completion of its

[illegible] completion of its [illegible]

Case No.

2033

Application, Transcript,
small Exhibits, Etc.

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. 2033
Order No. R-1743

APPLICATION OF CABEEN EXPLORATION
CORPORATION FOR A "SLIM-HOLE" COM-
PLETION IN AN UNDESIGNATED PERMO-
PENNSYLVANIAN POOL, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on July 27, 1960, at Santa Fe, New Mexico, before Daniel S. Nutter, 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 4th day of August, 1960, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, 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 is the owner and operator of its State 1-K Well, located 1980 feet from the South line and 1980 feet from the West line of Section 11, Township 10 South, Range 32 East, NMPM, Lea County, New Mexico.

(3) That the applicant has completed the above-described well as a 'slim-hole" completion in an undesignated Permo-Pennsylvanian formation with 2-7/8 inch OD tubing set at approximately 8951 feet, which type of completion method requires an exception to Rule 107(e) of the Commission Rules and Regulations.

(4) That inasmuch as the subject well was completed as a "slim-hole" completion without the authorization of the Commission, and since what the Commission considers necessary centralizers were not utilized in such completion, this well should not be eligible for dual completion.

(5) That according to the applicant's testimony there are no known pressure or corrosion problems to be anticipated in the subject area which cannot be adequately controlled in a "slim-hole" type completion.

IT IS THEREFORE ORDERED:

(1) That the applicant, Cabeen Exploration Corporation, be and the same is hereby authorized to complete its State 1-K Well, located 1980 feet from the South line and 1980 feet from the West line of Section 11, Township 10 South, Range 32 East, NMPM, Lea County, New Mexico, as a "slim-hole" completion in an undesignated Permo-Pennsylvanian formation using 2-7/8 inch OD tubing as casing.

PROVIDED HOWEVER, That the applicant shall take whatever measures are necessary to properly control any pressure or corrosion problems which may be encountered in completing or producing the subject well.

(2) That the subject well is not eligible for dual completion.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JOHN BURROUGHS, Chairman

MURRAY E. MORGAN, Member

A. L. PORTER, Jr., Member & Secretary

esr/

GOVERNOR
JOHN BURROUGHS
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
MURRAY E. MORGAN
MEMBER

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY DIRECTOR

P. O. BOX 871
SANTA FE

August 4, 1960

Mr. Jack Campbell
Box 766
Roswell, New Mexico

Re: Case No. 2033
Order No. R-1743
Applicant:

~~Cabeen Exploration Corporation~~

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

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

ir/

Carbon copy of order also sent to:

Hobbs OCC X
Artesia OCC ____
Aztec OCC ____

Other ____

No. 21-60

DOCKET: EXAMINER HEARING JULY 27, 1960

Oil Conservation Commission - 9 a.m., Mabry Hall, State Capitol, Santa Fe, N.M.

The following cases will be heard before Daniel S. Nutter, Examiner, or Oliver E. Payne, Attorney, as alternate Examiner:

CASE NOS. 2023 through 2033 will not be heard before 1 p.m. on July 27, 1960.

CASE NOS. 2034 through 2040 will not be heard before 9 a.m. on July 28, 1960.

CASE 2017: Application of Continental Oil Company for an order authorizing an automatic custody transfer system to handle the Maljamar Pool production from its Miller "BX" lease comprising in pertinent part the E/2 of Section 14, Township 17 South, Range 32 East, Lea County, New Mexico.

CASE 2018: Application of Continental Oil Company for an order authorizing the triple completion of its Jicarilla Apache Well No. 27-2, located in the NW/4 NW/4 of Section 27, Township 25 North, Range 4 West, Rio Arriba County, New Mexico, in such a manner as to permit the production of oil from the Gallup formation, the production of oil from the Greenhorn formation and the production of oil from the Dakota formation through parallel strings of 4½ inch, 2 7/8 inch, and 4½ inch casing cemented in a common well bore. Applicant proposes to install tubing to the Gallup and the Dakota formations.

CASE 2019: Application of Continental Oil Company for an order authorizing the triple completion of its Northeast Haynes Apache Well No. 9-1, located in the NW/4 SW/4 of Section 9, Township 24 North, Range 5 West, Rio Arriba County, New Mexico, in such a manner as to permit the production of gas from the Mesaverde formation, the production of gas from the gallup formation and the production of gas from the Greenhorn formation through parallel strings of 2 7/8 inch, 4½-inch, and 4½-inch casing respectively, cemented in a common well bore. Applicant also proposes to install tubing in the latter two zones.

CASE 2020: Application of Amerada Petroleum Corporation for an order authorizing the triple completion of its Wimberly Well No. 13, located in Unit M, Section 24, Township 25 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of gas from the Langlie Mattix Pool, the disposal of salt water into the Grayburg and San Andres formations in the interval from 3500 feet to 4200 feet, and the production of oil from the Justis-Blinebry Pool by means of two parallel strings of 3½-inch casing cemented in a common well bore. Applicant would dispose of the salt water through one string of casing, produce the Blinebry oil through 1½-inch tubing set in the second string of casing, and produce Langlie Mattix gas through the annulus of the 1½-inch tubing and the second casing string.

CASE 2021: Application of Shell Oil Company for authority to recomplete its State BUA Well No. 2 (formerly its Bluitt Unit Well No. 2) at an unorthodox oil well location in the Pennsylvanian formation within one mile of the Bluitt Pennsylvanian Pool. Said well is located 1980 feet from the North line and 660 feet from the West line of Section 16, Township 8 South, Range 37 East, Roosevelt County, New Mexico.

CASE 2022: Application of Sinclair Oil & Gas Company for an order authorizing the dual completion of its Turner "B" SP Well No. 67, located in Unit L, Section 20, Township 17 South, Range 31 East, Eddy County, New Mexico, in such a manner as to permit the production of oil from the Grayburg-Jackson Pool and the production of oil from an undesignated Abo pool through parallel strings of 2-inch tubing.

The following cases will not be heard before 1 p.m. on July 27, 1960:

CASE 2023: Application of Honolulu Oil Corporation for an order authorizing it to institute a pressure maintenance project in the Horseshoe-Gallup Oil Pool by the injection of water into the Gallup formation through its Navajo Well No. 4, located in the SE/4 SE/4 of Section 5, Township 31 North, Range 17 West, San Juan County, New Mexico; applicant further seeks the adoption of special rules governing the operation of said project.

CASE 2024: Application of Humble Oil & Refining Company for an order authorizing it to institute a pressure maintenance project in the Horseshoe-Gallup Oil Pool by the injection of water into the Gallup formation through 29 wells located in Sections 3, 4, 9, 10, and 11, Township 31 North, Range 17 West, San Juan County, New Mexico; Applicant further seeks the adoption of special rules governing the operation of said project.

CASE 2025: Application of Socony Mobil Oil Company for permission to convert to water injection its Navajo "A" Well No. 9, located in NE/4 NW/4 of Section 14, Township 31 North, Range 17 West, Rio Arriba County, New Mexico, in conjunction with a proposed adjacent pressure maintenance project in the Horseshoe-Gallup Oil Pool.

