

Case Number

44/5

Application
Transcripts.

Small Exhibits

ETC.

EXAMINER HEARING

Case No. 4415

TRANSCRIPT OF HEARING

DEARNLEY-MEIER REPORTING SERVICE

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE

NEW MEXICO

Hearing Date

SEPTEMBER 2, 1970

TIME: 9 A.M.

NAME	REPRESENTING	LOCATION
John F. Russell	Texas-Pacific	Roswell
Omer Roberts	Texas-Pacific	Midland
John M. Strader	Depco	Denver
Milton C. Smith	Depco	Odessa, Texas
Boyer Kelly	Pepco - white hills 1000	S F
Jason Kellahin	Kellahin & Fox	Santa Fe
J. H. Hoover	Gulf Oil Corp	Roswell N.M.
W. V. Kestler	✓	✓
J. L. Hutchison	✓	✓
Anna L. D. D. D.	PW Kestler	Santa Fe
Orlando Brewer	H. C. Thompson	Odessa Texas
Don Billings	Don Billings	Midland Tex
I. E. Koch	M & F	Midland, Texas
Ross D. Roberts	Major, Gichel & Feuster	Midland Texas
R. J. D. D.	Phillips	Odessa

MR. HATCH: Case 4415: Application of Depco, Inc., for a waterflood project, Eddy County, New Mexico. Applicant in the above styled cause, seeks authority to institute a waterflood project by injection into the Grayburg and San Andres formations through 6 wells location in Sections 27, 33 and 34, Township 18 South, Range 28 East, Artesia Pool, Eddy County, New Mexico.

MR. KELLY: William Booker Kelly. I have one witness and ask that he be sworn.

(Witness was sworn)

JOHN STRADER,

the witness, having been first duly sworn upon his oath, according to law testified as follows:

DIRECT EXAMINATION

BY MR. KELLY:

Q For the record would you state your full name and your position with Depco and your address.

A John Strader. I am the Chief Engineer for Depco, Inc., Denver, Colorado.

Q And have you previously qualified as an expert witness in the field of petroleum engineering before this Commission?

A Yes, in Case 37 and 47.

Q Would you refer to what has been marked Exhibit No. 1 and briefly state what Depco seeks by this application?

A Depco seeks to establish an 840 acre waterflood project in the Artesia Field, in a portion of Sections 22, 23, 27, 33 and 34 in Township 18 South, Range 28 East, in Eddy County, New Mexico. Depco also seeks to convert State 647 Lease, Well Nos. 92, 100, 207 and 217 to water injection wells.

MR. UTZ: Sir, do you have a list of those wells?

THE WITNESS: Yes, Sir.

MR. UTZ: In this exhibit?

THE WITNESS: Yes, Sir.

Q That is exhibits 3 A, B, C & D. Do they show the footage?

A Yes.

Q A, B, C, D, & E -- there are five of them altogether. That is in the sketch?

A Yes. That is exhibit 3. The injection interval will be covered later.

MR. UTZ: I want to check your testimony here.

THE WITNESS: In the original application we asked that well No. 90 also be approved for conversion to water injection, but we no longer ask for that.

Q You filed an amended application with the amended plat deleting that well, is that correct?

A That is correct.

MR. UTZ: Is it in here?

MR. HATCH: Yes, I think so.

MR. UTZ: You still got it listed.

THE WITNESS: Well No. 90?

MR. UTZ: Yes. Alright now, your State Lease 647, what number wells did you testify there you wanted to change? I will change them on the application.

THE WITNESS: We will convert Well No. 92, 100, 207 and 217.

MR. UTZ: And our State E 1288?

THE WITNESS: That well is not to be converted to injection.

MR. UTZ: How many wells are you making application for all together?

THE WITNESS: Four wells and to change the status of Well No. 82 from a salt water disposal classification to a waterflood injector.

Q Do you have the Order Number on that last well?

MR. UTZ: That is 3454, I guess.

THE WITNESS: that is correct.

MR. UTZ: O. K. You may proceed.

THE WITNESS: These wells are shown on Exhibit 1 which is a plat of the area. The wells to be converted are noted in red. The salt water disposal well is noted by a triangle colored blue.

Q Now, your waterflood project is outlined in broken

lines, is that correct?

A That is correct.

MR. KELLY: Does the Examiner want a more thorough description of the project area in the testimony?

MR. HATCH: No. The project area will be determined from this.

Q Alright. Would you identify what else is shown on Exhibit 1?

MR. HATCH: May I interrupt you a moment? It looks like the project area would not be outlined here.

MR. KELLY: Because of probably the acreage over in Section 20.

MR. HATCH: I believe it would be too far away in offsetting injection production wells, wouldn't it?

THE WITNESS: That is right. That is the Northwest Quarter of the Northeast Quarter of Section 33.

MR. UTZ: You understand how the project area is?

THE WITNESS: Yes.

Q Actually then -- I didn't see this application, but we would like to have approval for administrative expansion without showing response, is that correct?

A Yes.

Q Alright. What else is shown on Exhibit 1?

