

CASE 4338: Application of SKELLY
OIL COMPANY FOR A WATERFLOOD
PROJECT, EDDY COUNTY, NEW MEXICO.

Case Number

4338

Application

Transcripts.

Small Exhibits

ETC.

dearnley-meier

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

209 SIMMS BLDG. • P.O. BOX 1092 • PHONE 213-6691 • ALBUQUERQUE, NEW MEXICO



BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Hobbs, New Mexico
April 15, 1970

REGULAR HEARING

IN THE MATTER OF:

Application of Skelly Oil Company for
a waterflood project, Lea County,
New Mexico.

Case No. 4338

BEFORE: A. L. Porter, Secretary-Treasurer
David F. Carro, Governor
George Hatch, General Counsel

Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

MR. WATSON: We will call next Case, 4330.

MR. HATCH: Case 4330. Application of Shelly Oil Company for a waterflood patent, 1110 Grant, New Mexico.

MR. CURTIS: George C. Selinger, appearing for Shelly Oil Company. The Commission has in its file a letter from our local counsel, J. C. White. We have one witness, which we would like to have sworn.

(Witness sworn.)

(Examination, Applicant's Exhibits A through H were marked for identification.)

MR. G. BROWN

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. SELINGER:

Q State your name.

A Bert G. Brown.

Q You're associated with what company and what capacity?

A I am an advanced production engineer with Shelly Oil Company.

Q How long have you been with Shelly Oil?

A Seven and a half years.

Q Are you a graduate of a credit school in petroleum engineering?

A Yes, sir.

Q What year did you graduate?

A 1950.

Q Have you been practicing your profession since that date?

A Yes, sir.

Q Are you familiar with the Skelly Oil Company's operations in the area covered by this application?

A Yes, sir.

Q Are you familiar likewise with Exhibits A through K and were they prepared under your supervision and direction?

A Yes, sir.

Q Now, I think you are asking three approvals from the Commission. First, to inject water in all intervals of the vertical limits of the Grayburg-Jackson Pool; is that correct?

A Yes, sir.

Q Secondly, you are selectively completing water injection wells as may be required to permit separate and simultaneous injection into the Grayburg-Jackson reservoir

if desirable in the future?

A Yes, sir.

Q And thirdly, the future expansion of the project within the Lea "D" Lease boundaries by administrative approval should additional wells be completed on the lease?

A Yes, sir.

Q Now, I hand you what's been marked as Applicant's Exhibit A and ask you to state what that is?

A Exhibit A is a plat showing the location of the project, the proposed injection and producing wells. The plat shows all wells and producing horizons within a two-mile radius.

It also shows the currently operating waterflood projects in the area, such as Hudson and Hudson's Pucket project, Skelly Oil Company's Skelly Unit project, Atlantic Richfield's Turner "D" project to the west.

Q Now, are all these waterflood projects similar to the waterflood project you intend to apply to the Lea "D" Lease?

A Yes, sir.

Q I'll hand you what's been marked as Exhibit B and ask you to state what that is.

A Exhibit B is a diagrammatic sketch of the

proposed injection well Lea "D" Number 1, showing as it will be completed and equipped for water injection service. Internally coated tubing will be employed with tension type packer set as shown.

The annular space above the packer will be loaded with inhibited water and when injection tubing pressures become high enough to offset the annulus hydrostatic pressure. Pressure gauges were set but will be installed on the casing tubing annulus of each injection well to monitor pressure build-up.

Exhibits C and D are diagrammatic sketches of Wells Number 3 and 6, the other two injection wells.

O You mean portions of Exhibit B contain all three proposed injection wells diagrammatic sketches; is that correct?

A Exhibits B, C and D.

O B, C and D?

A Yes, sir.

O Now, I'll hand you what has been marked as Applicant's Exhibit E and ask you to state what that is?

A Exhibit E is a tabulation of the well data showing the well status, completion and production data, which includes casing information, total depths, completion treatments

and additional work planned on these wells.

The above-mentioned diagrammatic sketches represent these wells after the work on this summary has been completed. Four of the wells are producing from open hole and two upper casing perforations.

Q I'll hand you what has been marked as Applicant's Exhibit F and ask you to state what that is?

A Exhibits F, G and H, which are the same for the three injection wells, are partial log copies of the three injection wells covering the reservoir section and the exhibits that we have present here are complete copies of the logs on these wells.

Q So, Exhibits F, G and H are complete logs of the three proposed injection wells?

A Yes, sir.

Q Now, I'll hand you what has been marked as Applicant's Exhibit I and ask you to state what that is.

A Exhibit I is a decline production graph on the lease showing the production of the lease since inception to 1-1-1970. It shows the wells to be in an advanced state of depletion with the production averaging about five barrels of oil per day.

It also shows that there is some response from

water injection in the surrounding projects.

Q Is this portion of the field in the depleted stage of depletion?

A Yes, sir.

Q I'll ask you to explain Exhibit J.

A Exhibit J is a letter from the United States Department of Interior, who owns the royalty in this area. Both, under this lease and under the offsetting leases and it is their approval for this project.

Q Now, have you had a water analysis made of the proposed injection water?

A Yes, we have.

Q Is that shown by Exhibit K?

A Yes, sir. That is an analysis of the water that we are currently injecting in our Skelly unit project which we plan also to use in this Lea "D" project.

Q Now, what is the source of the injection water proposed in the project?

A The source is the Ogallala formation and we purchase this water from the Double Eagle Water Company.

Q And how are you going to inject the water? What volumes and what pressure, if any?

A We expect to inject nine to fifteen hundred

barrels per day in the three injection wells of a well head pressure of 1630 to 1650 pounds per square inch surface pressure.

Q And will the produced water be reinjected in the reservoir through our disposal system preventing contamination of the surface or the shallow bay?

A Yes, sir. We plan to take the produced water from the Lea "D" Lease into the Skelly unit water disposal system and inject it back into the reservoir.

Q Based on the results of the success of the surrounding units, how much additional volumes of secondary oil do you contemplate recovering?

A We expect to recover about a 1 to 1 ratio of primary to secondary oil, which, in this case, amounts to about two hundred pounds a barrel.

Q If the application is approved, will you operate this project as you do the other projects in conforming with Statewide Rule 701?

A Yes, sir.

MR. SELINGER: We would like to offer in evidence Exhibits A through K, both inclusive.

MR. NUTTER: Skelly's Exhibits A through K will be admitted in evidence.

MR. SULLIVAN: That's all we have.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Brown, the schematic diagrams, Exhibits B, C and D indicate that each one of the wells has a cement to approximately -- in the teens, 1100 to 1600 feet on the long string?

A Yes, sir.

Q Now, the injection in each case will be through internally coated tubing; is that correct?

A Yes, sir.

Q And the annulus will be loaded with what type of fluid, please?

A Water with frozen inhibited.

Q Inhibited water?

A Yes, sir.

Q The annulus will be equipped with a gauge in order to determine leakage in the packer or tubing?

A Yes, sir.

MR. NUTTER: Are there any further questions of Mr. Brown? He may be excused.

(Witness excused).

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

MR. SELINGER: No, sir.

MR. NUTTER: Does anyone have anything they wish to offer in Case 4338? We will take the case under advisement and call Case Number 4339.

I N D E X

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STATE OF NEW MEXICO)
)
COUNTY OF BERNALILLO)

I, BRENDA BURKS, Court Reporter in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.

Blenda Banks
Court Reporter

I do hereby certify that the foregoing is
a complete record of the _____
the _____
being to me of _____.

....., Supervisor
New Mexico Oil Conservation Commission

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

April 21, 1970

C
Mr. George W. Selinger
Skelly Oil Company
Post Office Box 1650
Tulsa, Oklahoma 74102

Dear Sir:

O
Enclosed herewith is Commission Order No. R-3952, entered in Case No. 4338, approving the Skelly Grayburg-Jackson Lea "D" Waterflood Project.

P
Injection shall be through the three authorized water injection wells, each of which shall be equipped with internally plastic-coated tubing set in a packer. Packers shall be set as near as is practicable to the uppermost perforation, as in the case of the open-hole completion, as near as practicable above the casing shoe. The casing-tubing annulus shall be loaded with a corrosion-inhibited fluid and equipped with a pressure gauge.

Y
As to allowable, our calculations indicate that when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 248 barrels per day when the Southeast New Mexico normal unit allowable is 42 barrels per day or less.

Please report any error in this calculated maximum allowable immediately, both to the Santa Fe office of the Commission and the appropriate district proration office.

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify both of the aforementioned Commission offices by letter of any change in the status of wells in the project area, i.e., when active injection commences, when additional injection or producing wells are drilled,

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

-2-

Mr. George W. Selinger
Skelly Oil Company
Post Office Box 1650
Tulsa, Oklahoma 74102

April 21, 1970

C when additional wells are acquired through purchase or unitization,
when wells have received a response to water injection, etc.

Your cooperation in keeping the Commission so informed as to the
status of the project and the wells therein will be appreciated.

O
P
Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

P
ALP/ir

Y cc: Oil Conservation Commission
Hobbs, New Mexico

Oil Conservation Commission
Artesia, New Mexico

U. S. Geological Survey
Drawer U
Artesia, New Mexico

Mr. D. E. Gray, State Engineer Office
Santa Fe, New Mexico

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. 4338
Order No. R-3952

APPLICATION OF SKELLY OIL COMPANY
FOR A WATERFLOOD PROJECT, EDDY COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 15, 1970,
at Hobbs, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 22nd day of April, 1970, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, 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, Skelly Oil Company, seeks permis-
sion to institute a waterflood project on its Lea "D" Lease,
Grayburg-Jackson Pool, by the injection of water into the San
Andres zone of the Grayburg-Jackson Pool through three injection
wells located in Units B, H, and J of Section 26, Township 17
South, Range 31 East, NMPM, Eddy County, New Mexico.