CASE 2026: Application of The British American Oil Producing Company for an order authorizing the "slim-hole" completion of its Fullerton Well No. 7, located 1850 feet from the South and West lines of Section 11, Township 27 North, Range 11 West, Dakota Producing Interval, San Juan County, New Mexico, utilizing 2 7/8-inch tubing as casing.

CASE 2027: Application of Hondo Oil & Gas Company for an amendment of Order No. R-1643 to provide an alternative to the fail-safe features required in the automatic custody transfer system authorized therein for the Hondo-Western-Yates State 647 lease, Empire-Abo Pool, Eddy County, New Mexico.

CASE 2028: Application of Pan American Petroleum Corporation for an order authorizing it to commingle the production from the Empire-Abo Pool from all wells on eight separate leases in Sections 27 and 34, Township 17 South, Range 28 East, Eddy County, New Mexico. Applicant also seeks authorization of an automatic custody transfer system to handle said commingled production.

CASE 2029: Application of Pan American Petroleum Corporation for an amendment of Order R-1399 to permit the commingling of Empire-Abo Pool production from Federal Lease No. LC-064050-A, E/2 SE/4 of Section 34 and NW/4 SW/4 of Section 35, Township 17 South, Range 27 East, with the Empire-Abo Pool production from those leases for which commingling was approved by paragraph one of said order and to permit the commingling of Empire-Abo Pool production from Federal Lease No. NM-025602, NW/4 and N/2 SW/4 of Section 15, Township 18 South, Range 27 East with the Empire-Abo Pool production from those leases for which commingling was approved by paragraph two of said order. Applicant also seeks an amendment of Order No. R-1399-A to permit production from the above-described leases in Eddy County, to be handled by the automatic custody transfer systems authorized in said order.

CASE 2030: Application of Pan American Petroleum Corporation for permission to commingle the Empire-Abo Pool production from eleven separate State leases in Townships 17 and 18 South, Range 28 East, Eddy County, New Mexico. Applicant further seeks permission to install automatic custody transfer facilities to handle said commingled production.

CASE 2031: Application of Union Oil Company of California for approval of its South Caprock Queen Unit Agreement, which unit is to embrace 9526 acres in Townships 14 and 15 South, Ranges 30 and 31 East, Caprock Queen Pool, Chaves County, New Mexico.

CASE 2032: Application of Union Oil Company of California for an order authorizing it to institute a waterflood project in the Caprock-Queen Pool on its proposed South Caprock Queen Unit by the injection of water into the Queen formation through ten wells located in Township 15 South, Range 31 East, Chaves County, New Mexico, and for authority to drill a water injection well at an unorthodox location, being 330 feet West of the East line and 1320 feet South of the North line of Section 18, Township 15 South, Range 31 East.

CASE 2033: Application of Cabeen Exploration Corporation for permission to complete its State 1-K Well located 1980 feet from the South and West lines of Section 11, Township 10 South, Range 32 East, in an undesignated Permo-Pennsylvanian pool in Lea County, New Mexico as a "slim-hole" completion, using 2-7/8 inch casing.

The following cases will not be heard before 9 a.m. on July 28, 1960

CASE 2034: Application of Gulf Oil Corporation for an order authorizing the dual completion of its J. N. Carson Well No. 6, located 330 feet from the South line and 965 feet from the East line of Section 28, Township 21 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Penrose-Skelly Pool and the production of gas from the Blinebry Gas Pool through parallel strings of 2 3/8-inch tubing.

CASE 2035: Application of Gulf Oil Corporation for an order authorizing the dual completion of its W. T. McCormack Well No. 12, located 554 feet from the North line and 1874 feet from the East line of Section 32, Township 21 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Drinkard Pool and the production of oil from the Wantz-Abo Pool through parallel strings of 2 3/8-inch tubing.

CASE 2036: Application of Charles Loveless, Jr., for the establishment of a 280-acre non-standard gas unit in the Atoka-Pennsylvanian Gas Pool consisting of the NE/4, N/2 NW/4 and SW/4 NW/4 of Section 21, Township 18 South, Range 26 East, Eddy County, New Mexico. Applicant proposes that said unit be dedicated to the Brunner No. 1 Dayton Townsite Well to be located on an unorthodox location at a point 1650 feet from the North line and 2310 feet from the East line of said Section 21.

CASE 2037: Application of Sun Oil Company for the creation of a new oil pool for Wolfcamp production to be designated as the Jenkins-Wolfcamp pool and to consist of Sections 2, 3, 4, 8, 9, 10 and 11 of Township 9 South, Range 34 East, Lea County, and Sections 34 and 35, Township 8 South, Range 34 East, Roosevelt County, New Mexico. Applicant further seeks the promulgation of special rules and regulations for said pool including a provision for 80-acre drilling and proration units.

CASE 2038: Application of Benson-Montin-Greer Drilling Corporation for an order authorizing the dual completion of the Jones Well No. 1, located in Unit P, Section 17, Township 28 North, Range 13 West, San Juan County, New Mexico, in such a manner as to permit the production of oil from an undesignated Gallup Pool and the production of gas from the West Kutz-Dakota Pool through parallel strings of 1½-inch OD tubing.

Docket No. 21-60

CASE 2039: Application of Southwest Production Company for approval of an unorthodox oil well location in the Gallegos-Gallup Oil Pool for its Rummel Federal Well No. 1, located 790 feet from the North line and 1190 feet from the West line of Section 36, Township 27 North, Range 12 West, San Juan County, New Mexico.

CASE 2040: Application of Neville G. Penrose, Inc., for an order authorizing the dual completion of its Grizzel Well No. 1, located in Unit G, Section 5, Township 22 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of gas from the Tubb Gas Pool and the production of oil from the Drinkard Pool through the casing-tubing annulus and 2 3/8-inch tubing respectively.

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date July 28, 1960

CASE NO. 2033 HEARING DATE DSN, Santa Fe, 9 a.m. 7/27

My recommendations for an order in the above numbered case(s) are as follows:

Approve slim-hole completion of Cabeen Exploration Corporation's State Well No. 1-K, located in the NE/4 SW/4 of Section 11, Township 10, Range 32 East, Lea County, New Mexico. In approving application alert the applicant that there is a possibility that the Commission at some future date decide the upper perforations of this well are in the Wolfcamp and the lower in the Pennsylvanian formation and that two separate pools could be designated by the Commission for this area in those formations.

Staff Member

LAW OFFICES OF

CAMPBELL & RUSSELL

J. P. WHITE BUILDING

ROSWELL, NEW MEXICO

JACK M. CAMPBELL
JOHN F. RUSSELL

TELEPHONES
MAIN 2-4641
MAIN 2-4642

1960 JUL 15 AM 8:27 OCC

July 15, 1960

Mr. A. L. Porter
Secretary-Director
Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Dear Mr. Porter:

Enclosed for filing please find application of Cabeen Exploration Corporation for a "slim-hole" completion. It is my understanding that this matter is being published for hearing before an examiner on July 27.