A Exhibit 1 shows all wells within a radius of two miles. Shown here are several waterfloods in this area. The

D & E Allen, which is the west offset lease, is involved, is a Loco Hills flood. Also a Loco Hills flood is American Petrofina Flood No. 2, which offsets our project to the west. A Collier Coop a mile and a half northwest is a waterflood in the primary. The Ryder Scott Depco Coop, a mile and a half northeast. There is an abandoned Depco waterflood a mile and a half south which is in the Grayburg. There are no San Andres waterfloods within this two mile radius.

Q Now, you were going to flood the San Andres and Grayburg by this application, is that right?

A That is correct. The San Andres wells are wells completed in the San Andres, are noted on the plat with a circle.

Q Now, how many producing wells do you have in the project area?

A Twenty two. There are twenty one producing wells and one salt water disposal at the present time.

Q What is the ownership status under your project?

A Depco is the operator of all leases involved in the project area. There are two leases, the State 647 Lease and the State E 1288 Lease. The State 647 Lease is divided into three accounts due to slight differences in the net interests.

Q Now, can you give the Examiner a brief summary of the geology under this project?

A The San Andres trend, which is the primary objective

for the waterflood project, is a long narrow trend extending six miles to the northeast and to the Grayburg Jackson Field. The dip is to the east southeast, although it is erratic and varies in depth. The oil water contact is the principle factor limiting the field to the south and the east. Loss in permeability limits the pool to the northwest. This is solution gas drive pool.

Q Alright now, referring to what has been marked Exhibit No. 2 with four parts, A, B, C and D -- the logs -- would you point out the significant features in those exhibits. These are logs of the four injection wells and not the presently approved salt water injection well, is that right?

A That is correct. Exhibit 2 A through 2 D are radioactive logs over the Grayburg and San Andres formations. The top of the San Andres is marked on each log.

Q And Exhibit 3 A, B, C, D and E is diagramatic sketches of all the proposed injection wells, is that correct?

A That is correct. These exhibits show hole size casing programs, cement tops, proposed tubing and packer depth and completion intervals. Exhibit 3 A is a diagramatic sketch of State 647 account 711 Well No. 82. This well is in the Southeast Quarter of the Northwest Quarter of Section 27. The injection interval --

Q That is the one in blue?

A That is right. That is salt water disposal well and

the injection interval is 2471 to 2926.

Q Now, the diagram you show on Exhibit 3 A is the present installation in that well, is that right?

A That is correct.

Q Alright.

A Exhibit 3 B, State 647 account 711 Well No. 92, in the Northeast Quarter of the Northwest Quarter of Section 27; the injection interval is 2720 to 2820.

Q Alright.

A State 647 account 711 Well No. 100 is the Northeast Quarter of the Northeast Quarter of Section 27; the injection interval is 2450 to 2920.

Exhibit 3 D, State 647 Account 721 Well No. 207, in the Northeast Quarter of the Southeast Quarter, Section 33; the intended injection interval is 2696 to 2786.

Q Now, all of these wells have plastic coated tubing?

A They will.

Q And I notice on -- I think it is 3 B and 3 E -- that you have some perforations above your packer. How are you going to handle avoiding any migration in those wells?

A Migration upward will be monitored by putting a pressure gauge on the casing annulus and if it is determined that we do have pressure on the casing annulus, at that time the perforations will be squeezed with cement.

Q Now, in your other wells you will fill your annulus

with some kind of a pressure gauge?

A We will.

Q What is the source of your water injection?

A We intend to purchase water from Double Eagle Water Corporation.

Q And that could be under the contract either fresh or salt water?

A We have a contract in effect now that calls for either brackish or fresh water.

Q I take it the produced water that is going in the existing salt water well is not sufficient for the flood?

A Yes. That is correct.

Q Do you anticipate any corrosion problems?

A No. Our system is protected mechanically.

Q Is there any fresh water near the surface of this area?

A Very little.

Q It is not an appreciable amount?

A That is correct.

Q In your opinion, will the installations you have shown on Exhibits 3 A through E prevent migration of injection fluids to any other zone?

A They will.

Q Now, what is your injection rate now on your Well No.

A Our injection rate at the present time is 130 barrels a day which represents the produced water from the area shown on the Exhibit 1.

Q And are you having any problem to get the well to take that amount?

A No. It is on the vacuum.

Q What do you anticipate your injection will be?

A We anticipate 800 barrels a day.

Q How about pressure?

A At 1400 pounds.

Q And there will be no problem, so far as you know?

A That is correct.

Q Now, going on to Exhibit No. 4, what is the present status of the injection wells, the four injection wells?

A The four injection wells shown in red on Exhibit 1, the average producing rate is 3 barrels of oil per day.

Q And I notice your top producer there, No. 205, is only 12. Would you say that the wells in the project area have reached clearly their advanced stage of depletion?

A They have -- some 90 to 95 percent depleted of primary.

Q Do you have an estimate of about a million barrels of recoverable primary from this pool?

A That is correct.

Q And you have produced about 931,000. Now, do you

have an estimate of what the recovery will be if you get a successful secondary project?

A We anticipate three quarters of a million barrels of recoverable due to waterflood.

Q Is there anything else you want to point out on Exhibit No. 4?

