlined on the plat below? YES NO ("Other" means the person who has the right to drill into and to produce from any pool and to appropriate the production either for himself or for himself and another. (65-3-29 (e) NMSA 1955 Comp.)
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 one is "no," list all the owners and their respective interests below:

Owner	Lead Description
	West-half Section 11, T-20-S, R-34-E,
	Lea County, New Mexico

SECTION B



BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
 EXHIBIT NO. _____
 CASE NO. **2264**

CERTIFICATION

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

[Signature]
 Name
Manager of Production
 Position
United States Smelting Refining and Mining Company
 Company
October 27, 1960
 Date

I hereby 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.

PROF. ENGINEER & LAND SURVEYOR
STATE OF NEW MEXICO

Date Surveyed **10-27-60**
 Registered Professional Engineer and/or Land Surveyor, 3090
 License No. _____
 N.M. - P.E. & L.S. NO. 870

0 300 600 900 1200 1500 1800 2100 2400 2700 3000 3300 3600 3900 4200 0

Diagrammatic Sketch of Well Completion Installation
 United States Smelting Refining and Mining Company - Federal 11-20-34 No. 1
 1980' FNL and 2130' FWL, Section 11, T-20-S, R-34-E
 Lea County, New Mexico

Elevation: 3666' DF

*Concrete
 back string head,
 X near tree head.*

Top of cement on second stage 6750'
 (Temperature Survey)

Upper Zone: Bone Spring
 Top: 8202'

Production this Zone: Oil
 through 2-3/8" EUE Tubing

*pot 205 B/24 4964 ck
 75# by press
 BOR 340 to 1
 current 1047 to 1
 new. crull
 BHP 3970 DST*

Baker Model "K" Double Grip
 Packer @ 10,000'

Perforations 10,158' to 10166'
 8' perms. makes after
 167 B/D

Halliburton DV Tool @ 10562'
 Cemented through tool with 650
 sacks. top @ 6750

Lower Zone: Pennsylvanian
 Top: 12,060'

Production this Zone: Gas
 through 2-3/8" EUE Tubing
 Bottom of Tubing @ 12,880'

*DST data
 13018-13109
 tool of 15 hr
 gas & water surf 20 min
 Plug back depth: 13,800'
 7.336 million gas/day
 1" casing @ 14,250'
 Cemented with 1150
 sacks Trinity Inferno
 1" ch 225# by press
 380' dist in pipe
 est. 75 to 100 B dist/day*

Baker Model "D" Production
 Packer @ 12,850'

Proposed perforations:
 13,034-54' and 13,074-94'

*cut to DV Cell or
 @ 10562*

*14000' sub for water
 in Dev.*

Total Depth: 14,619'

6750 30 min SI press

BEFORE EXAMINER NUTTER
 OIL CONSERVATION COMMISSION
Appl EXHIBIT NO. 2
 CASE NO. 2764

UNITED STATES SMELTING REFINING AND MINING COMPANY'S
Federal 11-20-34 No. 1 Well

Reservoir Characteristics on Zones to be Commingled:

1. Bone Springs:

Potential: Flowed 205 BNO in 24 hrs. 40/64" chk. TP 75#,
GOR 1042:1
Gravity 42° @ 60° F

Sweet Crude

Perfs. 10,158-166'

SITP 12 hrs. 1150#

SITP 24 hrs. 1550#

Top Bone Springs 8202'

Price \$2.89 for 34° sour crude - West Texas Gulf Posted Price.

2. Pennsylvanian:

DST 13,018-13109'. Tool open 1-1/2 hrs. Gas & water
blanket in 20".

Flowed 7.336 MCFPD, TP 225#, Choke 1".

Rec. 380' - 47.5° distillate plus 270' water (27,000 ppm)

IFP 1955#, FFP 1845#, 75" SIP 6750 psi.