(3) That the applicant further seeks an administrative
procedure whereby said project could be expanded to include
additional injection wells in the area of the said project as
may be necessary in order to complete an efficient injection
pattern; that said administrative procedure should provide for
administrative approval for conversion to water injection in
exception to the well response requirements of Rule 701 E-5
of the Commission Rules and Regulations.

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CASE No. 4338
Order No. R-3952

(4) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(5) That the proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(6) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations; provided, however, that the showing of well response as required by Rule 701 E-5 shall not be necessary before obtaining administrative approval for the conversion of additional wells to water injection.

IT IS THEREFORE ORDERED:

(1) That the applicant, Skelly Oil Company, is hereby authorized to institute a waterflood project on its Lea "D" Lease, Grayburg-Jackson Pool, by the injection of water into the San Andres formation through the following-described wells in Section 26, Township 17 South, Range 31 East, NMPM, Eddy County, New Mexico:

Lea "D" Well No. 1 - Unit B
Lea "D" Well No. 3 - Unit H
Lea "D" Well No. 6 - Unit J

(2) That the subject waterflood project is hereby designated the Skelly Grayburg-Jackson Lea "D" Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations;

PROVIDED HOWEVER, that the Secretary-Director of the Commission may approve expansion of the Skelly Grayburg-Jackson Lea "D" Waterflood Project to include such additional injection wells in the area of said project as may be necessary to complete an efficient water injection pattern; that the showing of well response as required by Rule 701 E-5 shall not be necessary before obtaining administrative approval for the conversion of additional wells to water injection.

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CASE No. 4338

Order No. R-3952

(3) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.


(4) 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


DAVID F. CARGO, Chairman


ALEX J. ARMIJO, Member


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



ear/

ROUGH DRAFT FOR WATERFLOOD LETTERS

Mr. George W. Selinger
Skelly Oil Company
Post Office Box 1650
Tulsa, Oklahoma 74102

Dear Sir:

Enclosed herewith is
Commission Order No. R-3952, entered in Case No. 4338, approving the *Skelly Brayburg Jackson Lea "D"* Waterflood project.

Injection shall be through the three authorized water injection wells, each of which shall be equipped with interpoly plastic coated tubing set in a packer. Packer shall be set as near as is practicable to the uppermost perforation, as in the case

As to allowable, our calculations indicate that when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 248 barrels per day when the Southeast New Mexico normal unit allowable is 42 barrels per day or less.

Please report any error in this calculated maximum allowable immediately, both to the Santa Fe office of the Commission and the appropriate district proration office.

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify both of the aforementioned Commission offices by letter of any change in the status of wells in the project area, i.e., when active injection commences, when additional injection or producing wells are drilled, when additional wells are acquired through purchase or unitization, when wells have received a response to water injection, etc.

Your cooperation in keeping the Commission so informed as to the status of the project and the wells therein will be appreciated.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

cc: OCC: Hobbs X
Artesia X
Aztec

USGS Artesia

~~Mr. Frank Kelly~~, State Engineer Office, Santa Fe, New Mexico

Mr. D. E. Gray

if the open-hole completion, as near as practicable above the casing shoe. The casing tubing annulus shall be loaded with a corrosion-inhibited fluid and equipped with a pressure gauge.

WHITE, GILBERT, KOCH & KELLY
GILBERT, WHITE AND GILBERT
ATTORNEYS AND COUNSELORS AT LAW
LINCOLN BUILDING
SANTA FE, NEW MEXICO 87501

CARL H. GILBERT (1891-1963)
L. C. WHITE
WILLIAM W. GILBERT
SUMNER S. KOCH
WILLIAM BOOKER KELLY
JOHN F. MCCARTHY, JR.
KENNETH BATEMAN

March 23, 1970

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970 MAR 24 AM 8 17

Mr. A. L. Porter, Jr.
Secretary-Director
Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Case 4338

Dear Mr. Porter:

Will you please enter the undersigned as attorney of record in "The Matter of the Application of Skelly Oil Company for an Order to Allow Waterflooding of the Entire Grayburg Jackson Pool Interval, Underlying the Lea 'D' Lease, Permit Injection into Three Wells, Permit Administrative Expansion of the Project Area"?

It is my understanding a hearing has been requested on this application April 15, 1970.

Very truly yours,

L. C. White
L. C. WHITE

LCW:cc

cc: Mr. P. L. Nunley
District Production Manager
Skelly Oil Company
P. O. Box 1351
Midland, Texas 79701

Mr. George L. Selinger
Skelly Oil Company
P. O. Box 1650
Tulsa, Oklahoma 74102

DOCKET MAILED

Date 4-2-70

DOCKET: REGULAR HEARING - WEDNESDAY - APRIL 15, 1970

OIL CONSERVATION COMMISSION - 9 A.M. - THE HOLIDAY INN, 200 SOUTH LINAM,
HOBBS, NEW MEXICO

- ALLOWABLE: (1) Consideration of the oil allowable for May, 1970;
- (2) Consideration of the allowable production of gas for May, 1970, from fifteen prorated pools in Lea, Eddy, Chaves and Roosevelt Counties, New Mexico. Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico, for May, 1970.

THE FOLLOWING CASES WILL BE HEARD BY THE COMMISSION OR BY
A. I. PORTER, Jr., EXAMINER OR DANIEL S. NUTTER, ALTERNATE
EXAMINER:

CASE 4332: In the matter of the hearing called by the Oil Conservation Commission upon its own motion to consider the inclusion of the NW/4 of Section 10, Township 9 South, Range 36 East, Lea County, New Mexico, in the Allison-Pennsylvanian Pool or the Vada-Pennsylvanian Pool, whichever is proper.

CASE 4333: Application of Phillips Petroleum Company for a dual completion and salt water disposal, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Marley "A" Well No. 1, a wildcat well, located in Unit P of Section 3, Township 11 South, Range 31 East, Chaves County, New Mexico, in such a manner as to permit the production of oil from the San Andres formation through perforations from 4148 feet to 4165 feet and the disposal of produced salt water into the San Andres formation through the perforated interval from 4344 feet to 4800 feet.

CASE 4084: (Reopened)

In the matter of Case No. 4084 being reopened pursuant to the provisions of Order No. R-3732, which order established 160-acre spacing units and an 80-acre proportional factor of 4.77 for the Feather-Wolfcamp Pool, Lea County, New Mexico. All interested parties may appear and show cause why the said pool should not be developed on less than 160-acre spacing units and to show cause why the 80-acre proportional factor of 4.77 should or should not be retained.

- CASE 4334: Application of Pan American Petroleum Corporation for an unorthodox gas well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to recomplete its State Gas Com "BG" Well No. 1 at an unorthodox location 1450 feet from the North line and 1490 feet from the West line of Section 2, Township 29 North, Range 10 West, Blanco-Mesaverde Pool, San Juan County, New Mexico, the N/2 of said section to be dedicated to the well.
- CASE 4335: Application of Gulf Oil Corporation for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the vacuum (Grayburg-San Andres) Pool by the injection of water into the San Andres formation through its Lea "FE" State Wells Nos. 2 and 4, located in Units C and E, respectively, of Section 11, Township 17 South, Range 34 East, Lea County, New Mexico.
- CASE 4336: Application of Byron McKnight for an exception to Order No. R-3221, as amended, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil or gas on the surface of the ground in Lea, Eddy, Chaves, and Roosevelt Counties. Said exception would be for applicant's lease comprising all of Section 19, W/2 Section 20, NW/4 Section 29, and NW/4 Section 30, Township 19 South, Range 34 East, undesignated Yates-Seven Rivers gas pool, Lea County, New Mexico. Applicant seeks authority to dispose of salt water produced by wells on said leases in unlined surface pits on the leases.
- CASE 3859: (Continued from the October 15, 1969, Regular Hearing)
Application of Wilson Oil Company for an exception to Order No. R-3221, as amended, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Commission Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil on the surface of the ground in Lea, Eddy, Chaves and Roosevelt Counties, New Mexico, after January 1, 1969. Said exception would be for applicant's leases in Sections 13, 23, and 24 of Township 21 South, Range 34 East, and Sections 7 and 18 of Township 21 South, Range 35 East, Wilson Yates-Seven Rivers Pool, Lea County, New Mexico. Applicant, seeks authority to continue to dispose of produced water in seven unlined surface pits located in the center of the W/2 of said Section 13, center of the W/2 SE/4 of said Section 13, SW/4 NE/4 of said Section 23, center of SW/4 of said Section 24, center of the NE/4 of said Section 7, NE/4 SW/4 of said Section 7, NW/4 NW/4 of said Section 18.

(Case 3859 continued)

In the alternative, applicant seeks an extension of time in which to comply with the provisions of said order.

CASE 4337: Application of Petroleum Corporation of Texas for an exception to Order No. R-3221, as amended, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil on the surface of the ground in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico. Said exception would be for applicant's Dexter Hanagan Graridge Federal Well No. 1 located in Unit J, Section 22, Township 17 South, Range 30 East, Jackson-Abo Pool, Eddy County, New Mexico. Applicant seeks authority to dispose of salt water produced by said well in an unlined surface pit in the vicinity of said well.

CASE 4338: Application of Skelly Oil Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project on its Lea "D" Lease by selective injection of water into various zones of the Grayburg-Jackson Pool through three wells located in Units B, H, and J of Section 26, Township 17 South, Range 31 East, Eddy County, New Mexico. Applicant further seeks a procedure whereby said project may be expanded administratively without a showing of well response.

CASE 4339: Southeastern nomenclature case calling for an order for the creation of certain new pools and the assignment of oil discovery allowables and the contraction and extension of certain other pools in Lea, Chaves and Eddy Counties, New Mexico.

(a) Create a new pool in Chaves County, New Mexico, classified as an oil pool for San Andres production and designated as the Tower-San Andres Pool comprising the following:

TOWNSHIP 11 SOUTH, RANGE 31 EAST, NMPM
SECTION 3: SE/4

(Case 4339 continued)

Further, for the assignment of approximately 20,740 barrels of oil discovery allowable to the discovery well Phillips Petroleum Company's Marley "A" Well No. 1, located in Unit P of said Section 3.