A Shown on Exhibit No. 4 are the completion intervals, the date of completion and stimulation.

Q Now, in your opinion, would the granting of this application allow you to recover hydrocarbons that would otherwise be left in place and thereby protect the correlative rights of all parties in the area?

A That is right.

Q Were Exhibits 1 through 4 prepared by you or under your supervision?

A They were.

MR. KELLY: At this time, I move the introduction of Depco's Exhibits 1 through 4.

MR. UTZ: Without objection, Exhibits 1 through 4 will be entered into the record of this case.

MR. KELLY: We have no further direct testimony.

CROSS EXAMINATION

BY MR. UTZ:

Q Have you received any response from the water you have injected from the No. 82?

A No. The cumulative injection is some 86,000 barrels and we have not filled up this reservoir in the vicinity of this well.

Q What is the surface cement on the No. 92?

A That has been omitted and I will have to -- this well has no surface casing, so far as I know.

Q Now, the top of the cement is at 1500, is that correct?

A The calculated top is at 1500.

Q It is your testimony you have no cement above 1500?

A So far as I know, that is correct.

Q Could you confirm that?

A By letter?

Q Yes.

A I will.

Q If this is true, I am real surprised it has been going on this long.

A There are several wells in this vicinity where permission was granted from the Commission to pull surface casing. These are quite old wells completed in -- this particular well was completed in July of 1948.

Q On the No. 100, the cement you figure is 200 feet from the surface, is that correct?

A On Well No. 100, 1000 feet from the surface on the surface casing, yes, Sir.

Q The same on 207?

A Yes, Sir.

Q Now, you mentioned on your No. 92 that you were going to put pressure up the annulus and if it didn't hold pressure you were going to squeeze the perfs?

A No, Sir. We will monitor the pressure in the annulus with a pressure gauge and at such time that we do get pressure on the casing annulus, we will squeeze the perforations if it is determined that it is not a packer or tubing leak.

Q In other words, you are going at it the other way. You are going to say that you load the annulus. Now, what if it doesn't hold water -- do you intend to load the annulus?

A We will load the annulus. I am sure that it won't hold water to the surface. We will go ahead and convert the well to injection and at such time as we have pressure build up on the annulus, we will squeeze the perforations.

Q And the same is true for the 217?

A That is correct.

Q You are making application here for injection in both the Grayburg and San Andres?

A Yes, Sir.

Q All these wells open in both zones?

A No, Sir. They are all open in the San Andres. This is our primary objective, however, we'd like to have approval to flood the Grayburg as a secondary injector.

Q None of them open in the Grayburg?

A Yes, Sir. Some of them are open in the Grayburg. Well No. 92, these perforations that are presently isolated are in the Grayburg. The same with 217.

Q Which perforation is that -- the ones above the packer?

A Yes.

Q That is Grayburg?

A Yes, Sir.

Q O. K. What other wells?

A 217.

Q Now, are both sets in the upper purse in the Grayburg?

A This is on 217?

Q Yes, Sir.

A No. The only set -- the only perforations that are in the Grayburg are those that are above the packer. This particular well, the top of the San Andres is approximately 2365.

Q Well, I got a note here from our district geologist in Artesia. He says the 82 is open into the Grayburg and San Andres as well as the No. 100. I don't know whether you geologists have got the tops the same or not.

A That is correct. 82, in this salt water disposal application we received approval to inject into the Grayburg and the San Andres and the top of the San Andres is 2490. In

Well No. 100, the top of the San Andres is at 2550 which leaves 50 feet of Grayburg in the open hole section.

Q So in effect you will be injecting in both zones right off the bat, won't you?

A In the wells 82 and 100, the wellbore -- the Grayburg will be subject to injection. In Well No. 82 there is no water going into the Grayburg at the present time.

Q How much Grayburg have you got in No. 82, the whole thing?

A I don't know the top of the Grayburg or the San Andres.

Q You don't have that?

A No, Sir.

Q Do you have anything in the record that would show the area of the two leases, your State 647 and the State E 1288?

A On Exhibit No. 1, except all of the area outlined with a dashed line in State 647 with the exception of the Southwest Quarter of the Northeast Quarter of Section 27, this is a forty acre tract. That is not in the State 647 lease, however, the working interest is common.

Q That is in the E 1288 -- it is marked E 1288?

A Yes. The location is -- the lease name is State E 1288.

Q That is all of the 1288 lease that is in your area?

A No. There is one non-contiguous tract on this lease in Unit GN, Section 22.

Q That is outside of the unit there?

A That is correct.

Q So you'd have forty acres which would be the Southwest of the Northeast Section 27. All the rest of your area is -- that would be in the project area -- is State 647 lease?

A Yes, Sir.

MR. HATCH: I think there is going to be a little problem here because you are probably going to have to waterflood in that project because there are two separate leases. Now we have got a lease without an injection well.

MR. UTZ: Have you contacted the State Land Office yet?

THE WITNESS: No, Sir.

MR. UTZ: I am afraid maybe you should.

MR. KELLY: Why don't we -- can we ask to amend the application to create two floods and then we will contact the State Land Office and be back in touch with you?