Very truly yours,

Jack M. Campbell

Jack M. Campbell
For CAMPBELL & RUSSELL

JMC:np
Enclosure

Received July 15, 1960

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF CABEEN EXPLORATION CORPORATION FOR PERMISSION TO COMPLETE ITS STATE 1-K WELL LOCATED 1980 FEET FROM THE SOUTH AND WEST LINES OF SECTION 11, TOWNSHIP 10 SOUTH, RANGE 32 EAST, IN AN UNDESIGNATED PERMO-PENNSYLVANIAN OIL POOL IN LEA COUNTY, NEW MEXICO, AS A "SLIM-HOLE" COMPLETION USING 2-7/8" CASING	)	Case No. 2033

APPLICATION

COMES NOW Applicant, Cabeen Exploration Corporation, by its attorneys, Campbell & Russell, and states:

1. It is the owner and operator of its State 1-K well situated in the NE¼SW¼ Section 11, Township 10 South, Range 32 East, Lea County, New Mexico.

2. It desires to complete said well and to produce it through 2-7/8" tubing from the Permo-Pennsylvanian Formation.

3. All zones above the producing zone have been adequately protected

4. The well can be completed through 2-7/8" tubing without causing waste and will result in the greatest ultimate recovery of oil from the well.

WHEREFORE, Applicant requests that this matter be set down for hearing before an Examiner for the Commission, that notice be published as required by law and that, after hearing, the Commission issue its order authorizing Applicant to complete and produce its State 1-K well through 2-7/8" tubing.

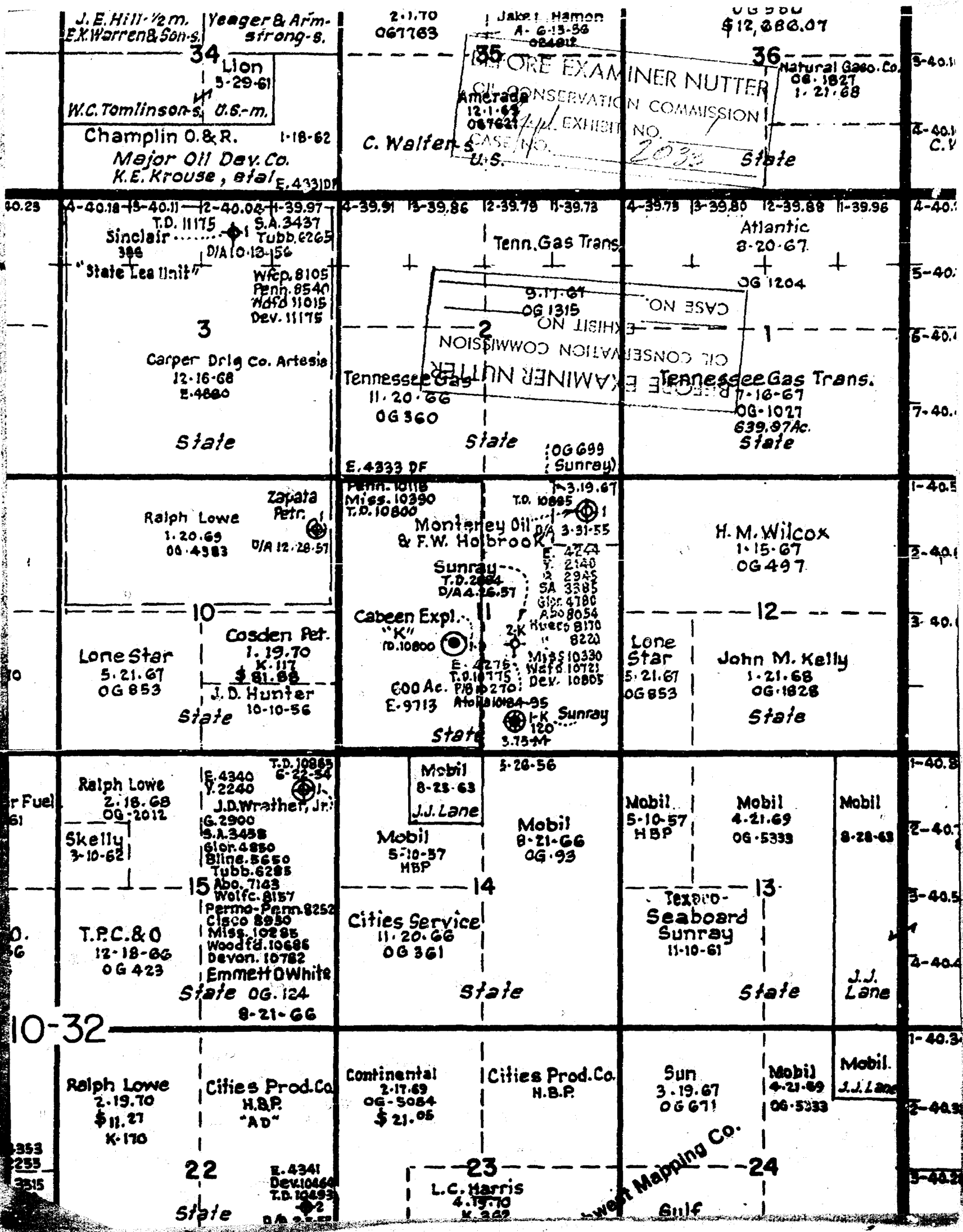
Respectfully submitted,
CABEEN EXPLORATION CORPORATION