Estimated fluid - 78 BOPD. (26 PM)

To 100 "

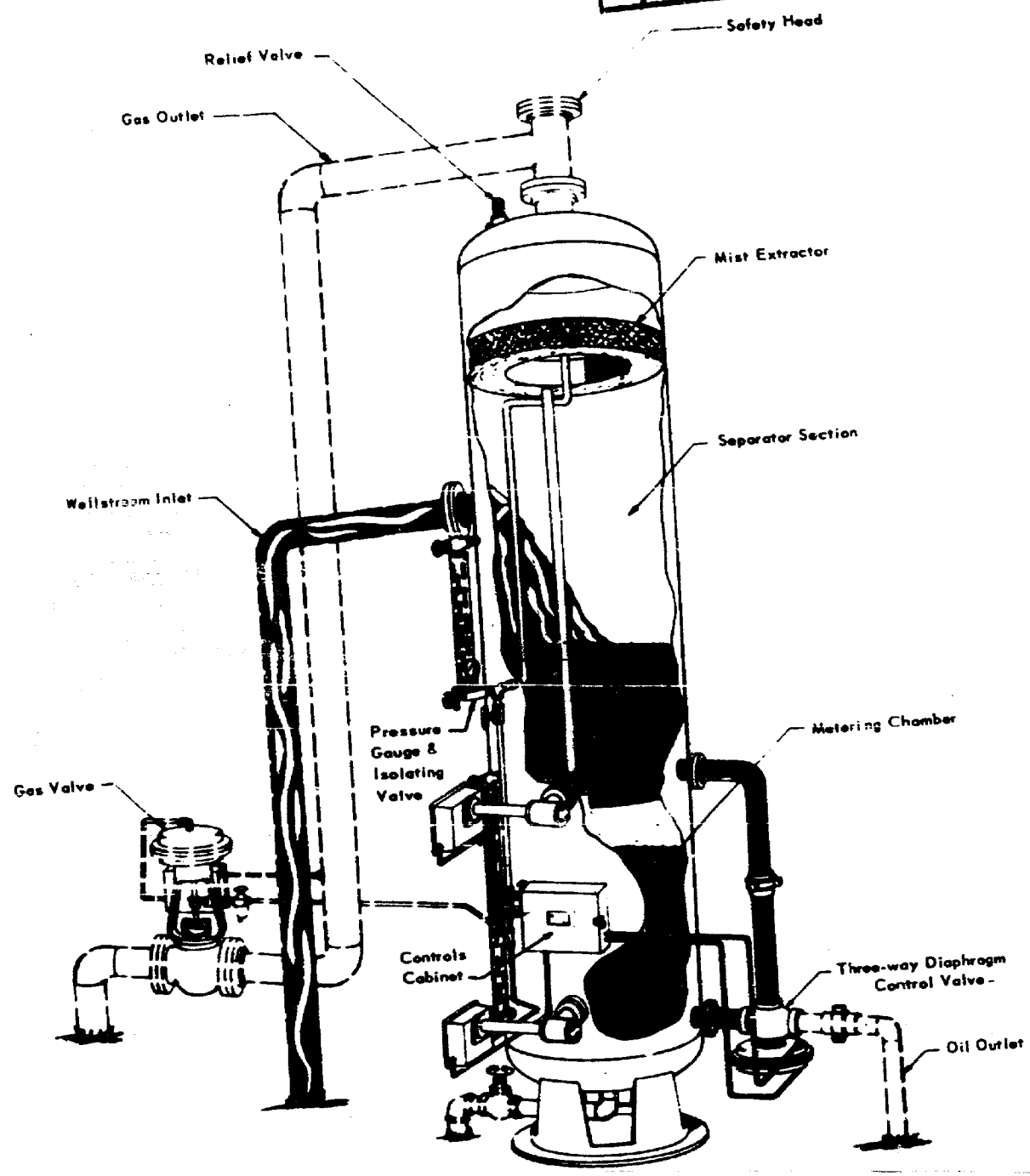
BEFORE EXAMINED NUTTER	
OIL COMPANY OF TEXAS	
APPL.	FILE NO. 3
C/S	2764

PRODUCT SECTION 15
Metering Equipment
Effective January 19, 1959

VERTICAL METERING SEPARATOR
(2 Phase)

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 6
CASE NO. 2264

6



Printed in U.S.A.