(b) Create a new pool in Lea County, New Mexico, classified as an oil pool for Pennsylvanian production and designated as the Tres Papalotes-Pennsylvanian Pool, comprising the following:

TOWNSHIP 14 SOUTH, RANGE 34 EAST, NMPM
SECTION 33: NE/4

Further, for the assignment of approximately 52,340 barrels of oil discovery allowable to the discovery well Lone Star Producing Company's New Mexico (80) State Well No. 1 located in Unit B of said Section 33.

(c) Create a new pool in Eddy County, New Mexico, classified as an oil pool for Cherry Canyon production and designated as the Sand Dunes-Cherry Canyon Pool. The discovery well is Texas American Oil Corporation's Todd 26 Federal Well No. 2 located in Unit G of Section 26, Township 23 South, Range 31 East, NMPM. Said pool would comprise:

TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM
SECTION 26: SW/4 NE/4

(d) Create a new pool in Lea County, New Mexico, classified as an oil pool for Devonian production and designated as the Warren-Devonian Pool. The discovery well is Continental Oil Company's SEMU Burger B No. 58 located in Unit C of Section 29, Township 20 South, Range 38 East, NMPM. Said pool would comprise:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM
SECTION 29: NW/4

(e) Extend the Buffalo Valley-Pennsylvanian Gas Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 27 EAST, NMPM
SECTION 26: S/2

(Case 4339 continued)

- (f) Extend the East Caprock-Devonian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 12 SOUTH, RANGE 32 EAST, NMPM
SECTION 23: NE/4

- (g) Extend the Eagle Creek-San Andres Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 25 EAST, NMPM
SECTION 23: NW/4 NW/4

- (h) Extend the South Eunice-San Andres Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
SECTION 11: NE/4

- (i) Extend the Maljamar Grayburg-San Andres Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM
SECTION 9: NE/4
SECTION 10: NW/4

- (j) Extend the Quail Ridge-Morrow Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 34 EAST, NMPM
SECTION 20: All

(k) Extend the Round Tank-Queen Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 15 SOUTH, RANGE 29 EAST, NMPM
SECTION 30: W/2 NW/4 and NW/4 SW/4

(l) Extend the Shugart Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 30 EAST, NMPM
SECTION 25: W/2 NW/4

(m) Contract the Bough Permo- Pennsylvanian Pool in Lea County, New Mexico, by the deletion of the following described area:

TOWNSHIP 9 SOUTH, RANGE 35 EAST, NMPM
SECTION 14: S/2

(n) Extend the Vada-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 9 SOUTH, RANGE 33 EAST, NMPM
SECTION 13: S/2

TOWNSHIP 9 SOUTH, RANGE 34 EAST, NMPM
SECTION 18: S/2

TOWNSHIP 9 SOUTH, RANGE 35 EAST, NMFM
SECTION 10: SE/4
SECTION 14: S/2
SECTION 15: NE/4
SECTION 23: NW/4

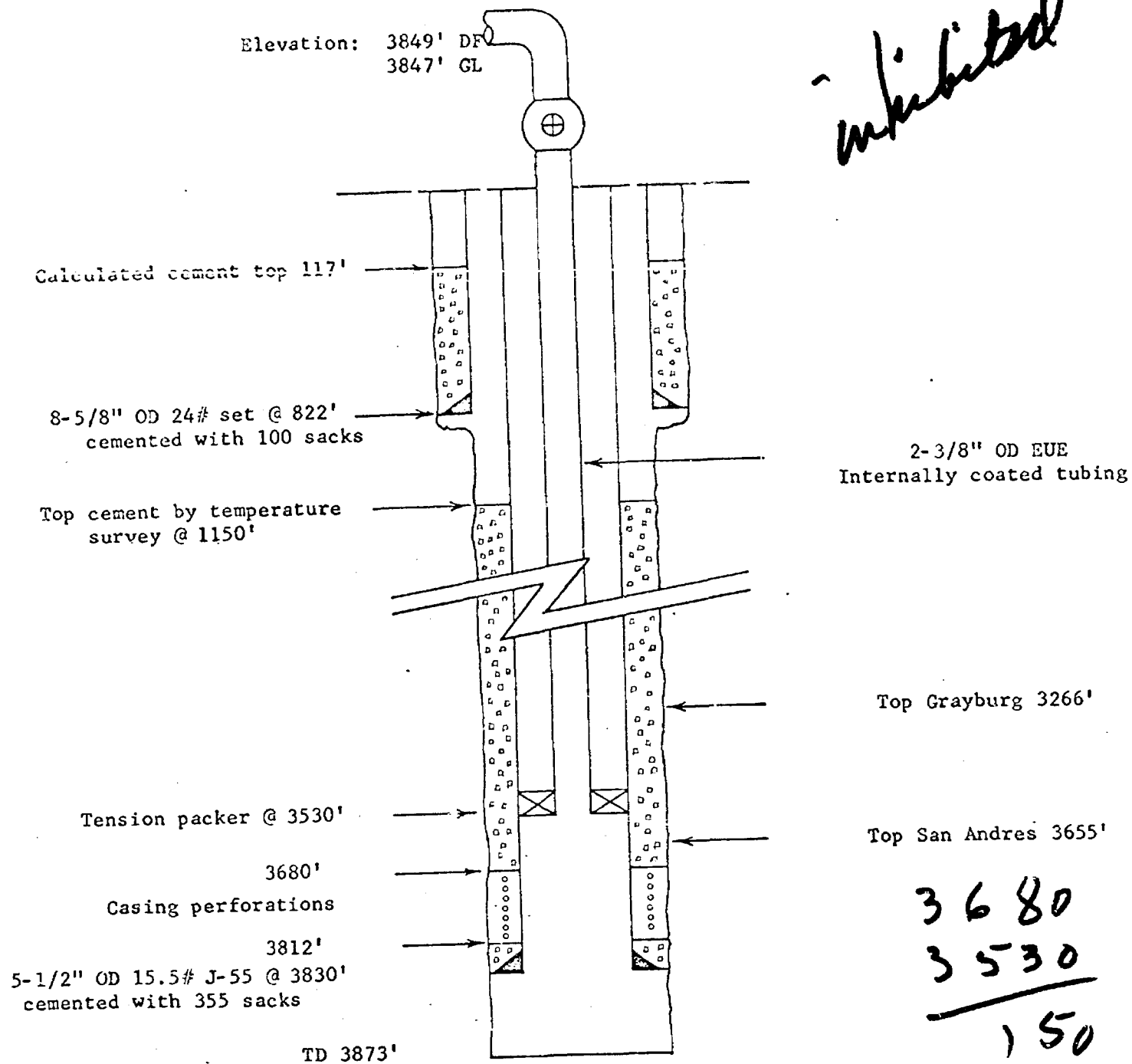
DIAGRAMMATIC SKETCH
Skelly Oil Company
Lea "D" No. 1
660' FNL 1980' FEL
Section 26-T17S-R31E
Eddy County, New Mexico

BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSION

copy EXHIBIT NO. B

CASE NO. 4338

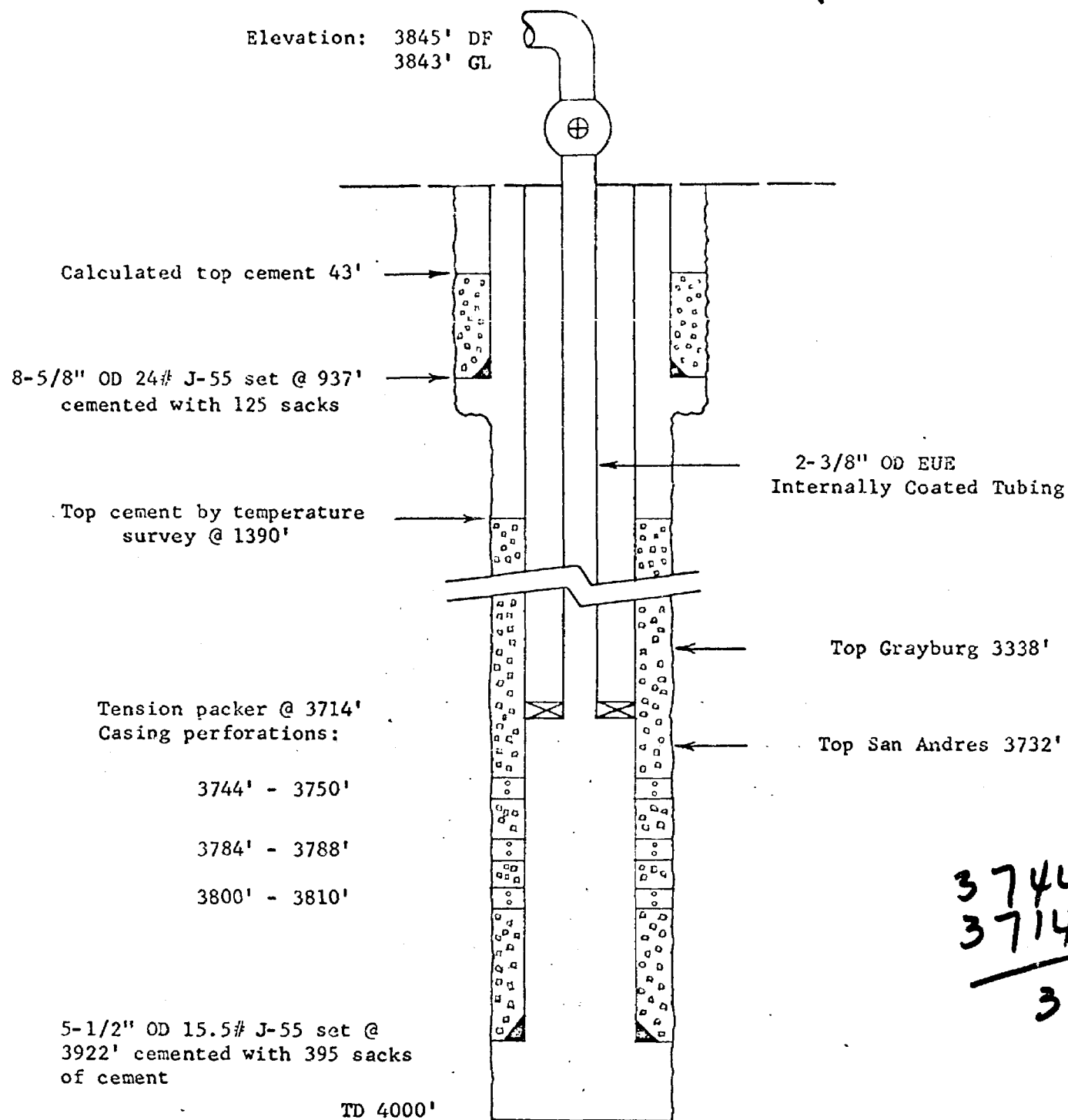


DIAGRAMMATIC SKETCH
Skelly Oil Company
Lea "D" No. 3
1980' FNL 660' FEL
Sec. 26-T17S-R31E
Eddy County, New Mexico

BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSION

appl EXHIBIT NO. C
C. 10. 4338

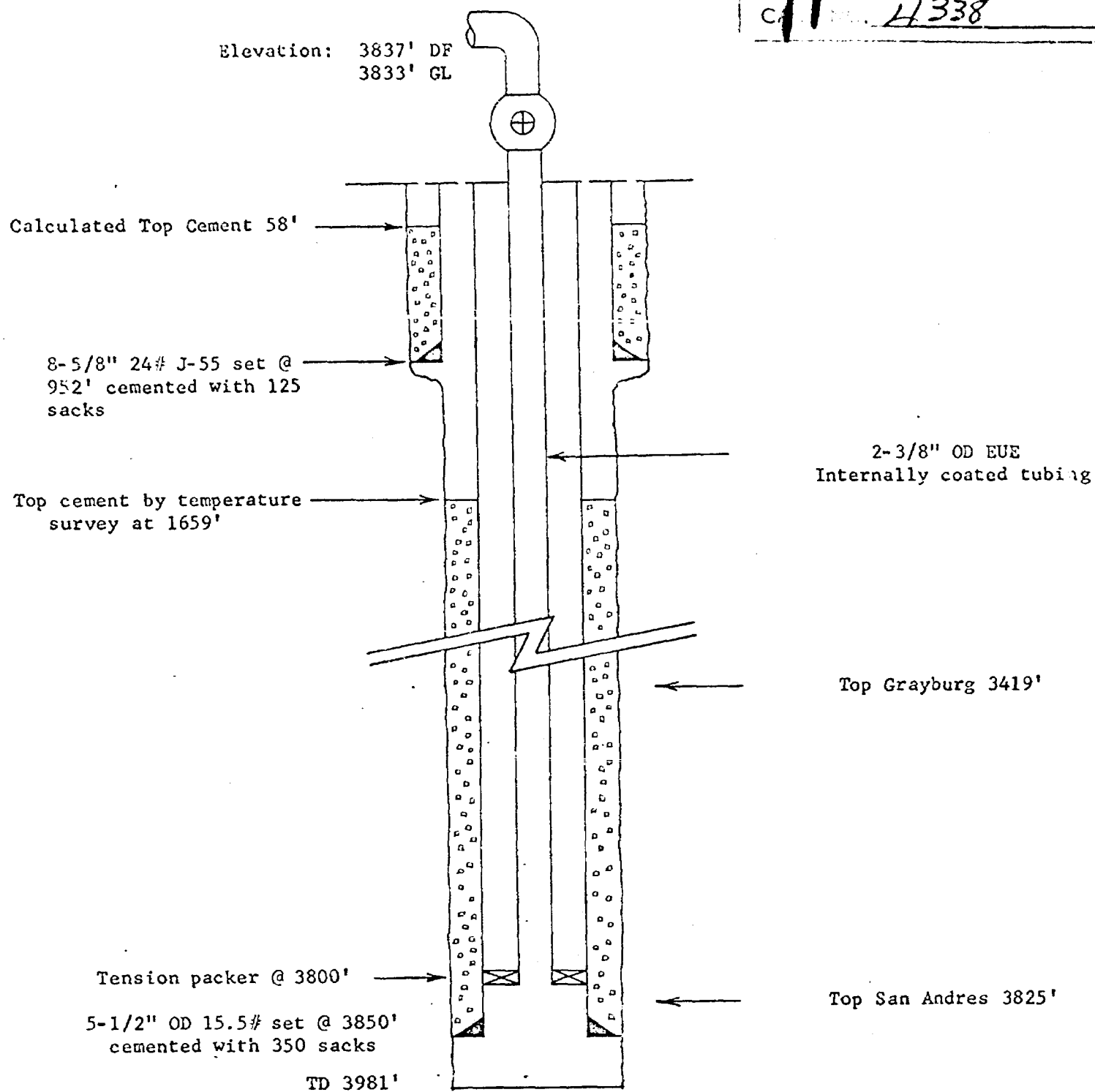


DIAGRAMMATIC SKETCH
Skelly Oil Company
Lea "D" No. 6
1980' FSL 1980' FSL
Section 26-T17S-R31E
Eddy County, New Mexico

BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSION
EXHIBIT NO. D
Case No. 4338