By Jack M. Campbell

CAMPBELL & RUSSELL
P. O. Box 766
Roswell, New Mexico

Its Attorneys

DATED: July 11, 1960


J.E. Hill-½m.
E.K. Warren & Son-s.
Yeager & Armstrong-s.
34
Lion
5-29-61
W.C. Tomlinson-s.
U.S.-m.
Champlin O.&R. 1-18-62
Major Oil Dev. Co.
K.E. Krouse, etal
E.4331 DF
2-1-70
067763
Jake L. Hamon
A-6-13-56
084812
35
Amerada
12-1-62
067621
C. Walter-s
U.S.
$12,886.07
36
Natural Gas Co.
OG-1827
1-21-68
State
4-40.18
5-40.11
2-40.04
1-39.97
T.D. 11175
S.A. 3437
Sinclair
Tubb 6265
D/A 10-13-56
386
"State Lea Unit"
Wfcp. 8105
Penn. 8540
Wolfd 11015
Dev. 11175
3
Carper Drlg Co. Artesia
12-16-68
E-4880
State
4-39.91
3-39.86
2-39.79
1-39.73
Tenn. Gas Trans.
9-11-61
OG 1315
2
Tennessee Gas
11-20-66
OG 360
State
E.4333 DF
OG 699
(Sunray)
4-39.79
3-39.80
2-39.88
1-39.96
Atlantic
8-20-67
OG 1204
1
Tennessee Gas Trans.
7-16-67
OG-1027
639.97Ac.
State
Zapata Petr.
D/A 12-28-57
Ralph Lowe
1-20-69
OG-4983
Penn. 10116
Miss. 10390
T.D. 10800
T.D. 10885
3-19-67
Monterey Oil & F.W. Holbrook
D/A 3-31-55
Sunray
T.D. 2884
D/A 4-26-57
E. 4274
Y. 2140
B 2945
SA 3385
Glor. 4780
Abo 8054
Hueco 8170
" 8220
Miss 10330
Wolfc 10721
Dev. 10805
Cabeen Expl. "K"
TD 10800
E. 4276
T.D. 10775
600 Ac. P/B 270
E-9713
Atoka 10184-95
2-K
1-K
120
Sunray
3.75-M
H. M. Wilcox
1-15-67
OG 497
10
Lone Star
5-21-67
OG 853
Cosden Pet.
1-19-70
K-117
$ 81.88
J. D. Hunter
10-10-56
State
12
Lone Star
5-21-67
OG 853
John M. Kelly
1-21-68
OG-1828
State
Ralph Lowe
2-18-68
OG-2012
Skelly
3-10-62
T.D. 10885
E. 4340
Y. 2240
6-22-54
J.D. Wrather, Jr.
G. 2900
S.A. 3438
Glor. 4850
Bline. 5650
Tubb. 6285
Abo. 7143
Wolfc. 8157
Permo-Penn. 8252
Cisco 8950
Miss. 10285
Woodfd. 10686
Devon. 10782
Emmett O White
State OG. 124
8-21-66
Mobil
8-28-63
J.J. Lane
5-10-57
HBP
Mobil
8-21-66
OG-93
5-26-56
Mobil
5-10-57
HBP
Mobil
4-21-69
OG-5333
Mobil
8-28-63
15
14
13
T.P.C.&O
12-18-66
OG 423
Cities Service
11-20-66
OG 361
State
Texaco-Seaboard Sunray
11-10-61
State
J.J. Lane
10-32
Ralph Lowe
2-19-70
$ 11.27
K-170
Cities Prod. Co.
H.B.P.
"AD"
Continental
2-17-69
OG-5084
$ 21.05
Cities Prod. Co.
H.B.P.
Sun
3-19-67
OG 671
Mobil
4-21-69
OG-5333
Mobil.
J.J. Lane
22
E. 4341
Dev. 10464
T.D. 10493
State
23
L.C. Harris
4-19-70
K-262
24
Gulf
Southwest Mapping Co.
BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 1
CASE NO. 2033

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 3
CASE NO. 2033

State #1-K
M. Mescalero Area
NE SW, Sec. 11-10S-32E
Lea County, New Mexico

CARTER EXPLORATION CORPORATION

6-19-60

Trip in hole w/drill pipe. Circulate 3 hrs. Rig B. J. Services and spot 20 sx Reg. Neat Cement for plug from 10,800' back to 10,737'. Pull 17 Jts. Drill pipe. Spot 50 sx Reg. Neat Cement from 10,380' back to 10,142'. Finish trip out of hole laying down drill pipe.

6-16-60

Run 290 Jts. 2-7/8" OD EUE N-80 csg for 8943' set at 8951' w/float at 8920'. Centralizers set @ every 4 joints: 8951', 8891', 8711', 8591', 8471' and 8351'. Cement w/255 sx Trinity Inferno w/4% gel added. Pump double plug down w/1000 gals 15% Type J Acid and 28 bbls water. Max press 2700#. Pumped plug to 8920' at 5:30 P.M. 6-16-60. Release rig.

6-19-60

Rig up X-Pert Well Servicing Unit. Rig up Frontier Perforators to run Correlation Gamma Ray and Collar Log and perforate. Gamma Ray tool will not work. Rig down. Rig up PGAC and run Correlation Gamma Ray and Collar Log from 8860', back to 8200'. Perforate w/Jet Expendable Gun 4 shots/ft. from 8752-8771' and 8725-8734'. Total 112 holes.

6-20-60

Rig up Knox Services to break down formation w/acid in hole. 7000# will not break down. No holes in 2-7/8" csg. Run sand line. Find tbg bridged at 8725'. Close well in for acid in hole to decompose fused gun.

6-21-60

Swab back acid and water in hole to run measuring line. Rig B. J. Services and run wire line to determine depth. Find bottom at 8879'. Rig PGAC and reperforate 2-7/8" csg from 8725-8734' and 8752-8771' w/4 Jet shots/ft. w/Sidewinder Gun. Total 112 holes. Rig Knox Services and acidize csg perforations w/500 gals 20% mud acid. Push 6 bbls 15% Type J Acid ahead at 6200# at 4 gals/min., 20% acid on formation pressure at 6000#. Injection increased to 9 gals/min for 8 bbls. Broke to 5200#, rate increased to 27 gals/min for final 4 bbls acid. Shut in pressure 4800#. Rig and swab back. Swab hole dry. Recover some unspent acid, spent acid water, show of oil and gas.

6-22-60

Swabbing at rate of 300' fill/hr. Est. 1-3/4 bbls oil w/acid water. Rig Knox Services and reacidize csg perforations from 8725-8734' and 8752-8771' w/1000 gals 15% SLT Acid. Max press 5500#, min press 4500#. Close in press 3000#. 10 min close in 4400#. Close well in.

6-23-60

Swab back load and acid water w/increase in gas and oil. Maintain 500' fluid in hole. Recover 3 bbls fluid/hr w/increase in oil show.

6-24-60

Rig PGAC and perforate 2-7/8" OD EUE csg from 8354-8365' and 8655-8687' w/4 Jet shots/ft w/Sidewinder gun. Total 172 holes. Rig Cecil Horne Wire Line Service and run P.S.I. tbg plug to 8704'. Rig Knox Services and acidize 2-7/8" csg perforations from 8354-8365' and 8655-8687' w/1000 gals 20% mud acid. Unable to catch acid at 4 bbls per min. Hole on vacuum.

6-25-60

Rig to swab. Swab back load and acid water. Recover 3 bbls fluid per hr w/no noticeable increase in gas or oil. Hole appears to have channeled between csg perforations from 8655-8687' and 8725-8734'.

6-27-60

Rig Cecil Horne Wire Line Service and pull P.S.I. tbg plug at 8704'. Rig Halliburton to acidize csg perforations from 8354-8365' and 8655-8687' and 8725-8734' and 8752-8771' w/10,000 gals 15% Acid Gel. Max tbg press 7000#, 1500 gals in formation channel to surface. Close well in. Used total of 3500 gals acid. Rig and swab hole until recover drilling mud.

6-28-60

Rig Cecil Horne Wire Line Service and run tbg plug to 8338'. Pressure up w/B. J. Services to 3000#. Tbg pressure held. Rig Cecil Horne Wire Line Service and retrieve tbg plug. Rig McCullough Tool Co. and run 2-1/8" OD Aluminum Drillable Bridge Plug set at 8303'. Test w/3000# pressure. It held. Perforate 2-7/8" OD EUE csg from 8300-8302' w/4 Jet shots/ft. Rig B. J. Services and break circulation w/1200#. Circulate to surface. Cement 2-7/8" OD EUE csg w/100 sx Reg. Neet Cement. Max press 1200#. Close well in.