MR. UTZ: We'd have to have an injection well.

MR. KELLY: In the second lease?

MR. UTZ: Yes.

THE WITNESS: Can we remove this lease from the project area?

MR. KELLY: That would be the easiest way.

MR. UTZ: I presume you could. Couldn't he?

MR. HATCH: Yes.

THE WITNESS: I would like to do that.

MR. HATCH: It could be left in there and create another one.

THE WITNESS: I'd like to delete it from the project area.

MR. KELLY: We will just move to go ahead and delete that from the tract.

MR. UTZ: Alright. Any other questions of the witness:

Statements in the case?

The witness may be excused. The case will be taken under advisement.

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

I, Peter A. Lumia, Court Reporter, 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.

Peter A. Lumia
Peter A. Lumia, C.S.R.

I do hereby certify that the foregoing is a complete report of the proceedings of the hearing of Case No. 4415 heard by me on 9-20-70.
[Signature]
New Mexico Oil Conservation Commission

I N D E X

WITNESS:

JOHN STRADER

Direct Examination by Mr. Kelly

Cross Examination by Mr. Utz

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EXHIBITS

Depco's
Exhibits 1 thru 4

MARKED

OFFERED AND
ADMITTED

11

OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

March 27, 1978

Leon Standard
Engineer Assistant
Depco, Inc.
800 Central
Odessa, Texas 79760

Case 4415

Re: Commission Order No. R-4027
and WFX-457

Dear Mr. Standard:

After reviewing the step rate test data submitted by your letter of February 20, 1978, it is my determination that a higher injection pressure limitation may be established for your State 647 AC 711 Well No. 93-C, Section 27, Township 18 South, Range 28 East, Camp Waterflood Project, Artesia Pool, Eddy County, New Mexico.

Said pressure limitation is hereby increased to 1100 psi.

Yours very truly,

JOE D. RAMEY
Director

JDR/RLS/fd

C
O
P
Y

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

September 10, 1970

Mr. Booker Kelly
White, Gilbert, Koch & Kelly
Attorneys at Law
Post Office Box 787
Santa Fe, New Mexico

Dear Sir:

Enclosed herewith is Commission Order No. R-4027, entered in Case No. 4415, approving the Depco Camp Artesia Waterflood Project.

Injection is to be through the five authorized water injection wells, with injection to be through plastic-lined tubing set in a packer. Packers shall be set as near as practicable to the uppermost perforation, or, in the case of open-hole completions, as near as practicable to the casing shoe.

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 854 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.

OIL CONSERVATION COMMISSION

P. O. BOX 2058

SANTA FE, NEW MEXICO 87501

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Mr. Booker Kelly
White, Gilbert, Koch & Kelly
Attorneys at Law
Post Office Box 787
Santa Fe, New Mexico

September 10, 1970

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

Enclosures
ALP/DSN/ir

cc: OCC-Hobbs and 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. 4415
Order No. R-4027

APPLICATION OF DEPCO, INC., 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 September 2, 1970,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 10th day of September, 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, Depco, Inc., seeks authority to institute
a waterflood project in the Artesia Pool by the injection of water into
the Grayburg and San Andres formations through five injection wells in
Sections 27, 33, and 34, Township 18 South, Range 28 East, NMPM, Eddy
County, New Mexico.

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

(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.

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CASE No. 4415
Order No. R-4027

(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.

(7) That Order No. R-3454, which previously authorized water injection for disposal into one of the subject wells, should be superseded.

IT IS THEREFORE ORDERED:

(1) That the applicant, Depco, Inc., is hereby authorized to institute a waterflood project in the Artesia Pool by the injection of water into the Grayburg and San Andres formations through the following-described wells in Township 18 South, Range 28 East, NMPM, Eddy County, New Mexico:

Depco State 647 Well No. 100 - Unit A - Section 27
Depco State 647 Well No. 82 - Unit F - Section 27
Depco State 647 Well No. 92 - Unit N - Section 27
Depco State 647 Well No. 207 - Unit I - Section 33
Depco State 647 Well No. 217 - Unit E - Section 34

(2) That the subject waterflood project is hereby designated the Depco Camp Artesia 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 Depco Camp Artesia Waterflood Project on the State 647 Lease to include such additional lands and injection wells in the area of the 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.

(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.

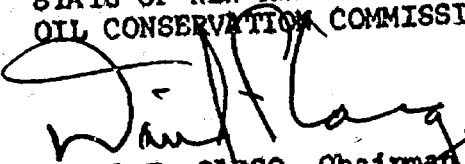
(4) That Order No. R-3454 is hereby superseded.

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


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CASE No. 4415
Order No. R-4027

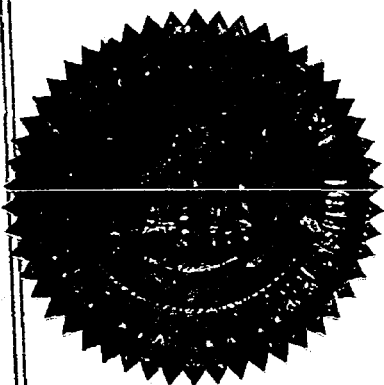
DONE at Santa Fe, New Mexico, on the day and year hereinabove
designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


DAVID F. CARGO, Chairman


ALEX J. ARMIJO, Member


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



esr/

MAILED 17 AUG 1970

17 AUG 1970 AM 8 12

DEPCO, Inc.