Elevation: 3837' DF
3833' GL



BEFORE EXAMINER NUTTER

SKELLY OIL COMPANY
Well Data Summary
Lea "D" Lease
Eddy County, New Mexico

CONSERVATION COMMISSION

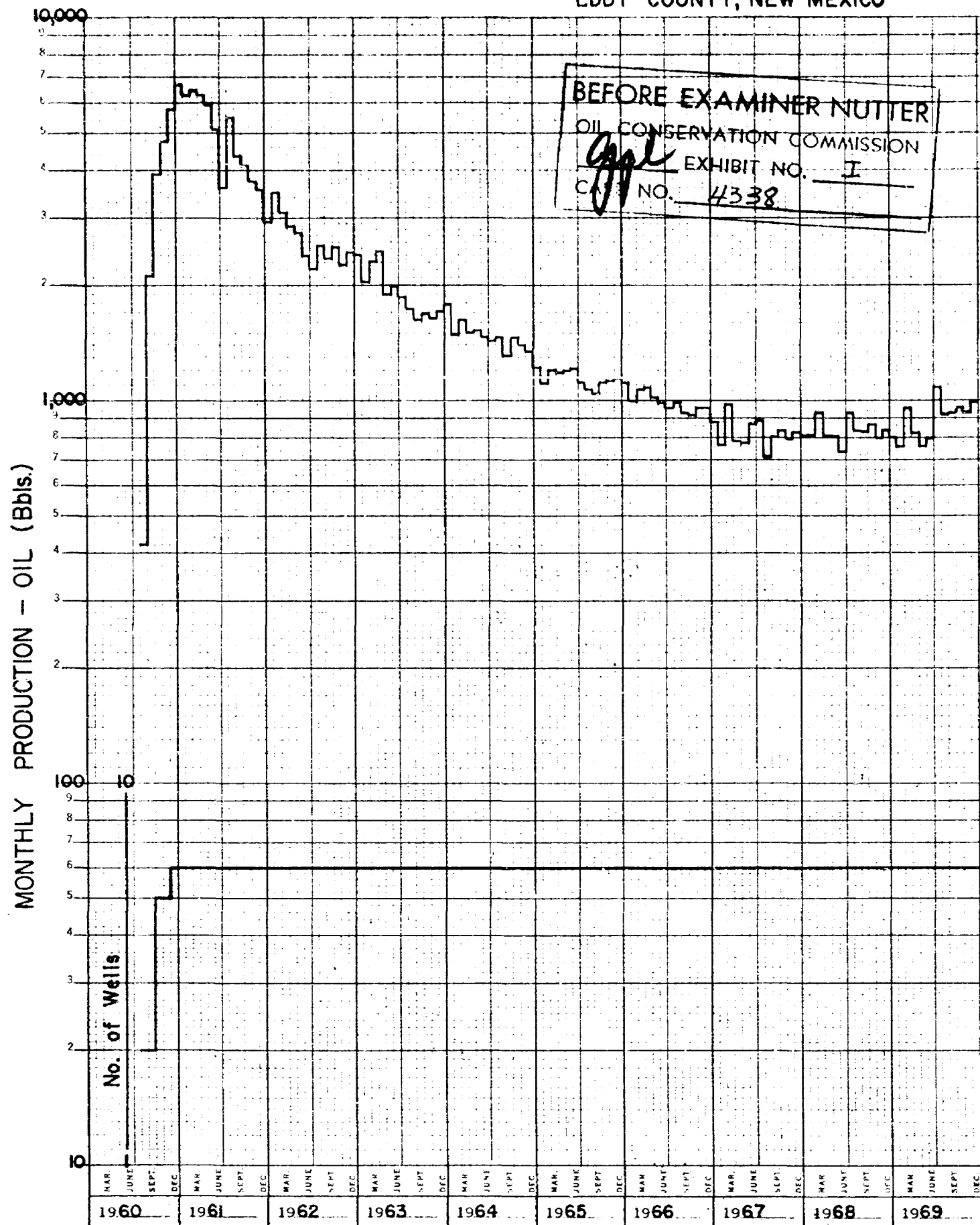
EXHIBIT NO. E

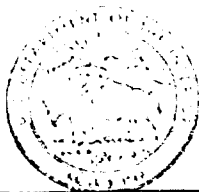
4338 Total

Well No.	Casing Program	Depth	Date Completed	Completion Data	Present Producing Interval	Producing Rate Initial	Producing Rate Current	Cum. Prod. to 1/1/70	Planned Project Status	Additional Work Planned
1	8-5/8"-822' 100 sacks 5-1/2"-3830' 355 sacks Top cmt. outside 5-1/2" at 1150'	3873'	8-17-60	Fraced 3830'-3873' OH with 750 bbl LO 60,000# sand	3830'-3873'	319 BOPD & 7 BOPD flowing	8 BOPD	32,297 BO 34,523 MCF 889 BW	Injection	Perforate & acidize 3680' to 3812'
2	8-5/8"-837' 100 sacks 5-1/2"-3863' 385 sacks Top cement outside 5-1/2" at 1571'	3930'	8-22-60	Fraced 3863'-3930 OH with 425 bbl LO 40,000# sand. Plugged back to 3836'. Fraced 3584'-3805' perfs with 1355 bbls LO & 88,000 sand.	3584'-3805'	325 BOPD flowing	7 BOPD	37,353 BO 60,194 MCF 118 BW	Producer	Remove plug & clean out
3	8-5/8"-937' 125 sacks 5-1/2"-3922' 395 sacks Top cement outside 5-1/2" at 1390'	4000'	10-7-60	Plugged back to 3870' Fraced 3744'-3810' perfs with 1432 bbl LO 52,000# sand	3744'-3810'	299 BOPD flowing	2 BOPD	25,276 BO 117,249 MCF 306 BW	Injection	Remove plug & clean out
4	8-5/8"-901' 100 sacks 5-1/2"-3737' 285 sacks Top cement outside 5-1/2" at 1889'	3860'	9-23-60	Fraced 3737-3860' OH with 1371 bbls LO 60,000# sand	3737'-3860'	362 BOPD flowing	6 BOPD	42,596 BO 36,258 MCF 344 BW	Producer	Deepen to 3940'
5	8-5/8"-978' 125 sacks 5-1/2"-3811' 395 sacks Top cement outside 5-1/2" at 1490'	3951'	10-22-60	Fraced 3811'-3951' OH with 1500 bbl LO 60,000# sand	3811-3951'	406 BOPD flowing	6 BOPD	42,867 BO 92,982 MCF 128 BW	Producer	None
6	8-5/8"-952' 125 sacks 5-1/2"-3850' 350 sacks Top cement outside 5-1/2" at 1659'	3981'	12-4-60	Fraced 3850-3981' OH with 1400 bbl LO 50,000# sand	3850-3981'	45 BOPD 25 BOPD flowing	3 BOPD	22,513 BO 51,122 MCF 12,828 BW	Injection	None

NOTE: All cement tops are by temperature survey.

SKELLY OIL COMPANY
LEA "D" LEASE
EDDY COUNTY, NEW MEXICO





UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SKELLY OIL COMPANY
EXPL. & PROD. DIV.
BOX 88100
WEST CENTRAL DISTRICT

BEFORE EXAMINER NUTTER

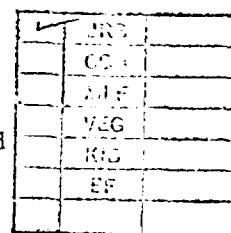
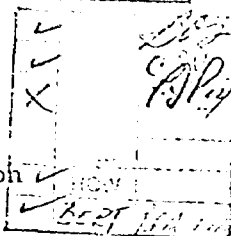
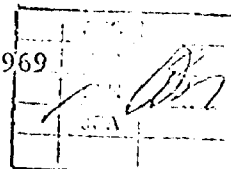
OIL CONSERVATION COMMISSION

P. O. Drawer U
Artesia, New Mexico 88210

EXHIBIT NO. J
NO. 4338

Skelly Oil Company
Post Office Box 1351
Midland, Texas 79701

November 24, 1969



Gentlemen:

Your letter of November 18, 1969 requests approval to operate a waterflood of the Grayburg-San Andres formation on that portion of oil and gas lease Las Cruces 029418(b) described as follows:

T. 17 S., R. 31 E., N.M.P.M., Eddy County, New Mexico
sec. 26: S $\frac{1}{2}$, S $\frac{1}{2}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$

The flood pattern would be an 80-acre 5-spot which would be a continuation of the pattern of the waterfloods to the north and east and would meet lease line agreement obligations with the operator on the east by conversion of the following wells to water injection:

Well Number & Lease	Location
1-Lea "D"	NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 26
3-Lea "D"	SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 26
6-Lea "D"	NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 26

The plan for operating the above described waterflood project as proposed in the application is satisfactory to this office and hereby approved subject to approval by the New Mexico Oil Conservation Commission and the following:

1. This project will be operated in compliance with the New Mexico Oil Conservation Commission regulations governing waterflood operations.
2. Duplicate copies of a monthly progress report (N.M.O.C.C. form C-120 acceptable) are to be submitted to this office showing the volume of water injected and average pressure for the injection wells and production for the producing wells in the project area.

3. The approval does not preclude the necessity for further approval when the project is expanded to include other wells and leases or the necessity to submit the usual notices and reports on wells involved.

Sincerely yours,



James A. Knauf
District Engineer

cc:
N.M.O.C.C., Santa Fe
Roswell
File
Accounts

RLBeekman:ih 11/24/69



TELEPHONE: HOBB5-093-6715
BEFORE EXAMINER NUTTER
CONSERVATION COMMISSION
EXHIBIT NO. *K*
4338
UNITED CHEMICAL CORPORATION
OF NEW MEXICO
601 NORTH LEECH P. O. BOX 1499
HOBB5, NEW MEXICO 88240

Company Skelly Oil Company
Field Grayburg-Jackson
Lease Plant #1 Sampling Date 8/1/69
Type of Sample Fresh Water Supply

WATER ANALYSIS

IONIC FORM	me/l *	mg/l *
Calcium (Ca++)	2.50	50
Magnesium (Mg++)	1.07	13
Sodium (Na+) Calculated	2.44	56
Iron		0
Bicarbonate (HCO ₃)	3.70	225
Carbonate (CO ₃ -)	NOT	FOUND
Hydroxide (OH-)	NOT	FOUND
Sulphate (SO ₄ -)	0.90	43
Chloride (Cl-)	1.41	50
Dissolved oxygen @ 69° F.		4.4
7.5 ph @ 68° F		
Dissolved Solids on Evap. at 103° - 105° C		
Hardness as Ca CO ₃	3.57	179
Carbonate Hardness as CaCO ₃ (temporary)	3.70	185
Non-Carbonate Hardness as CaCO ₃ (permanent)	-	-
Alkalinity as CaCO ₃	3.70	185
Specific Gravity @ 68° F	1.000	