BLACK, SIVALLS & BRYSON, OKLAHOMA CITY, OKLAHOMA, EDMONTON, ALBERTA

UNITED STATES SMELTING REFINING AND MINING COMPANY'S
Federal 11-20-34 No. 1 Well

Estimated Savings by Commingling the
Bone Springs and Pennsylvanian

Additional SEPARATE Storage Facilities - Pennsylvanian:

2-300 Bbl. w/cone bottom welded tanks	\$2,982.54
1-30" x 10' L. P. Separator	980.00
Labor and materials	600.00
Total	<u>\$4,562.54</u>

COMMINGLING Bone Springs and Pennsylvanian:

Pennsylvanian:	
BS&B Metering Separator, 2 VMS 301-10.2	\$1,115.28
Labor and materials	75.00
Total	<u>\$1,190.28</u>

Saving by Commingling - Estimated \$3,372.26

BEFORE EXAMINER NUTTER	
OIL CONSERVATION COMMISSION	
<i>Lynd</i>	EXHIBIT NO. <u>7</u>
CASE NO.	<u>2264</u>

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

EXAMINER HEARING

IN THE MATTER OF:

CASE 2264

TRANSCRIPT OF HEARING

MAY 4, 1961

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
MAY 4, 1961

EXAMINER HEARING

DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CH 3-5571

ALBUQUERQUE, NEW MEXICO

IN THE MATTER OF: :
: :
: :

CASE 2264 Application of United States Smelting Refining :
and Mining Company for an oil-gas dual complet- :
ion and for permission to commingle the produc- :
tion from two separate pools. Applicant, in the :
above-styled cause, seeks authorization to :
dually complete its Federal 11-20-34 Well No.1, :
located 1980 feet from the North line and 2130 :
feet from the West line of Section 11, Township :
20 South, Range 34 East, Lea County, New Mex- :
ico, in such a manner as to permit the produc- :
tion of oil from the Bone Springs formation ad- :
jacent to the Lea-Bone Springs Pool and the :
production of gas from an undesignated Pennsyl- :
vanian pool through parallel strings of 2-inch :
tubing. :
: :

BEFORE:

Daniel S. Nutter, Examiner.

T R A N S C R I P T O F P R O C E E D I N G S

MR. NUTTER: We will call next Case 2264.

MR. MORRIS: Case 2264. Application of United States
Smelting Refining and Mining Company for an oil-gas dual completion
and for permission to commingle the production from two separate
pools.

MR. WHITE: Charles White of Gilbert, White & Gilbert,



appearing on behalf of the applicant. We have one witness to be sworn at this time.

(Witness sworn)

(Whereupon, Applicant's Exhibits Nos. 1 through 7, were marked for identification)

WILLIAM C. DAUGHERTY,

called as a witness, having been first sworn on oath, testified as follows:

DIRECT EXAMINATION

BY MR. WHITE:

Q Mr. Daugherty, would you state your full name, for the record, please?

A William C. Daugherty.

Q By whom are you employed and in what capacity?

A I am employed by United States Smelting Refining and Mining Company. I am manager of production.

Q Have you previously testified before the New Mexico Oil Conservation Commission or one of its Examiners as a petroleum engineer?

A No, sir, I never have.

Q Will you briefly state your educational background and your professional qualifications?

A I was graduated from the University of Tulsa in 1942 with a B.S. degree in petroleum engineering. I have worked fifteen and a half years for two oil companies in the capacity of engineer

DE. ARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO



DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CP 3-6691

ALBUQUERQUE, NEW MEXICO

and production supervisor. I can break that down a little bit more, if it's necessary. I worked fourteen years for Mobil Oil Company, five years in the capacity of engineer and district engineer, and then nine years in various production supervisor's jobs, and I have been a year and a half in my present employment.