PRODUCTION & EXPLORATION

August 14, 1970

file DNB
Case 4415

New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico 87501

Attention: Mr. J. E. Kapteina

Re: Application for Water Injection
Depco's State 647 Lease
Artesia Field
Eddy County, New Mexico

Gentlemen:

In our application dated July 30, 1970 to permit water injection on the subject lease, it was requested that State 647, Acct. 711, Well No. 90 be approved as an injector. We have had a change in plans and no longer wish to convert this well. Our plans for Well No. 92, 100, 207 and 217 remain the same.

Each of the accounts listed below have the same working interest ownership but have slightly different net interests in income.

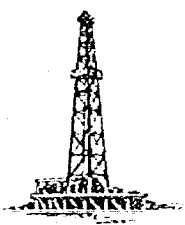
<u>Lease and Account</u>	<u>Wells</u>
State 647, Acct. 711	68, 70, 74 & 82, 83, 84, 85, 86, 87, 89, 90, 92, 93, 100, 101, 200
State 647, Acct. 721	199, 201, 207, 217
State 647, Acct. 731	205
State E-1288 40	81

SWD to H-Group R-3451

Yours very truly,

JMS
J. M. STRADER
Chief Engineer

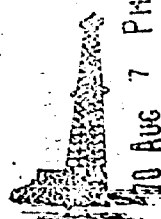
JMS/jer



SFOCC Attn George Hatch

DEPCO, Inc.

Exploration & Production



337-1536

800 Central
ODESSA, TEXAS 79760

July 30, 1970

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

Case 4415

Subject: Application for Injection
of Water
Project: Proposed Camp Waterflood
Field : Artesia
County : Eddy

Gentlemen:

DEPCO, Inc. requests a hearing to approve injection of water into the San Andres pay for the purpose of waterflood operations in the proposed Camp Flood. This project area is shown by the plat, Exhibit 1 and is located in sections 22, 23, 27, 28, 33, and 34, T-18-S, R-28-E, Eddy County, New Mexico.

This application also requests approval to permit producers State 647 Wells No. 90, 92, 100, 207, and 217 to be converted to water injection status. The attached plat also shows the location of the present produced water injector, proposed water injectors, producing wells, and lease ownership within a two-mile radius of the proposed injectors. Exhibit 2 contains logs or portions of logs over the zones of interest for the five (5) proposed injection wells. Also, diagrammatic sketches for these wells are presented in Exhibit 3.

Injection will be into the San Andres pay at an approximate depth of 2700'. Approximately 500 BWPD will be injected into each of the proposed injectors. Water for this project will be purchased from one of the water companies which have distribution facilities in the vicinity.

Very truly yours,

W.C. Smith

W.C. Smith
District Engineer

WCS: mas

Attachments

cc: NMOCC-Artesia
John Strader-Denver
Leon Standard-Artesia

RECEIVED

AUG 6 1970

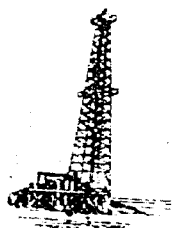
O. C. C.
ARTEZIA, OFFICE

Present water injector #82 is open in both the Grayburg & San Andres for mutations as authorized by Order No R 3454. Inject into open hole from 2471' to 2726'. Top of San Andres about 2520'. Proposed injection well #100 would also be open in Grayburg and San Andres as shown on their exhibits.

8/6/70 Dick

DEPCO, Inc.

Exploration & Production



800 Central
ODESSA, TEXAS 79760

September 4, 1970

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

70 SEP 8 AM 9 15

Attention: Elvis A. Utz

Subject: Confirmation of Well Data
Presented at Commission
Hearing, Case No. 4415
Project: Proposed Camp Waterflood
Field: Artesia
County: Eddy

Gentlemen:

You requested letter confirmation of well conditions in our State 647 Well No. 92 as presented in Exhibit 3-B, at the above subject hearing, and in particular, removal of surface casing. The well conditions presented by Exhibit 3-B at this hearing are correct as 8" surface casing was pulled after 7" casing was cemented on approximately July 29, 1948. Attached is a copy of the New Mexico Oil Conservation Commission Scout Report which also confirms these data. If additional information is desired, we will be most anxious to help furnish it to you. Please feel free to call me collect at Area Code 915 337-1536 Odessa, Texas if any other questions arise.