* mg/l = milligrams per Liter
* me/l = milliequivalents per Liter

Calcium carbonate scaling index = Positive @ 30°C and 40°C
Calcium sulfate scaling index = Negative

~~~~~ Makes Water Work ~~~~~



# SKELLY OIL COMPANY

P. O. BOX 1650

TULSA, OKLAHOMA 74102

LAW DEPARTMENT  
RONALD J. JACOBS  
ATTORNEY

March 25, 1970

Mr. A. L. Porter, Jr.  
Oil Conservation Commission  
P.O. Box 2088  
Santa Fe, New Mexico

Dear Sir:

On March 17, 1970 our field office filed an application for permission to waterflood our Lea D lease in Section 26-Township 17S-Range 31E, Eddy County in the Jackson Grayburg Pool.

Supplementing that application we are by carbon copy notifying interested parties as required by the procedural rules of our proposal to convert Wells Nos. 1, 3, and 6 on our Lea D lease for injection purposes into the Grayburg Jackson Pool.

When I discussed this matter with Mr. Hatch regarding the compliance with Rule 1203 he advised that this application was set for hearing on April 15 at Hobbs, New Mexico.

Very truly yours,

*George W. Selinger*  
George W. Selinger

c.c. Hudson & Hudson  
Booker Bldg  
Artesia, New Mexico 88210

Maxwell Oil Co.  
Security Nat'l Bk Bldg  
Roswell, New Mexico 88201

A. B. Cary  
Skelly Oil Co.  
Midland, Texas.

*file - Case 4338*



# SKELLY OIL COMPANY

EXPLORATION & PRODUCTION DEPARTMENT  
WEST CENTRAL DISTRICT

March 17, 1970

P. L. NUNLEY, PRODUCTION MANAGER  
B. A. STRICKLING, OPERATIONS SUPERINTENDENT  
C. J. LOVE, DISTRICT ENGINEER  
F. J. PETRO, DISTRICT PRODUCTION ENGINEER  
J. D. MCCLAIN, DISTRICT RESERVOIR ENGINEER

ADDRESS REPLY TO:  
P. O. BOX 1351  
MIDLAND, TEXAS 79701

*2-4338*

Mr. A. L. Porter, Jr.  
Secretary-Director  
Oil Conservation Commission  
P. O. Box 2088  
Santa Fe, New Mexico 37501

Dear Mr. Porter:

Attached are original and four copies of our application for permission to waterflood our Lea "D" Lease.

Please set this matter down for hearing, before an Examiner, scheduled April 15, 1970.

Very truly yours,

*George W. Nunley*  
P. L. Nunley  
District Production Manager

BOB/df  
Attachments

DOCKET MAILED

Date \_\_\_\_\_

BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION )  
 OF SKELLY OIL COMPANY FOR AN ORDER )  
 TO ALLOW WATERFLOODING OF THE ENTIRE )  
 GRAYBURG JACKSON POOL INTERVAL, )  
 UNDERLYING THE LEA "D" LEASE, PERMIT )  
 INJECTION INTO THREE WELLS, PERMIT )  
 ADMINISTRATIVE EXPANSION OF THE )  
 PROJECT AREA )

CASE NO. 4337  
 FILED 1938  
 HEARING 1938

APPLICATION

Comes now Skelly and alleges and states:

1. That it is the operator of the Lea "D" Lease, which is described as all except N/2 of NW/4, of Section 26, T17S, R31E, Eddy County, New Mexico.
2. That Skelly Oil Company proposes to waterflood the Lea "D" Lease and respectfully requests an order allowing: (a) Injection into the following wells:

| Well No. | Location |         |
|----------|----------|---------|
|          | Unit     | Section |
| 1        | B        | 26      |
| 3        | H        | 26      |
| 6        | J        | 26      |

all in Township 17 South, Range 31 East, Eddy County, New Mexico, (b) injection into the interval defined by the Commission as the vertical limits of the Grayburg-Jackson Pool, (c) expansion of the project area to include additional wells within the Lea "D" Lease boundary by Administrative Approval, (d) selective injection into various zones within the defined vertical limits of the Grayburg-Jackson Pool interval.

3. The wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells and that additional oil will be recovered by waterflooding that otherwise would be unrecoverable.
4. That attached hereto and made a part hereof, are; Exhibit "A", which is a plat showing the proposed injection wells, the location of all other wells and leases within a two mile radius of the proposed injection wells along with the formation from which the wells produce; Exhibit "B", which are diagrammatic sketches showing all pertinent information to the downhole completion of the three injection wells; Exhibit "C", which is a well data summary showing completion information on all wells in the project area; Exhibit "D", which are copies of logs on the three injection wells; Exhibit "E", which is a lease production decline curve showing the state of depletion of the wells; Exhibit "F", which is a letter of approval of the project from the USGS; Exhibit "G", which is an analysis of the water to be injected.

WHEREFORE, PREMISES CONSIDERED, Applicant prays that this Commission set down this matter for hearing, that notice hereof be given as required by law, that at conclusion of said hearing based on the evidence adduced, enter its order as requested in Paragraph Two above and for such other orders, rules and regulations as may be necessary in the premises.

Respectfully submitted,

Skelly Oil Company

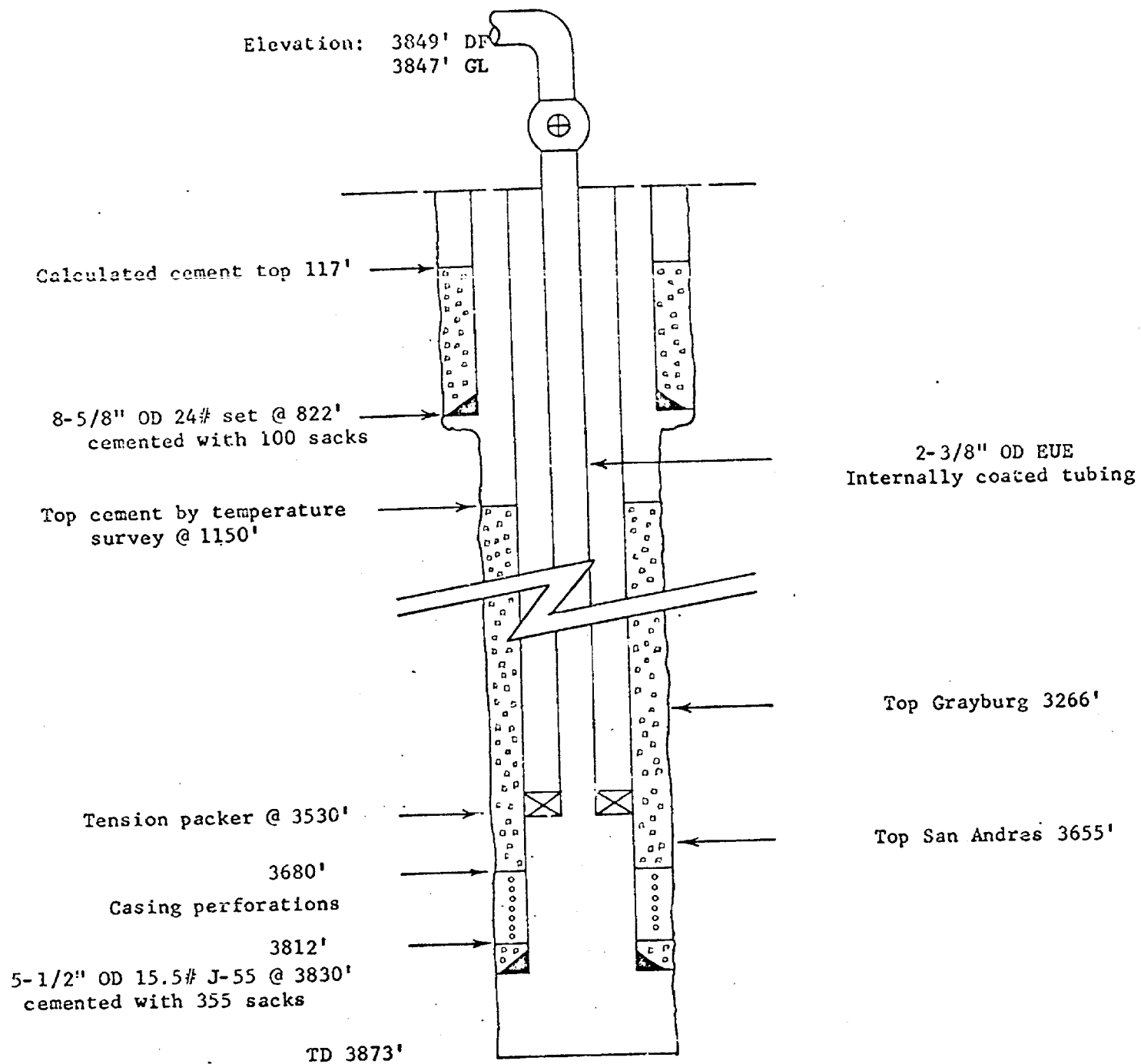
P. O. Box 1351  
 Midland, Texas 79701

Of Counsel:  
 Mr. L. C. White  
 White, Gilbert, Koch & Kelly  
 P. O. Box 187  
 Santa Fe, New Mexico

*George W. Helinger, Atty*  
*by George Hatch, Atty*

DIAGRAMMATIC SKETCH  
 Skelly Oil Company  
 Lea "D" No. 1  
 660' FNL 1980' FEL  
 Section 26-T17S-R31E  
 Eddy County, New Mexico

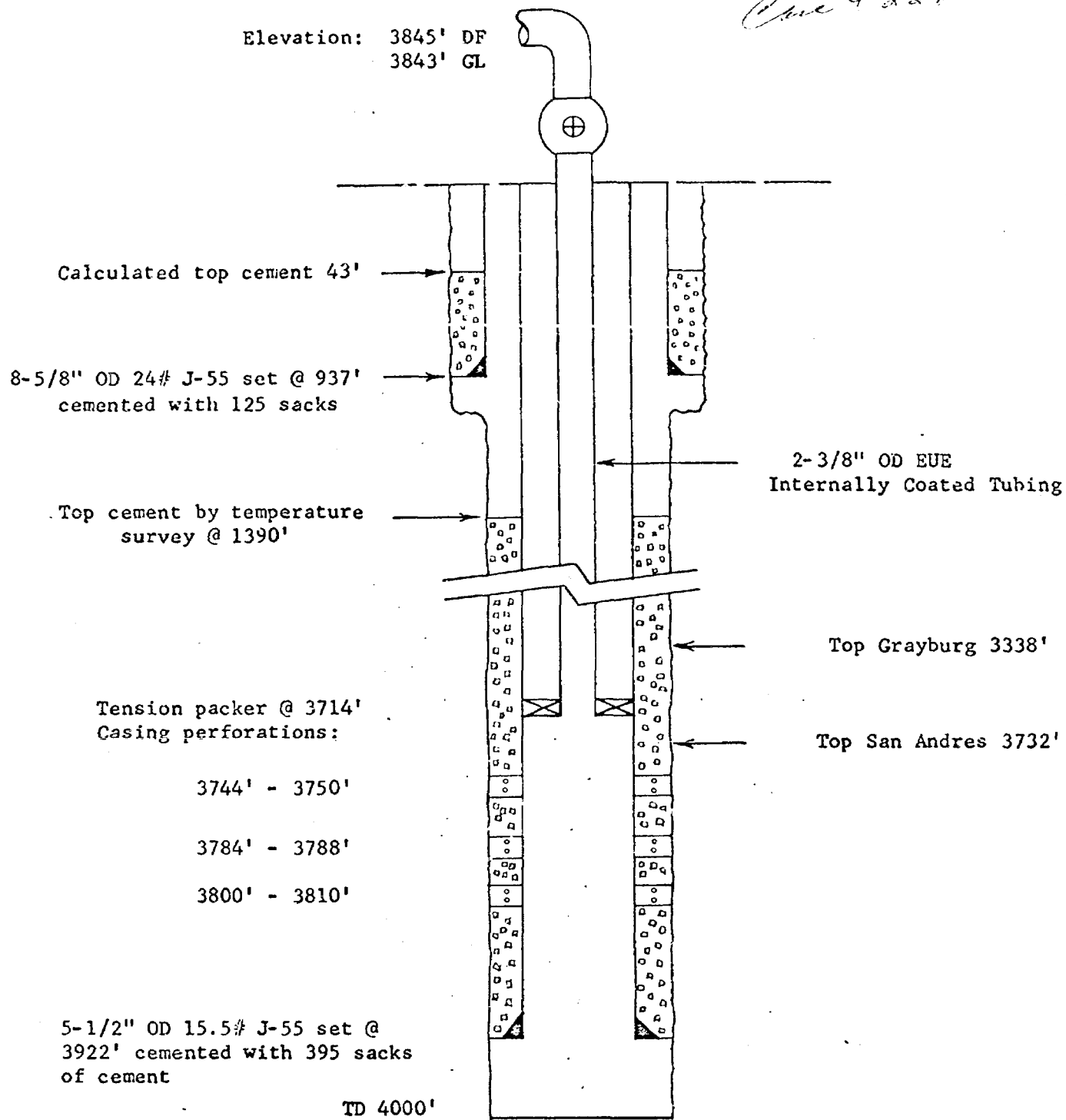
*Case 4338*



DIAGRAMMATIC SKETCH  
 Skelly Oil Company  
 Lea "D" No. 3  
 1980' FNL 660' FEL  
 Sec. 26-T17S-R31E  
 Eddy County, New Mexico

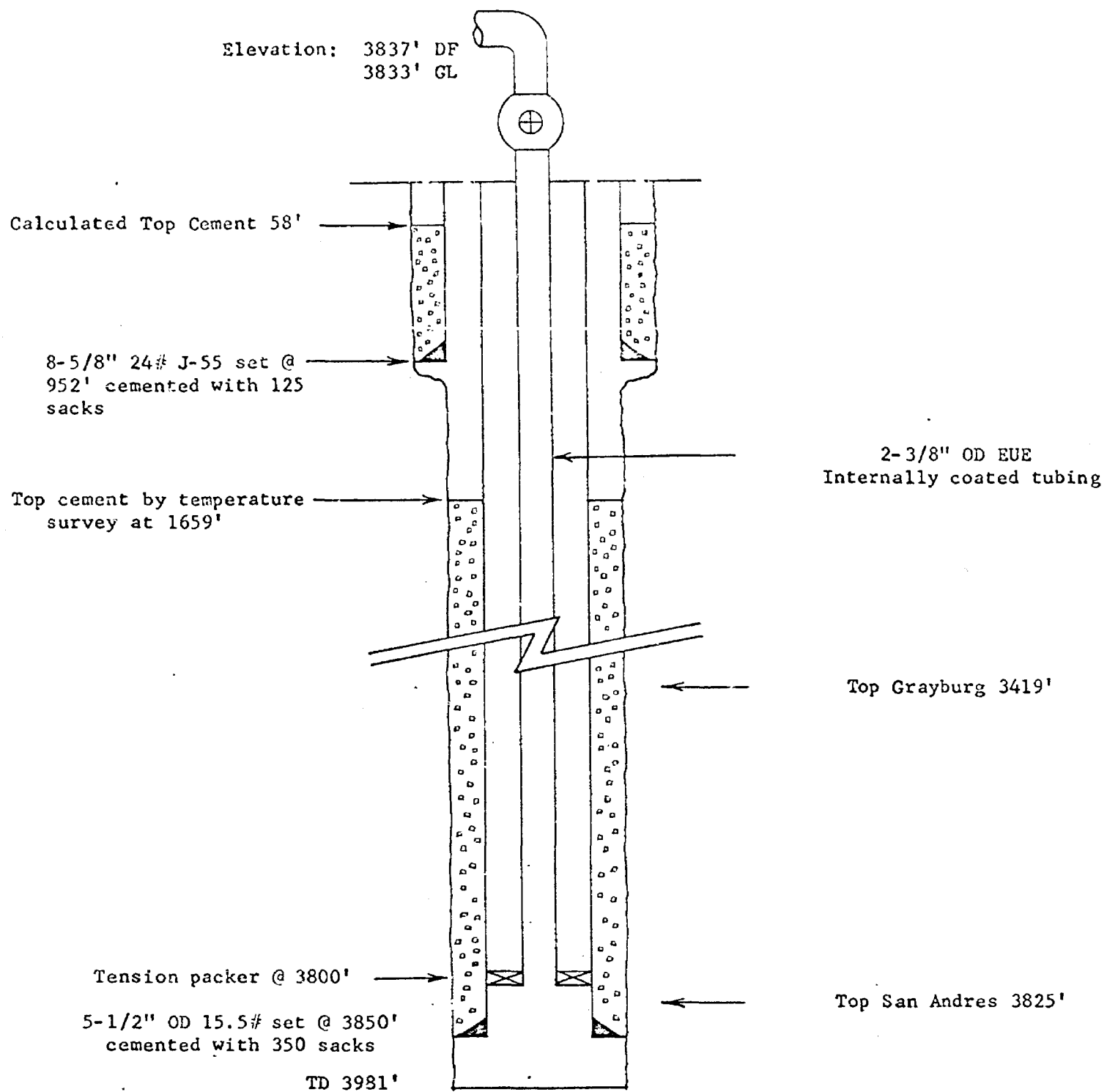
*Cave 4328*

Elevation: 3845' DF  
 3843' GL





DIAGRAMMATIC SKETCH  
Skelly Oil Company  
Lea "D" No. 6  
1980' FSL 1980' FEL  
Section 26-T17S-R31E  
Eddy County, New Mexico



Case 4328

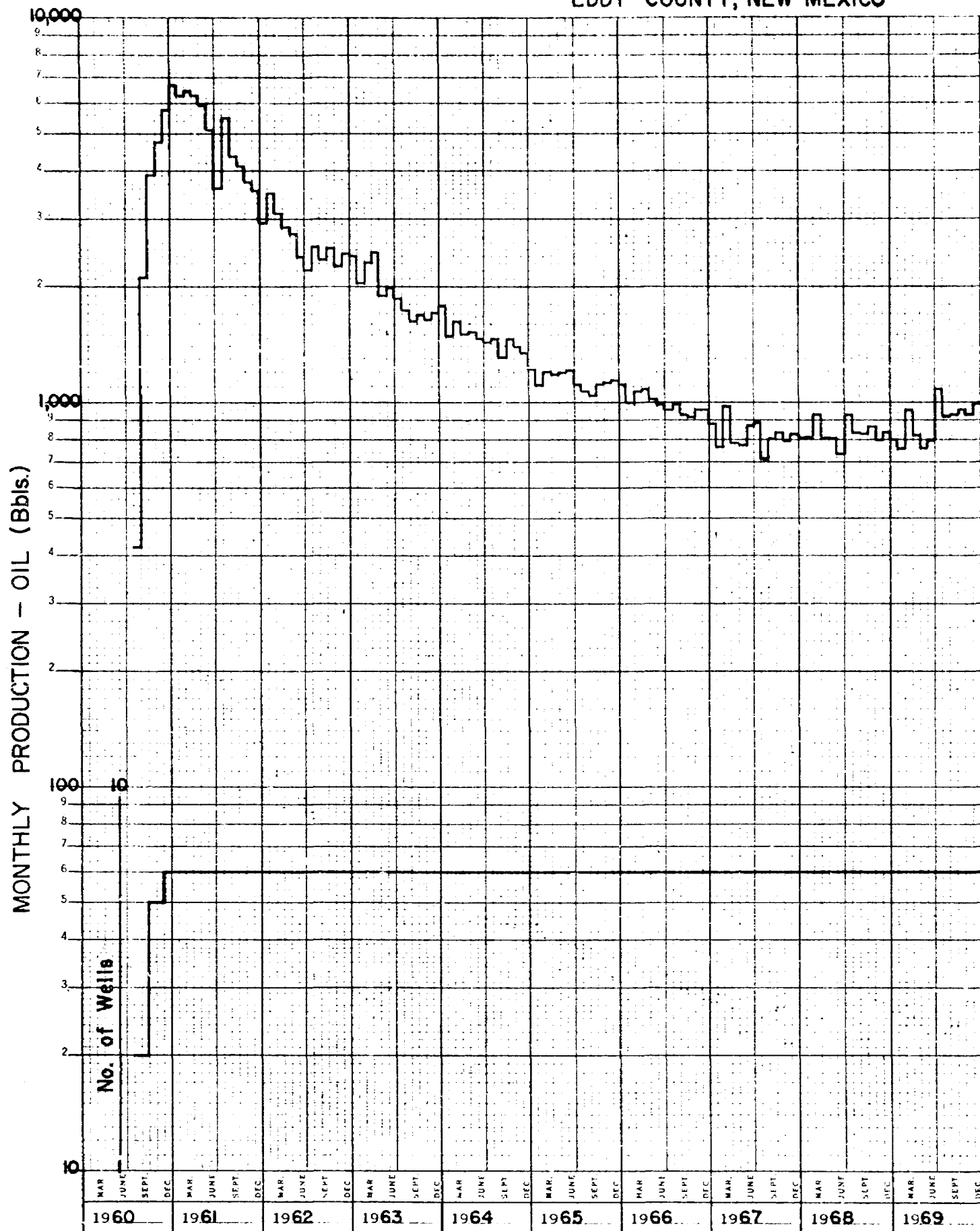
SKELLY OIL COMPANY  
Well Data Summary  
Lea "D" Lease  
Eddy County, New Mexico

Case 4338

| Well No. | Casing Program                                                                           | Total Depth | Date Completed | Completion Data                                                                                                                                 | Present Producing Interval | Producing Rate Initial          | Producing Rate Current | Cum. Prod. to 1/1/70                 | Planned Project Status | Additional Work Planned                  |
|----------|------------------------------------------------------------------------------------------|-------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------|------------------------|--------------------------------------|------------------------|------------------------------------------|
| 1        | 8-5/8"-822' 100 sacks<br>5-1/2"-3830' 355 sacks Top<br>cmt. outside 5-1/2" at 1150'      | 3873'       | 8-17-60        | Fraced 3830'-3873' OH with<br>750 bbl LO 60,000# sand                                                                                           | 3830'-3873'                | 319 BOPD<br>& 7 BWPD<br>flowing | 8 BOPD                 | 32,297 BO<br>34,523 MCF<br>889 BW    | Injection              | Perforate &<br>acidize 3680'<br>to 3812' |