6-29-60

Rig Coleman Engineering Company and run Temperature Survey. Top cement at 7827'. Rig Reynolds Specialty Co. and drill cement and bridge plug 8300-8303'.

6-30-60

Rig Halliburton to acidize csg perfs from 8354-65', 8655-87', 8725-34' and 8752-71' w/10,000 gals 15% acid gel. Max tbg press 5900#, min tbg press 4600#, SIP 3600#, 10 min, SIP 2700#. Average pumping rate 4.5 barrels per minute. Close well in.

CARTER EXPLORATION CORPORATION

7-1-60

STATE #1-K

Hole on vacuum this A.M. Rig to swab. Swab back flush water w/show of oil and gas. Well starts to flow at 2:00 P.M. 7-1-60 w/440# tbg press.

7-2-60

Well flowing this A.M. w/450-575# tbg press on 24/64" choke. Recover 170.52 bbls fluid in 15 hrs. 154.08 bbls oil and 16.44 bbls water. Close well in.

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 4
CASE NO. 2033

Cabeen Exploration Corporation
State #1-K
Sec. 11-10S-32E
Lea County, New Mexico

SURFACE

13-3/8" 48# set at 294'
Cemented w/325 sx
Circulated

8951
8351
600

8-5/8" 24# set at 3505'
Cemented w/300 sx
est top 2700'

43.1° grav
non-corrosive

Top Cement 7827'

8354-65'
8655-87'
8725-33'
8752-70'

2-7/8" O.D. EUE. N-80 6.40#
Set at 8951'
Cemented w/255 sx

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 28, 1960.

IN THE MATTER OF:

APPLICATION OF CABEEN EXPLORATION CORPORATION for permission to complete its State 1-K Well located 1980 feet from the South and West lines of Section 11, Township 10 South, Range 32 East, in an undesignated Permo-Pennsylvanian pool in Lea County, New Mexico as a "slim-hole" completion, using 2-7/8 inch casing.

CASE NO. 2033

BEFORE:

Hon. Daniel S. Nutter, Examiner.

TRANSCRIPT OF PROCEEDINGS

MR. NUTTER: Hearing will come to order, please. Next case will be 2033.

MR. PAYNE: Case 2033. Application of Cabeen Exploration Corporation for a "slim-hole" completion.

MR. CAMPBELL: Jack M. Campbell, of Campbell and Russell, Roswell, New Mexico, appearing on behalf of the Applicant, Cabeen Exploration Corporation. I have two witnesses to be sworn.

(Witnesses sworn.)

*****

N E I L L H. P O T T S, a witness, called by the Applicant, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. CAMPBELL:

Q Will you state your name, please?

A Neill H. Potts.

Q Where do you live, Mr. Potts?

A I reside in Roswell, New Mexico.

Q What is your profession?

A My profession by degree is geologist; I have a Bachelors degree from the University of Wichita.

Q And what has been your practical experience in the oil business?

A I have three years with Amerada; five years with Shell as division geologist; and six years with Cabeen Exploration Corporation as manager of exploration, and vice-president.

Q Is that your capacity with Cabeen Exploration?

A I am vice-president of the Mid-continent area.

Q Are you acquainted with the application of Cabeen in this case?

A Yes, I am.

(Whereupon, Applicant's Exhibit 1 marked for identification.)

Q I refer you, Mr. Potts, to what has been identified as Applicant's Exhibit Number 1 in this case, and ask you to state what that is, please?

A This is a land plat, showing the acreage, description of the Cabeen Exploration holdings, which comprises the W/2 of Section 11, Township 10 South, Range 32 East, Lea County, New Mexico.

Q Does it show the location of the well that is involved in this application?

A The Cabeen Exploration Corporation State Number 1-K was drilled in the standard location, 1980 feet from the West line, and 1980 feet from the South line, in Section 11 of this Township.

Q And I notice there are other wells appearing on the map. Would you explain to the Examiner whether or not those wells were drilled into, or through the formation from which you hope to produce the Cabeen Exploration Corporation well?

A Yes, this prospect was a seismic substance prospect, which all of the other wells on this plat had been drilled through the formation. The Wrather hole to the southwest was drilled to the Devonian; the Sunray well to the southeast was drilled to the Devonian; and the Monterey Oil in the NE/4 of the section was drilled to the Devonian; the Potts "A" well, drilled in this section, the bottom in the Mississippian has a low subsurface point, 200 feet low to the other control there at the top of the Mississipian.

MR. NUTTER: The well directly to the East isn't a deep well?

A This is a well drilled to the Yates sand.

Q (By Mr. Campbell) Dry?

A Dry and abandoned by Sunray.

Q Was your well projected to the Devonian?

A This was principally a Devonian prospect, the Devonian was the primary objective, and all of our intended completion

program was based on the Devonian test, or Devonian producer.

Q Are you acquainted with the history of the drilling of this well?

A Yes.

(Whereupon, Applicant's Exhibit 2 marked for identification.)

Q Mr. Potts, I am referring you to what has been identified as Applicant's Exhibit Number 2, which appears to be a log, and ask you if you will please trace the drilling of this well, giving the Examiner the pertinent information as to the geological aspects particularly in the drilling of this well. First state what Exhibit 2 is.

A Exhibit 2 is a radioactive log which is our correlation log from surface to total depth, which with the significant geological horizon marking thereon, we spudded this well April 9 of this year, and terrain rocks were on the surface, we encountered a normal section of triassic, permian, red beds and salt, with the standard section Yates-Queen and San Andres. The significant point here is that the San Andres was encountered at 3366, with the intermediate picture set at 3505, which is through the porosity in the upper San Andres section. There were no significant shows of oil or gas in any of this section, it continues down through the Glorieta 4772, through the Tubb 6216, Abo at 7,078; to the top of the Waco or Wolfcamp formation at 6204. It was approximately at this point, we began to get significant shows of oil and gas.

The key zone in this area is that section, that section was cored in, core Number 1 and 2 shown on the log; this section, the drill stem tested about 3003 to 3. Oil in the Wrather test, Southwest of us, but on the subsequent drill stem test of this interval, recovered only 240 feet of mud with no show. We continued down.

Q Did you at that time consider this particular zone was probably not commercial?

A At that time we would have to assume from the core analysis which showed less than two millidarcies throughout the cored interval, plus the data in the drill stem test, this was certainly not a commercial horizon, other than from the data we had on it at that point.

Q Go ahead.

A We then continued to drill through the Atoka section, the rights for which were reserved by Sunray on the interval of 10,193 to 10,204; the section was cored and found to be too tight to produce. Then a normal section of the Mississippian and Wolf-Camp was encountered, and the top of the Devonian was, the top was encountered at 10,790 and it was at this point, 18 feet structurally lower than the Sunray hole Southwest of us, and 37 feet lower than the Wrather hole Southwest of us; both of these previous testings, drill stem tested salt water in the Devonian.