Yours very truly,

Welton C. Smith

Welton C. Smith
District Engineer

WCS:jm

cc: John Strader - Denver

Types
Application for
Plumbing for approval
of the local health officer

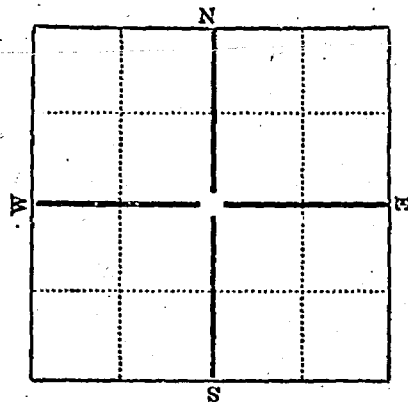
St. Paul
Camp W. F. project
915 - 110

237 - 1536

Address
Mellon Smith
Carpenter

SCOUT REPORT
NEW MEXICO OIL CONSERVATION COMMISSION

Artisig



Company Metro. Reservoir Yatin
 Farm Name State Well No. 92
 Sec. 27 Twp. 18 Range 28 County Eddy
 Feet from Line: N. 990 S. E. 1650 W. 8
 Elevation 3566 Method _____
 Contractor _____
 Spudded 5-11-48 Completed 7-17-48

AMOUNT CASING & CEMENTING RECORD			
Size	Feet	Inches	Sax Cement
<u>8 1/2</u>	<u>6 1/2</u>		<u>set</u>
<u>7 1/2</u>	<u>2720</u>		<u>60</u>

ACID RECORD		TA	TG
Gals.		TX	TSA
<u>1000</u> (1)		TCA	TGI
<u>3000</u>		BX	TYo
<u>4000</u> (21)		TY	TABo
Top Pay <u>2795</u>		TSR	TPenn
		TQ	TOrd

TUBING RECORD	
No. of Quarts	To
<u>2" - 2800</u>	

SHOOTING RECORD		
No. of Quarts	From	To
<u>S/O 2804</u>	<u>S/</u>	<u>S/</u>
<u>S/</u>	<u>S/</u>	<u>S/</u>
<u>S/</u>	<u>S/</u>	<u>S/</u>

Date		Date	
MAY 5	<u>Sec</u>		
MAY 12	<u>"</u>	JUL 7	<u>TD 2874 L. 1st</u>
MAY 19	<u>Dlg. 820 A</u>		<u>A.K. Est 2530</u>
MAY 26	<u>1905 L</u>		<u>A.A. 3000 gal. 1st</u>
MAY 31	<u>2001 L & A</u>	JUL 14	<u>TD 2902 L. 1st</u>
JUN 9	<u>2325 L</u>	JUL 21	<u>TD 2902 L. 1PP</u>
JUN 16	<u>2530 L</u>		<u>4 BOPD</u>
JUN 23	<u>2778 L</u>		
JUN 30	<u>TD 2874 L. Pulled 8"</u>		
	<u>NOC. 7"</u>		

Case 4415

Heard 9-2-70

Rec. 9-4-70

Grant. Deftco permission to convert
5 wells to water injection wells.

Specifically the:

State 647 #82

— — #92

— — #100

— — 207

— — 217

The #82 is now a SWD well as per
R-3454. This order should be rescinded.
All injection shall be thru plastic
coated tubing + under a packer.
The annulus in all cases shall be
filled w/ inert fluid w/ a gauge at
the surface.

Approval injection in both the
Hwy + S.A. in the Artesia pool.
Name - Deftco - Camp flood.

The SWNE (lease E-1258) should
not be put in project area.
~~all that~~ ~~lead~~ the other area is
common ownership.

Thos. A. [Signature]

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. 3800
Order No. R-3454

APPLICATION OF DEPCO, INC.,
FOR SALT WATER DISPOSAL,
EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on July 10, 1968,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 15th day of July, 1968, 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, Depco, Inc., is the owner and oper-
ator of the State 647 Well No. 82, located in Unit F of Section
27, Township 18 South, Range 28 East, NMPM, Artesia Pool, Eddy
County, New Mexico.

(3) That the applicant proposes to utilize said well to
dispose of produced salt water into the Grayburg and San Andres
formations in the open-hole interval from approximately 2471
feet to 2926 feet.

(4) That the injection should be accomplished through
2 3/8-inch internally plastic-coated tubing installed in a
packer set at approximately 2450 feet; that the casing-tubing
annulus should be filled with an inert fluid; and that a pressure

-2-

CASE No. 3800
Order No. R-3454

gauge should be attached to the annulus or the annulus left open at the surface in order to determine leakage in the tubing or packer.

(5) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Depco, Inc., is hereby authorized to utilize its State 647 Well No. 82, located in Unit F of Section 27, Township 18 South, Range 28 East, NMPM, Artesia Pool, Eddy County, New Mexico, to dispose of produced salt water into the Grayburg and San Andres formations, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 2450 feet, with injection in the open-hole interval from approximately 2471 feet to 2926 feet;

PROVIDED HOWEVER, that the tubing shall be internally plastic-coated; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus left open at the surface in order to determine leakage in the tubing or packer.