| 2        | 8-5/8"-837' 100 sacks<br>5-1/2"-3863' 385 sacks<br>Top cement outside 5-1/2"<br>at 1571' | 3930'       | 8-22-60        | Fraced 3863'-3930 OH with<br>425 bbl LO 40,000# sand.<br>Plugged back to 3836'.<br>Fraced 3584'-3805' perfs<br>with 1355 bbls LO & 88,000 sand. | 3584'-3805'                | 325 BOPD<br>flowing             | 7 BOPD                 | 37,353 BO<br>60,194 MCF<br>118 BW    | Producer               | Remove plug &<br>clean out               |
| 3        | 8-5/8"-937' 125 sacks<br>5-1/2"-3922' 395 sacks<br>Top cement outside 5-1/2"<br>at 1390' | 4000'       | 10-7-60        | Plugged back to 3870'<br>Fraced 3744'-3810' perfs with<br>1432 bbl LO 52,000# sand                                                              | 3744'-3810'                | 299 BOPD<br>flowing             | 2 BOPD                 | 25,276 BO<br>117,249 MCF<br>306 BW   | Injection              | Remove plug &<br>clean out               |
| 4        | 8-5/8"-901' 100 sacks<br>5-1/2"-3737' 285 sacks<br>Top cement outside 5-1/2"<br>at 1889' | 3860'       | 9-23-60        | Fraced 3737'-3860' OH with<br>1371 bbls LO 60,000# sand                                                                                         | 3737'-3860'                | 362 BOPD<br>flowing             | 6 BOPD                 | 42,596 BO<br>36,258 MCF<br>344 BW    | Producer               | Deepen to 3940'                          |
| 5        | 8-5/8"-978' 125 sacks<br>5-1/2"-3811' 395 sacks<br>Top cement outside 5-1/2"<br>at 1490' | 3951'       | 10-22-60       | Fraced 3811'-3951' OH with<br>1500 bbl LO 60,000# sand                                                                                          | 3811'-3951'                | 406 BOPD<br>flowing             | 6 BOPD                 | 42,867 BO<br>92,982 MCF<br>128 BW    | Producer               | None                                     |
| 6        | 8-5/8"-952' 125 sacks<br>5-1/2"-3850' 350 sacks<br>Top cement outside 5-1/2"<br>at 1659' | 3981'       | 12-4-60        | Fraced 3850'-3981' OH with<br>1400 bbl LO 50,000# sand                                                                                          | 3850'-3981'                | 45 BOPD<br>25 BWPD<br>flowing   | 3 BOPD                 | 22,513 BO<br>51,122 MCF<br>12,828 BW | Injection              | None                                     |

NOTE: All cement tops are by temperature survey.

SKELLY OIL COMPANY  
LEA "D" LEASE  
EDDY COUNTY, NEW MEXICO



Case 4-528



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

P. O. Drawer U  
Artesia, New Mexico 88210

SMITHSONIAN INSTITUTION  
EXPLORATION DIVISION  
1001 20th Street  
WEST CENTRAL DISTRICT

November 24, 1969

Skelly Oil Company  
Post Office Box 1351  
Midland, Texas 79701

Gentlemen:

Your letter of November 18, 1969 requests approval to operate a waterflood of the Grayburg-San Andres formation on that portion of oil and gas lease Las Cruces 029418(b) described as follows:

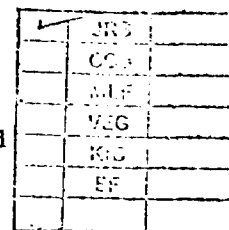
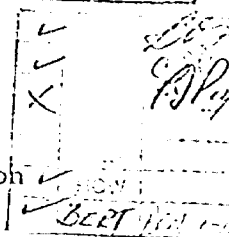
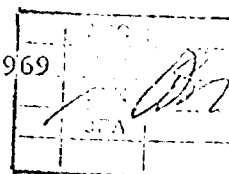
T. 17 S., R. 31 E., N.M.P.M., Eddy County, New Mexico  
sec. 26: S $\frac{1}{2}$ , S $\frac{1}{2}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$

The flood pattern would be an 80-acre 5-spot which would be a continuation of the pattern of the waterfloods to the north and east and would meet lease line agreement obligations with the operator on the east by conversion of the following wells to water injection:

| <u>Well Number &amp; Lease</u> | <u>Location</u>                           |
|--------------------------------|-------------------------------------------|
| 1-Lea "D"                      | NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 26 |
| 3-Lea "D"                      | SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 26 |
| 6-Lea "D"                      | NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 26 |

The plan for operating the above described waterflood project as proposed in the application is satisfactory to this office and hereby approved subject to approval by the New Mexico Oil Conservation Commission and the following:

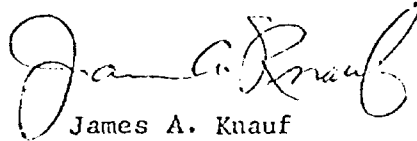
1. This project will be operated in compliance with the New Mexico Oil Conservation Commission regulations governing waterflood operations.
2. Duplicate copies of a monthly progress report (N.M.O.C.C. form C-120 acceptable) are to be submitted to this office showing the volume of water injected and average pressure for the injection wells and production for the producing wells in the project area.



Case 4330

3. The approval does not preclude the necessity for further approval when the project is expanded to include other wells and leases or the necessity to submit the usual notices and reports on wells involved.

Sincerely yours,

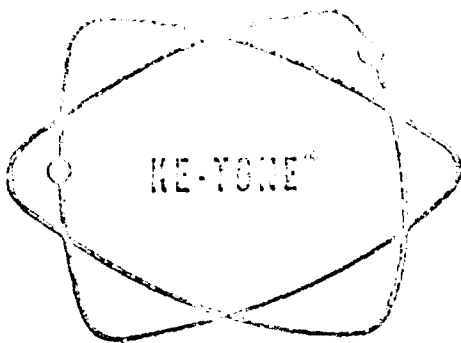


James A. Knauf  
District Engineer

cc:  
N.M.O.C.C., Santa Fe  
Roswell  
File  
Accounts

RLBeckman:ih 11/24/69

Case 4338



UNITED CHEMICAL CORPORATION  
OF NEW MEXICO

601 NORTH LEECH

P. O. BOX 1499

HOBBS, NEW MEXICO 88240

Company Skelly Oil Company

Field Grayburg-Jackson

Lease Plant #1 Sampling Date 8/1/69

Type of Sample Fresh Water Supply

WATER ANALYSIS

| IONIC FORM                                              | me/l * | mg/l * |
|---------------------------------------------------------|--------|--------|
| Calcium (Ca++)                                          | 2.50   | 50     |
| Magnesium (Mg++)                                        | 1.07   | 13     |
| Sodium (Na+) Calculated                                 | 2.44   | 56     |
| Iron                                                    |        | 0      |
| Bicarbonate (HCO <sub>3</sub> )                         | 3.70   | 225    |
| Carbonate (CO <sub>3</sub> -)                           | NOT    | FOUND  |
| Hydroxide (OH-)                                         | NOT    | FOUND  |
| Sulphate (SO <sub>4</sub> -)                            | 0.90   | 43     |
| Chloride (Cl-)                                          | 1.41   | 50     |
| Dissolved oxygen @ 69 F.                                |        | 4.4    |
| 7.5 ph @ 68 °F                                          |        |        |
| Dissolved Solids on Evap. at 103° - 105° C              |        |        |
| Hardness as Ca CO <sub>3</sub>                          | 3.57   | 179    |
| Carbonate Hardness as CaCO <sub>3</sub> (temporary)     | 3.70   | 185    |
| Non-Carbonate Hardness as CaCO <sub>3</sub> (permanent) | -      | -      |
| Alkalinity as CaCO <sub>3</sub>                         | 3.70   | 185    |
| Specific Gravity @ 68° F                                | 1.000  |        |

\* mg/l = milligrams per Liter

\* me/l = milliequivalents per Liter

Calcium carbonate scaling index = Positive @ 30°C and 40°C

Calcium sulfate scaling index = Negative

*Calc 4338*