It was at this point when it was logged a dry hole in the Devonian, that our interest was shifted to any other possible zone that might recoup the loss in some way, the $155,000.00 in-

vestment we had made at this point. We were able to gain a little additional support from the interpretation of the radioactive log, and came up with four anomalous zones, three of which had already been tested over the drill stem Number 1 interval. However, knowing the problem you have with drilling fluids blocking the formation, and not wishing to allow this blocking action to take any further toll in this interval, it was my election at this point to run pipe in order to protect what could be a possibly commercial zone.

Q What, if any, other economic factors entered into your decision to run the pipe of 2-7/8 inches?

A The significant economic fact is that the 2-7/8 casing is about a dollar a foot, whereas the 5-1/2 inch casing is about $2.10 a foot. This effects quite an economic savings, and still allows prudent engineering practices to be employed.

Q In other words, you were looking here at a pretty long shot possibility of developing production from this particular zone which had not tested satisfactorily during the drilling, and which was surrounded by these wells that had failed to find commercial production in that zone, is that correct?

A That is correct.

Q How much difference, approximately, was there in the cost of running 2-7/8 inch casing, and the larger casing you would normally run?

A Be about $15,000.00.

Q I believe you stated that you had not in the drilling of this well, and did not then as a result of the log, encounter any potential producing formations at a shallower depth than the depth which this well is to be completed?

A No shows of oil or gas above the Wolfcamp formation, which was encountered at 8204; this was determined by sample analysis and gas detecting equipment we employed on this hole.

MR. CAMPBELL: Mr. Examiner, I have no more questions of this witness. I might say we have a witness who will testify as to the completion technique and the present situation on the well with regard to the casing and with regard to cementing.

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

(No response.)

QUESTIONS BY MR. NUTTER:

Q Mr. Potts, how much did you say that 5-1/2 inch casing would run?

A Two dollars and ten cents.

Q Assuming you run 9,000 feet of that, the price would be approximately $18,900.00; and if the tubing is a dollar a foot, the string of that would be $9,000.00. I see a difference of $9,900.00, or $10,000.00.

A I am, of course, not -- as an engineer -- up on all the economic factors, but you are using different centralizing equipment, different float equipment, which is an economic factor there. You are also, of course, faced with the tubing cost too, if you

tube on a 5-1/2 inch hole.

Q I see. And adding the cost of the tubing to this would probably lift it to five and a half inch casing, the job goes up?

A Yes.

MR. NUTTER: Are there any other questions of Mr. Potts?

(No response.)

MR. NUTTER: You may be excused.

(Witness excused.)

*****

F O R R E S T B L O U N T, a witness, called by the Applicant, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BLOUNT:

Q Will you state your name, please?

A Forrest Blount.

Q Where do you live?

A Hobbs, New Mexico.

Q What is your business?

A I am a petroleum consultant.

Q What type of consulting work do you do?

A Well completions and workovers.

Q How long have you been engaged as a consultant in well completions?

A Two years.

Q And have you been, during that period of time, operating

your business in the Hobbs area?

A In the Permian Basin, yes, sir.

Q Were you employed by Cabeen Exploration Corporation as a consultant in connection with the completion of the well involved in this application?

A That is correct.

(Whereupon, Applicant's Exhibits 3 and 4 marked for identification.)

Q Mr. Blount, I refer you to what has been identified as Applicant's Exhibit 3, and Applicant's Exhibit 4. Number 3, I believe, is a log that you maintain of the work that you performed on this well, and Number 4 is a diagramatic sketch of the present status of the well. Referring as much as you feel necessary to those two exhibits, will you describe to the Examiner the work you did on the well, or had done on the well, after you arrived, took over the supervision of the completion of this well.

A When I arrived at the location they had completed, run logs, and was out of the hole with drill pipe, So we went in the hole with drill pipe at 10,800, and circulated three hours; spotted 20-sack regular Neet Cement for plug at 10,800 feet back to the estimated calculation, the fill of 10,737 feet. Pulled 17 joints of drill pipe, spotted joints with 50 sacks of regular Neet Cement from 10,300 feet back to calibrated fillof 10,142 feet, and come out of the hole, laying down drill pipe. We ran 2-7/8.

Q You were, in that regard, plugging off the Devonian, is that correct?

A That is correct, we were protecting the Devonian and the Atoka, which Sunray is producing from an offsetting use. And we went in the hole with 290 joints of 2-7/8 inch OD EUE N-80 casing for 8,943 feet set at 8,951 feet, with float at 8,920 feet, with centralizers set at every four joints: 8,951 feet, 8,831 feet, 8,711 feet, 8,591 feet, 8,471 feet, and 8,351 feet; and cemented with 255 sacks Trinity Inferno cement with 4 percent Gel added, with a calculated fill of 1,000 feet, which should have brought our cement back to 7,951, and chased the plug down with a thousand gallons of 15 percent type "J" Acid and 28 barrels of water; maximum pressure 2700-pounds. Pumped plug to 8920 feet at 5:30 P.M. on June 16, 1960, released rig, and let the well set for three days.

On June 19, 1960, we rigged up an X-Pert Well Servicing Unit, and Frontier Perforators to run Correlation Gamma Ray and Collar Log and perforate, which they encountered some difficulty with their Gamma Ray tool with the small pipe; so we rigged up PGAC and perforated intervals from 8,752 to 8,771, 8,725 to 8,734, with the Jet Expendable Gun, total of 112 holes.

On June 20, 1960, we rigged Knox Services to break down the formation with acid which was spotted previously in the hole, and was unable to break down, even with 7,000 pounds. We run a sand line and found tubing bridged at 8,725 feet, so we closed the well in for acid in the hole to decompose the fused gun.

On June 21, 1960, we run a -- swabbed the hole dry, due to acid and water in the hole, to run measuring line, We couldn't

due to the fact it is a Holbert and Steel line, it would sustain itself in acid, and run the B. J. line. Tubing was cleared and it reached the depth of 8,879 feet. We rigged PGAC and re-perforated the intervals with the Sidewinder Gun, total 112 holes. Rigged Knox Services and acidized casing perforations with 500 gallons of 20 percent mud acid, and approximately 6 barrels of 15 percent Type "J" Acid were left in the hole; our breakdown meters with which a very tight 4 gallons a minute at 6200-pounds, was increased to 9 gallons, 6000-pounds for eight barrels; and broke to 5200, the injection rate increased to 27 gallons a minute for the final four barrels of acid; shut in pressure was 4800-pounds. We rigged and swabbed the hole dry. We recovered some unspent acid, spent acid water, and show of oil and gas.

Q That was with reference to the lower perforation on the log?