(2) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

GUYTON B. HAYS, Member

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

S E A L

esr/

Docket No. 20-70

DOCKET: EXAMINER HEARING - WEDNESDAY - SEPTEMBER 2, 1970

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

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

- CASE 4415: Application of Depco, Inc. for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by injection into the Grayburg and San Andres formations through 6 wells located in Sections 27, 33 and 34, Township 18 South, Range 28 East, Artesia Pool, Eddy County, New Mexico.
- CASE 4416: Application of Robert L. Parker Trust for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a cooperative waterflood project in the Langlie-Mattix Pool on its George L. Erwin Lease by the injection of water through its Erwin Well No. 2 located in Unit L of Section 35, Township 24 South, Range 37 East, Lea County, New Mexico.
- CASE 4417: Application of J. Cleo Thompson 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 the applicant's Evans Wells Nos. 9 and 12 located, respectively, in Units A and B of Section 33, Township 16 South, Range 30 East, Square Lake Pool, Eddy County, New Mexico. Applicant seeks authority to dispose of water produced by said wells in unlined surface pits located in the vicinity of said wells.
- CASE 4418: Application of Texas Pacific Oil Company for amendment of Order No. R-3200, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-3200, which order authorized the applicant to institute a waterflood project in the South Eunice Pool, Lea County, New Mexico, by the injection of water through six wells located in Sections 5, 8, and 9 of Township 22 South, Range 36 East. Applicant seeks authority to delete the six wells authorized in said Order R-3200 and substitute therefor six other wells located in said Sections 8 and 9.

September 2, 1970 - Examiner Hearing
-2-

Docket No. 20-70

CASE 4419: Application of Billings, Keyser and Kennedy for a non-standard gas proration unit, Eddy County, New Mexico. Applicant in the above-styled cause, seeks, in exception to Rule 104 B I, approval of a 320-acre non-standard gas proration unit comprising the NW/4 of Section 2 and Lots 1, 2 and 3 and the SE/4 NE/4 of Section 3, Township 22 South, Range 26 East, Eddy County, New Mexico, said unit to be dedicated to a wildcat gas well to be drilled in the NE/4 NE/4 of said Section 3.

CASE 4420: Application of Xplor Company for a dual completion, authority to gas-lift oil production, and to flare gas, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Cleveland Well No. 1 located in Unit G of Section 23, Township 12 South, Range 32 East, Lea County, New Mexico, in such a manner as to produce oil from the East Caprock-Devonian Pool through 2 3/8-inch tubing and gas from the Pennsylvanian formation within one mile of the East Caprock-Pennsylvanian Pool. Applicant further seeks authority to use a portion of said gas to gas-lift said oil production and to subsequently flare said gas in exception to Rule 404 of the Commission Rules and Regulations.

CASE 4421: Application of Phillips Petroleum Company for creation of a new oil pool, special pool rules therefor, and redesignation of the vertical limits of the Ranger Lake-Pennsylvanian Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new pool for the production of oil from the Bough section of the Pennsylvanian formation for its Phillips West Ranger Lake Unit Well No. 1 located in Unit C of Section 26, Township 12 South, Range 34 East, Lea County, New Mexico, and for the promulgation of special rules therefor including a provision for 80-acre spacing and proration units, with vertical limits of said pool to be the interval from sub-sea datum -5671 feet to -6016 feet as found in said Well No. 1. Applicant further seeks the contraction of the vertical limits of the Ranger Lake-Pennsylvanian Pool to that interval from sub-sea datum -6080 feet to -6230 feet as found in its West Ranger Lake Unit Tract 2 Well No. 1 located in Unit P of Section 23, said township and range.

CASE 4422: Application of Atlantic Richfield Company for amendment of Order No. R-3588, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-3588, which order authorized the disposal of produced salt water into the Yates and Seven Rivers formation in the perforated

Case 4422 continued

and open-hole interval from 3110 feet to 3300 feet in the Sinclair ARC Federal Well No. 1 located in Unit O of Section 9, Township 20 South, Range 33 East, West Teas Pool, Lea County, New Mexico. Applicant now seeks authority to dispose into said zones in the interval from 3010 feet to 3300 feet.

CASE 4423: Application of Union Oil Company of California for compulsory pooling, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests down to and including the San Andres formation underlying the N/2NE/4 of Section 20, Township 8 South, Range 38 East, Bluit-San Andres Associated Pool, Roosevelt County, New Mexico. Said acreage to be dedicated to a well to be drilled at an orthodox location in the NW/4 NE/4 of said Section 20. Also to be considered will be the cost of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