~~~~~ *Makes Water Work* ~~~~~

DRAFT

GMH/esr

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:

*See-
Spec Str
Am*

CASE No. 4338

Order No. R- 3952

Am

APPLICATION OF SKELLY OIL COMPANY
FOR A WATERFLOOD PROJECT, EDDY COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 15, 1970,
at Hobbs, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this _____ day of April, 1970, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, 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, Skelly Oil Company, seeks permis-
sion to institute a waterflood project on its Lea "D" Lease,
Grayburg-Jackson Pool, by ~~selective~~ *the* injection of water into
~~the San Andres zone~~ *the San Andres zone* of the Grayburg-Jackson Pool through three injec-
tion wells located in Units B, H, and J of Section 26, Township
17 South, Range 31 East, NMPM, Eddy County, New Mexico.

(3) That the applicant further seeks an administrative
procedure whereby said project could be expanded to include
additional injection wells in the area of the said project as
may be necessary in order to complete an efficient injection
pattern; that said administrative procedure should provide for
administrative approval for conversion to water injection in
exception to the well response requirements of Rule 701 E-5
of the Commission Rules and Regulations.

(SEE UNDER)

(6) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations; provided, however, that the showing of well response as required by Rule 701 E-5 shall not be necessary before obtaining administrative approval for the conversion of additional wells to water injection.

IT IS THEREFORE ORDERED:

(1) That the applicant, Skelly Oil Company,
is hereby authorized to institute a waterflood project ~~in the~~ on its
Lea "D" Lease, ~~Unit XXXX~~ Grayburg-Jackson Pool,
by the injection of water into the San Andres formation
Section 26,
through the following-described wells in/Township 17
~~North~~ South, Range 31 ~~West~~ East, NMPM, Eddy
County, New Mexico:

Lea "D" Well No. 1 - unit B
Lea "D" Well No. 3 - unit H
Lea "D" Well No. 6 - unit J

(2) That the subject waterflood project is hereby designated
the Skelly Grayburg-Jackson Lea "D" Waterflood Project and shall
be governed by the provisions of Rules 701, 702, and 703 of the
Commission Rules and Regulations ;

PROVIDED HOWEVER, that the Secretary-Director of the Commis-
sion may approve expansion of the Skelly Grayburg-Jackson Lea "D"
Waterflood Project to include such additional injection wells in
the area of said project as may be necessary to complete an
efficient water injection pattern; that the showing of well
response as required by Rule 701 E-5 shall not be necessary
before obtaining administrative approval for the conversion of
additional wells to water injection.

(SEE UNDER)

-----, on the day of 1944, hereby
designated.