A The lower, from 8752-8771, 8725-8734; and we continued to swab, on June 22, 1960, at the rate of 300 feet of fill per hour. Estimated a barrel and three-quarters of oil with acid water. We rigged Knox Services to reacidize casing perforations from 8725-8734 feet and 8752-8771 feet, with 1,000 gallons of 15 percent SLT Acid solution. Our maximum pressure was 5500 pounds, minimum pressure was 4500-pounds, close in pressure 5,000 pounds, 10-minute close in pressure 4400 pounds; we closed the well in.

June 23, 1960, we swabbed back load and acid water with increase of gas and oil; maintained 500 feet of fluid in the hole.

We recovered 3 barrels fluid per hour with an increase of oil show. At this point, we were trying to decide whether or not to go ahead on the five or ten, or go and open the other, so we decided to go and perforate the upper two sections, which were from 8354 to 8365, 8655 to 8687, with four Jet shots from the Sidewinder Gun, totalling 172 holes, and set up a PGAC. We rigged Cecil Horne Wire Line Service and run P.S.I. tubing plug to 8,704 feet.

Q You plugged off the lower formation that you already referred to, is that correct?

A We set this to see if the plug bridged, with the break-down of the upper sections. We swabbed the hole dry, and pumped in our acid, which went in our vacuum, which was an indication we possibly communicated from 8655-8687 to the lower holes of 8725-8734.

On June 27, 1960, we rigged the Cecil Horne Wire Line Service and pulled the P.S.I. tubing plug at 8,704 feet. Rigged the Halliburton to acidize casing perforations from 8354-8365 feet, and 8655-8687 feet, and 8725-8734 feet, and 8752-8771 feet, with 10,000 gallons of 15 percent acid Gel. Maximum tubing pressure 7,000 pounds, 1500 gallons in the formation were channelled to the surface, and as we were treating this well, we left our casing valve open for an indication of the channel, as you would a packer if you were using tubing. We closed the well in. We put 2,000 gallons of acid in the tubing at this point, which was a total of 3500 gallons of acid going in; so we rigged down and swabbed the hole t recover

drilling mud to clean up the hole, and we re-cemented.

On June 28, 1960, we rigged Cecil Horne Wire Line Service and run tubing plug to 8,338 feet, we built the pressure up with B. J. Services to 3,000 pounds. The tubing pressure built in the channel, we were afraid it might blow up our tubing, so we run this as a check to find out, and we found out it was in the channel, the tubing pressure held, and we rigged the Cecil Horne Wire Line Service to retrieve the tubing plug. We rigged McCullough Tool Company and run 2-1/8 inch OD Aluminum Drillable Bridge Plug set at 8,303 feet, and tested it with 3,000 pounds pressure, and it held. Perforated 2-7/8 inch OD EUE casing from 8300-8302 feet with four Jet shots per foot. Rigged B. J. Services and break circulation with 1200 pounds. Circulate to surface. We cemented the 2-7/8 inch OD EUE casing with 100 sacks regular Neet Cement. Maximum pressure 1200 pounds. Closed well in.

On June 29, 1960, we rigged Coleman Engineering Company to run temperature survey. Top cement at 7,827 feet. We rigged Reynolds Specialty Company and drilled cement and bridge plug at 8300-8303 feet.

On June 30, 1960, we rigged Halliburton to acidize casing perforations from 8354-65, 8655-87, 8725-34, and 8752-71 with ten thousand gallons 15 percent acid Gel. Maximum tubing pressure 5900 pounds, minimum tubing pressure 4600 pounds, shut in pressure 3600 pounds, 10-minute shut in pressure 2700 pounds. Average pumping rate was 4.5 barrels per minute. Closed well in.

On July 1, 1960, the next morning, the hole was on vacuum. Rigged to swab. Swabbed back flush water with show of oil and gas. Well starts to flow at 2:00 P.M., with 440 pounds tubing pressure.

On July 2, 1960, well flowing this A.M. with 450-575 pounds tubing pressure on 24/64 inch choke.

MR. NUTTER: You mean on July the 2nd?

A That is correct. Recovered 170.52 barrels of fluid in 15 hours. 154.08 barrels of oil and 16.44 barrels of water. Closed well in.

Q (By Mr. Campbell) Now, during the time that you were doing all this, making this effort to obtain some production from this zone, you were essentially working inside your 2-7/8 tubing?

A All work was done inside that tubing.

Q Did you encounter any difficulties in connection with performing this work, using the 2-7/8 inch tubing, other than what you would normally expect to encounter if you were using a larger casing?

A No, I sure did not, and as far as time is concerned, it was quite a bit quicker.

Q Would you explain to the Examiner the cementing program that you followed with regard to cementing the 2-7/8 inch casing?

A We calculated our fill according to the cap appearing on the log, against the OD of our tubing, which calibrated us a fill of a thousand feet. We displaced this cement with a thousand

gallons of acid, so they would have this acid on formation as a spot when we perforated.

Q So your 2-7/8 inch is cemented from the 8951 feet to the 7827 feet?

A We attempted to run a survey on the second cement, we were unable to run on the first due to the fact we had about 4200 feet of acid in the hole.

Q Your immediate casing is set below the San Andres Sand there, is it?

A Porosity, it surely is.

Q Will you describe briefly to the Examiner about your well-head setup on the 2-7/8 inch casing?

A On the 2-7/8 inch casing we have 13-3/8 inch flange type Bradenhead with 8-5/8 landed in the spacing spool from 13 inch to 10 inch 900, with the 10-inch 900 National Type "E" Tubing hanger and the packer off of slips.

Q How long have you been engaged in doing work on well completions and workovers?

A Approximately ten years.

Q During that time, have you participated in the completion of a number of wells, using the 5-1/2 inch casing?

A That is correct.

Q Do you believe that the method of completion of this well, from the point of view of operation negotiation, and from the point of view of prevention of waste, it is efficient at this time?

A Yes.

Q Do you know that the cementing powers that you have used will adequately protect any potential oil producing zones in this hole?

A That is correct.

Q Do you believe it is sufficient to maintain satisfactory rigidity of the 2-7/8 inch casing?

A Yes. We ran six centralizers, which I failed to mention awhile ago, 616 to 660, from the joint of one at 8951, one at 8831, one at 8711, one at 8591, one at 8471, and one at 8351; and due to the weight of our tubing, I think that the tubing is pretty well in the center of the hole from this point to the surface.

MR. CAMPBELL: I believe that is all the questions I have, Mr. Examiner.

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

QUESTIONS BY MR. NUTTER:

Q You have got six centralizers over an interval of 600 feet, is that corredt?

A That is correct.

Q What is the normal number of centralizers you use when you are running and cementing 5-1/2 inch pipe?

A Depending on your zone that you anticipate pay, to have plenty and equal distribution of cement around your casing, and have your casing in the center of your well bore.

Q What is the normal number that you use on 5-1/2 inch pipe?

A Beg your pardon?

Q What is the normal number that you use on 5-1/2 inch pipe?

A It depends on the section of the well completion. Previous to this, I ran 24, but we have 1300 foot of possible pay, you see, in the centralizers, according to the zones that you might possibly complete in, or complete in at a later date.