Q Are you familiar with the subject application?

A Yes, sir.

MR. WHITE: Are the witness' qualifications acceptable?

MR. NUTTER: Yes. Please proceed.

Q (By Mr. White) Will you briefly state what the applicant proposes in the subject application?

A We propose, or would request to commingle two producing zones in our Federal No. 1 Well in Lea County, New Mexico. We would like to commingle the Bone Springs crude oil production with the Pennsylvanian gas production.

Q Will you refer to your ownership plat, marked Exhibit 1, and describe the location of the subject well and the acreage dedicated to it?

A The subject well in question is the Federal No. 1. It is located 2130 feet from the West line, 1980 feet from the North line of Section 11, Township 20 South, Range 34 East. Our acreage covers the west half of that Section, and it is approximately 320 acres.

Q What acreage is dedicated to the well?

A The acreage dedicated to the well, it's the south half



of the northwest quarter, which will be 80 acres.

Q Will you refer to Exhibit No. 2 and explain your proposed dual completion?

A On Exhibit No. 2, we drilled our well to 14,619 feet, and had hoped to make a Devonian well, but on drill stem test, though, we recovered 14,000 feet of sulphur water, so we plugged back to 13,300. First of all, we set casing, 7-inch casing, at 14,360, and that casing was cemented with 1150 sacks of cement, and was sufficient cement to come back to the D.V. Collar at 10,562. When we opened the Collar, we did get some trace of cement back to the surface, so I feel that the cement is very close to the D.V. Collar. Then, we cemented the second stage with 650, and the top of that cement came back to 6750, and that was by temperature survey. Since we didn't have any Devonian zone, why, we perforated our Bone Springs zone from 10,158 to 10,166. There's 8 feet of perforations there. When we completed the well, we set it up in such a manner that should the Commission grant us this request, we will be in a position to go down and perforate the Pennsylvanian zone from approximately 13,034 down to 13,094. Those are the extreme limits. We have not perforated yet. Like, I say, depending on the outcome of the hearing.

The well is now completed with a Baker Model "D" production packer at 12,850, and a Baker Model "K" double grip packer at 10,000 feet, and is completed with two strings of 2 3/8-inch tubing parallel strings. We have a Cameron dual Christmas Tree head

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on top of the well.

Q How much money have you expended on this well at the present?

A We have approximately seven hundred thousand dollars in the well to date.

Q Is the Bone Springs presently producing?

A Yes, sir, Bone Springs is presently producing through the perforations shown.

Q Is it able to make its present daily allowable?

A And is making its present daily allowable of 167 barrels a day.

Q Will you refer to Exhibit 3, and explain the reservoir characteristics of both zones?

A The potential tests on the Bone Springs, it flowed 205 barrels of new oil in twenty-four hours on a 40/64 choke, with tubing pressure 75 pounds. The initial gas-oil ratio was 340 to 1. However, we have a current ratio now of 5,042, which, I feel, is a more reliable gas-oil ratio, because we have checked it two or three times. It is a sweet crude and is producing through perforations 10,158 to 10,166. Bottom hole pressure on the zone taken from drill stem test in thirty-minute shut-in was 3097.

The only information I have on the Pennsylvanian zone is from a drill stem test we took from 13,013 to 13,109. The tool was opened one-half hour, and we had gas and water blanked to the surface in twenty minutes. It flowed 7.336 million cubic feet of

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gas per day at that rate, 7.3 million. That was on a 1-inch choke, and tubing pressure, 224. We did recover 380 feet of distillate in the drill pipe, so we feel sure that it will probably produce somewhere in the range of 75 to 100 barrels of distillate, probably, a day. We took a seventy-five minute shut-in pressure, and it was 6750.

Q Considering the pressure differential between the two reservoirs and the equipment and the method of installation that you propose, is it your opinion that there will be no communication between the zones?

A Yes, sir.

Q How do you intend to test your packers for any leakage?

A We will take what I consider probably a conventional packer leakage test. We would shut both zones in and let them come to equilibrium and then put a dual pen recorder on the surface, and then flow one zone and let it stabilize and observe the pressure on the other zone, and then shut both in again, and let that one zone build back up and flow the other zone and see if there is any communication flowing one zone with the other one shut-in. We'll have a dual pen recorder chart to offer as evidence at the time.

Q Will you refer to Exhibit 4, and briefly explain that, please?

A On our sonic log, on the small scale, I have all the tops in the well zones, of course, briefly, the two we're

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interested in will be the Bone Springs. It just shows our perforations from 10,158 to 10,166, and then our proposed perforations down here just below 13,000. There's almost some 3,000 feet difference between the two zones. However, all the tops in the well are marked on the log.

Q Now, referring to the commingling aspect of the case, what fluids do you propose to commingle and from what zones?

A We propose to commingle production, crude oil production, from the Bone Springs zone, and distillate from the Pennsylvanian zone.

Q Will you explain your proposed installation by referring to Exhibit 5?

A On Exhibit 5 you will notice some dotted lines and also some solid lines. The solid lines are what we now have presently installed at the well location, and our Bone Springs zone now is producing through the low pressure separator shown, and then into the two 500-barrel tanks. What we would do, if we were granted this request, we would come out of our Pennsylvanian zone with our high pressure gas, and go through a high pressure separator. The liquids from the high pressure separator then would go through a metering separator, and then into a header with the Bone Springs zone, and that would give us flexibility to where we could either mix our Bone Springs production and distillate, and put them in one tank, or we could, by manipulating our header, could run them in separate tanks. It would give us a check on the meter any time

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that there was any doubt about the meter or check the meter out periodically by means of the header. Of course, we could put each zone in separate tanks, and would have positive check against the meter. The gas from the high pressure zone, we hope to have an outlet for it, a gas sale outlet. We have two people that have given us firm offers. Warren Petroleum Company and Phillips both are interested in buying the gas, and then, too, we plan to use part of it to gas lift the Bone Springs, but rather than pump from that depth, why, we would run gas lift valves on our string so we're in a position to gas lift when the time comes.

Q In conjunction with Exhibit 5, will you explain Exhibit 6, please?

A Exhibit 6 is a type of separator that we propose to install on the Pennsylvanian zone. It's manufactured by Black, Sivall & Bryson, and it's known as a vertical metering separator. I think it's been widely used in the industry for several years.

Q Have you found it satisfactory?

A Yes, I have.

Q In your opinion, will there be adequate tankage facilities?

A Yes, sir. I believe we have adequate tankage.

Q Do you anticipate the production in the Bone Springs to remain approximately the same, subject, of course, to formation depletion?

A Yes. It's making top allowable now, and it, of course,



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won't be any greater, and probably will fall off, as time goes on.

Q What economic savings will be accomplished by commingling these fluids?

A On Exhibit 7 there, I have estimated what it would cost us to put in separate storage facilities for the Pennsylvania zone to handle that distillate, and have estimated it to be in excess of forty-five hundred dollars. However, if we could commingle and use this metering separator, we could probably put that installation in for, say, twelve hundred dollars, and there would be a saving of thirty-three hundred seventy-two dollars, estimated. Naturally, we feel that we should try to save every dollar we could since the well will probably never pay out, and one of our strong reasons for wanting to commingle is to just save this additional expense and money since we have so much invested in it already.

Q Are the royalty interests common throughout?

A Yes, sir, they are.

Q How about the working interests?

A The working interests are common throughout.

Q Will the selling price of the commingled crudes equal or exceed the separate selling price of the crudes?

A The selling price will equal the present price we have. There will be no change in price. We are being paid on a fixed firm price now, and even though the gravity of our crude will go up, why, it will not benefit any in price.