Q You feel then that the use of centralizers is more important in the slim-hole type of completion than the standard type casing completion?

A Actually, I think so.

Q Are you aware of certain instances where the Commission has required the use of a centralizer on each joint of tubing that is used as casing --

A No, sir, I have not.

Q -- whereas, you have used one every four joints in this instance? On the 27th of June, Mr. Blount, were your 1500 gallons in the formation channelled to the surface, what do you mean, it came up through the cement?

A It came up through the cement. Our fill was figured on the calculated fill, plus 20 percent of our hole caliper, and we did not get the fill we anticipated.

Q And you re-cemented it on the 28th, is that correct?

A That is correct.

Q What did you do, perforate that 2-7/8ths?

A Perforated and blocked the circulation.

Q How many holes did you perforate?

A Eight holes.

Q Oh, I see. It is right, 8300 to 8302 for squeeze cementing the cement --

A That is correct.

Q -- the casing.

A And at this point we were able to run a temporary surface; previously,we were unable to do this due to the fact we had 1,000 gallons of acid in the hole.

Q How would you know whether that sheet of cement around those perforated holes in that casing, will stand up,and if the cement should fail right there at the holes, how will you repair the holes in the casing?

A At that point we have no porosity, permeability. On Exhibit 2 on which you are looking, we all know it is very tight, relatively, to the other sections.

Q You have got an interval of two feet that you have perforated?

A That is correct.

Q You never did ascertain the actual top of the cement on the first job?

A No, it was figured by calculation. We figured a thousand

foot of fill, 250 sacks would give us a thousand foot of fill with 20 percent area.

Q You finally had 1100 feet of fill with two cement jobs?

A That is correct.

Q Is this well flowing or pumping at the present time?

A It is closed in.

Q It was flowing though at the time it was closed in?

A That is right.

Q Then on that 1500 pound test, when you recovered 170 barrels of fluid, of which 16 barrels of it was water?

A That is correct.

Q Is that formation water, or --

A An analysis run on 20 and 25 acid, water at this point, we still had under 40 barrels of load water to recover of the 10,000 barrels of Gel acid in our treatment.

Q So when the well cleans up, we may produce water from the oil?

A That is highly possible.

Q Are there any Wolfcamp wells in this neighborhood, Mr. Blount?

A No, sir. The nearest are on the line of the Wolfcamp, and I imagine that is about eight or nine miles to the East.

Q Are there any Pennsylvania wells in this area except Sunray's Atoka gas well?

A The Mescalero Field is about two miles South and West,

which I understand is producing from the Pennsylvanian and the Devonian.

Q I was wondering about this situation, if they should create a Wolfcamp Pool and also a Pennsylvanian Pool, and also throw the two together and allocate and call it Permo-Pennsylvanian?

A That is the geological end there.

MR. CAMPBELL: Maybe Mr. Potts has an idea.

MR. POTTS: The Atoka's mythology is about 10,600 feet, I believe, 10,000 thereabouts; whereas, the -- and this is entirely a different geological section, both lithological and age-wise, and the so-called Permo-Pennsylvanian, this is not a good diagnostic term, it is used because the age of the body is still in doubt as to whether it is actually lower than the Wolfcamp, or up in with the Cisco in age. So in order to avoid a lithologic debate, it could be called Permo-Pennsylvanian.

I think you are talking about a commoner or similar reservoir in the Wolfcamp section, from say 8200 on through the log down through about 8900. This is roughly an equivalent interval production in the Crossroads and Abo Fields and that particular section. However, in this production your oil is high gravity oil, whereas the Atoka down here at 10,150 feet, thereabouts, is gas.

MR. NUTTER: Your lower producing interval here is in the Abo section, actually?

MR. POTTS: The Commission has, on quite a number of

locations determined that the Abo was Pennsylvanian; whereas, the upper portion of the Permo-Pennsylvanian was in the Waco or the Wolfcamp formation. Our correlation brings that the Abo would include but the bottom 3 feet of our formation. There you see, outside of that bottom three feet, all the rest is Wolfcamp.

Q (By Mr. Nutter) Mr. Blount, would it be feasible to duly complete this well to production from the upper set of perforations, lower set of perforations, and maintain separation between it?

A I hardly think so.

Q Is it your opinion at this time this well is going to be a commercial venture?

A Well, no more than we have recovered, it is hard to say. I should think on our primary, as strong as it is, it should be.

Q You have no idea how much of the production is coming from the lower set of perforations, how much is coming from the upper set of perforations?

A It appears that possibly 50/50, due to your breakdown of work preference, and on your swab banks where we started with a 300-foot fill, per our swab after breakdown, and got it increased to a 500 foot fill with total holes open.

Q Is it possible that you are going to artificially lift this well?

A Surely no problem.

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

QUESTIONS BY MR. PAYNE:

Q Mr. Blount, you circulate your cement on your surface string?

A That is correct.

Q And you used 300 sacks of cement on 2-7/8?

A That is correct.

Q What is your calculated top there?

Q 2700.

MR. NUTTER: Did you take the temporary survey to establish that?

A It was calculated.

Q (By Mr. Payne) Did you encounter undue pressure problems when you completed this well?

A You mean as far as treating?

Q Yes, sir.

A No, sir, we did not. We anticipated going to 10,000 pounds, and 7,000 was our maximum.

Q Now, I believe Mr. Potts said this is high gravity oil?

A It is 43.1, corrected to 85.1, and 85.

Q Is it corrosive?

A No, sir.

Q You do not anticipate any corrosion problems?

A Surely, but the water analysis shows 67 parts per million chlorides, which isn't too strong.

MR. PAYNE: Thank you.

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

(No response.)

MR. NUTTER: You may be excused.

(Witness excused.)

MR. CAMPBELL: I would like to offer the Applicant's Exhibits 1 through 4.

MR. NUTTER: Cabeen's Exhibits 1 through 4 will be entered into evidence. Do you have anything further, Mr. Campbell?

MR. CAMPBELL: No.

MR. NUTTER: If there is nothing further, we will take the case under advisement.

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

I, LLEWELYN NELSON, Notary Public 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 stenotype and reduced to typewritten transcript by me, 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 5th day of August, 1960, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Llewellyn F. Nelson
NOTARY PUBLIC.

My Commission Expires:

June 14, 1964.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2033, heard by me on 7/28, 1960.

Examiner
New Mexico Oil Conservation Commission

I N D E X

WITNESS	PAGE
NEILL H. POTTS	
Direct Examination by Mr. Campbell	1
QUESTIONS by Mr. Nutter	7
FORREST BLOUNT	
Direct Examination by Mr. Campbell	8
QUESTIONS by Mr. Nutter	16
QUESTIONS by Mr. Payne	22

NUMBER	EXHIBIT	MARKED FOR IDENTIFICATION	OFFERED	ADMITTED
App.#1	Land Plat	2	23	23
" #2	Radioactive Log	4	23	23
" #3	Log	9	23	23
" #4	Diagramatic Sketch	9	23	23