MR. WHITE: At this time we offer the Exhibits.



MR. NUTTER: Your applicant's Exhibits 1 through 7 will be entered in evidence.

(Whereupon, Applicant's Exhibits Nos. 1 through 7 were received in evidence.)

MR. NUTTER: That completes our examination on direct.

MR. NUTTER: Does anyone have any questions of Mr. Daugherty?

MR. MORRIS: Yes, sir, I have a couple.

MR. NUTTER: Mr. Morris.

CROSS-EXAMINATION

BY MR. MORRIS:

Q You don't propose any metering of the Bone Springs production, is that correct?

A Yes, sir, that's correct.

Q How much expense would be involved in placing a meter on the Bone Springs?

A About six hundred twenty dollars. To meter the Bone Springs we would need what they call a metering chamber, that's five hundred forty dollars, and then the labor and materials to install it. So, approximately six hundred twenty dollars.

Q In the event the Commission should grant this application, but require a meter on the Bone Springs line, would you be willing to install such a meter?

A Yes, I'd be willing to install it. I might reiterate again, though, with our two tanks, we can probably have almost a

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constant check on the Bone Springs, except when we need to top one out and put both zones together. I feel like even though we had just a metering separator on the Pennsylvanian, the production on the Bone Springs is going to be real constant, and, of course, we can have a check on it just every few days, if necessary. But, to answer your question, we would put it in if it were required.

Q As you may be aware, Mr. Daugherty, the Commission, at present, has appointed a committee to study all phases of commingling, an industry committee. Would you be willing to conform your installation to the minimum requirements that might be adopted following the report of this committee?

A Let me see if I understand you correctly. In other words, when the committee comes out with the regulations, would we change to adapt to it?

Q I'm assuming, for the moment, that the Commission has granted the application in some form or another with certain restrictions.

A Yes.

Q Additional restrictions may be placed on your installation as a result of the committee's recommendation. Would you be willing to conform at that time or forego the authorization?

A Yes, sir. We'd be happy to cooperate in any manner, because I understand your problem too.

Q Now, Mr. Daugherty, how much shrinkage do you anticipate in handling the Pennsylvanian distillate as it goes through this



set-up, as you have got it here --

A Oh, --

Q -- percentagewise?

A I can't answer your question. I'm afraid.

Q There will be some, though, will there not?

A Yes. I will say this, that we will be operating our high pressure separator 1500, and then it will go through the low pressure meter separator. The gravity of the distillate on the Pennsylvanian is not high, it's not as high as a lot of distillate. It's about a 47.2 distillate. There will be some weathering of it, I'm sure, percentagewise, though. I really can't answer your question.

Q So any loss in the distillate, presumably, you are going under this set-up; as you propose it, you are going to make up from what would amount to overproduction of your Bone Springs, would it not?

A No --

Q In other words, you are going to sell your allowable. Any shrinkage that comes along, you are going to have to make up from somewhere, and it's going to have to be made up from the Bone Springs?

A Of course, I am assuming the Pennsylvanian zone will be a gas, and that we will be permitted to have an allowable of whatever distillate it produced, and not have a fixed figure.

Q That's correct. But you are going to have an allowable

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on your Bone Springs production?

A Yes, sir.

Q Here's what I'm getting at, how are you going to hold back your Bone Springs allowable to the figure of the allowable without a meter on your Bone Springs line?

A Well, I see your question. Of course, that's where we could run it into a tank. I mean that would be where we would produce straight from the separator into a tank by itself. We'll know from its flowing characteristics, it should be pretty constant. Now, on the shrinkage on the Pennsylvanian zone, of course, when we install this metering separator, why, it will be necessary to run the fluids through the metering separator against the tank, and then calibrate the meter, you know, on the metering separator after the weathering takes place over here in the tank. If you end up with 50 barrels over here, then you have to keep checking and calibrating your metering separator until it checks out against your tank extrapolation. I feel that the Bone Springs should be real steady and should produce at a constant rate, and that, of course, the oil we get from the Bone Springs, well, then, the distillate from the Pennsylvanian zone will just be added to it.

MR. MORRIS: Thank you. I have no further questions.

BY MR. NUTTER:

Q Mr. Daugherty, the gravity on the distillate from the Pennsylvanian is 47.2, you say?

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A Yes, sir.

Q How about the Bone Springs, what's the gravity there?

A 42.

Q So this Bone Springs oil is getting top price, I presume, is that correct?

A No. We're only being paid on the basis of sour crude price. It's an intermediate price, 34 degree gravity. It's West Texas sour crude posting is the price we're being paid.

Q Well, is it top price for sour crude?

A Yes, sir, I believe that's right.

Q With no penalty for --

A We're being paid at 34 degrees.

Q There's no penalty for high gravity, however, is there, on 42 gravity?

A No, sir.

Q How about the distillate from the Pennsylvanian? Will you get a penalized price on that due to the 47.2 gravity there?

A No, sir, I don't believe so.

Q Who will the purchaser of the distillate be?

A Tidewater.

Q Into Texas-New Mexico Pipeline?

A Into Texas-New Mexico Pipeline. See, the price is based at 40 degrees, and then, of course, they penalized us down to 34 degrees, and that's the price they're paying us, and it is just for 34 degree crude.



Q For the distillate as well as the crude?

A Yes, that is what it will be when the time comes. The gravity is run 41, 42, but we are getting a 34 degree price on it.

Q How about the distillate? Are they going to pay you a 34 degree price on the distillate also?

A Yes, sir.

Q On that drill stem test that you took in the Pennsylvanian, did that cover both of the proposed perforated intervals?

A Let me check that just to see. That was from 23,018 to 109. Yes, it was inclusive of what we planned to perforate.

Q So you won't have any zones open that haven't been tested yet?

A No, sir.

Q What did the calculated GOR on that Pennsylvanian come out to be?

A Just about 100,000 to 1.

Q 100,000?

A Yes.

Q And you estimated that the drill stem flow was 7 million a day or approximately?

A Yes, 7 plus.

Q And the Pennsylvanian will go through a two-stage separation?

A Yes, sir.

Q You stated that in producing this thing, that you would

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be able to flow into separate tanks. Actually, you wouldn't be commingling if you flowed into separate tanks, would you?

A No. The only time we would be commingling is when we want to top a tank out and sell it, why, then we would have to put both zones, you know, in the other tank, but there will be quite a large number of days when each zone could be flowed into separate tankage. Not many, because you are always continuing the process of topping out a tank.

Q You propose the installation of two 500-barrel tanks?

A Yes, and I have those on the lease. That's my present storage.

Q Do you propose to drill any more Bone Springs wells?

A No, sir. This 3 feet that we have is the only flowing drill stem test we had in the Bone Springs. There are some sections on the log up the hole which we tested, and didn't get anything but just some oil cut mud, and we'll use them for salvage. But on the basis of this 3 feet, though, we just couldn't afford to drill another well.

Q And this is located, more or less, at the extreme side of your lease, is it not?

A On the east side of our lease.

Q Isn't that right along side that Lee unit?

A Yes, sir, up against the line.

MR. NUTTER: Any further questions of Mr. Daugherty?

He may be excused.

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(Witness excused)

MR. NUTTER: Do you have anything further, Mr. White?

MR. WHITE: That's all. Thank you.

MR. NUTTER: Does anyone have anything they wish to offer in Case 2264? We will take the case under advisement.

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STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Court Reporter, in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in machine shorthand and reduced to typewritten transcript under my personal supervision, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this, the 7th day of May, 1961, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Ada Dearnley
NOTARY PUBLIC

My Commission expires:

June 19, 1963

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 222-2 heard by me on 5-4, 1961.

[Signature], Examiner
New Mexico Oil Conservation Commission

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