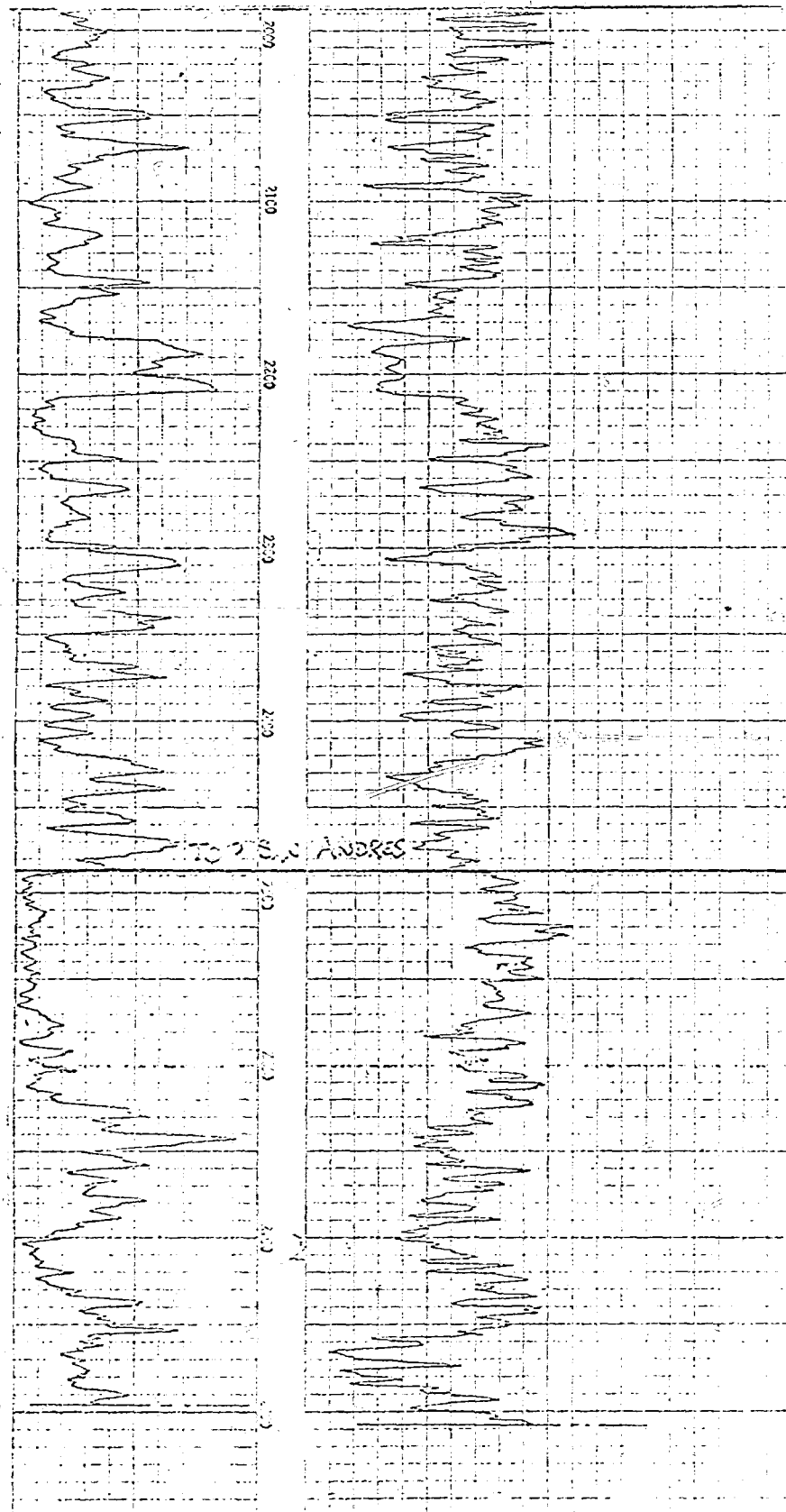
CASE 4410: (Continued from the August 19, 1970 Examiner Hearing) Application of Major, Giebel & Forster for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests underlying the SE/4 of Section 28, Township 25 South, Range 37 East, Crosby-Devonian Pool, Lea County, New Mexico, said acreage to be dedicated to a well to be drilled in said quarter section. Also, to be considered will be the cost of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Depo EXHIBITS NO. 3, A, B, C, D
CASE NO. 9415

LOGS

EXHIBIT 2

WELL RECORD		FROM LOG	
RUN	BIT SIZE	CASING WT.-LB.	FROM WELL RECORD
1	8 5/8"	25	TO 25
2	8 5/8"	25	TO 25
3	8 5/8"	25	TO 25
4	8 5/8"	25	TO 25
5	8 5/8"	25	TO 25
6	8 5/8"	25	TO 25
7	8 5/8"	25	TO 25
8	8 5/8"	25	TO 25
9	8 5/8"	25	TO 25
10	8 5/8"	25	TO 25
11	8 5/8"	25	TO 25
12	8 5/8"	25	TO 25
13	8 5/8"	25	TO 25
14	8 5/8"	25	TO 25
15	8 5/8"	25	TO 25
16	8 5/8"	25	TO 25
17	8 5/8"	25	TO 25
18	8 5/8"	25	TO 25
19	8 5/8"	25	TO 25
20	8 5/8"	25	TO 25
21	8 5/8"	25	TO 25
22	8 5/8"	25	TO 25
23	8 5/8"	25	TO 25
24	8 5/8"	25	TO 25
25	8 5/8"	25	TO 25
26	8 5/8"	25	TO 25
27	8 5/8"	25	TO 25
28	8 5/8"	25	TO 25
29	8 5/8"	25	TO 25
30	8 5/8"	25	TO 25
31	8 5/8"	25	TO 25
32	8 5/8"	25	TO 25
33	8 5/8"	25	TO 25
34	8 5/8"	25	TO 25
35	8 5/8"	25	TO 25
36	8 5/8"	25	TO 25
37	8 5/8"	25	TO 25
38	8 5/8"	25	TO 25
39	8 5/8"	25	TO 25
40	8 5/8"	25	TO 25
41	8 5/8"	25	TO 25
42	8 5/8"	25	TO 25
43	8 5/8"	25	TO 25
44	8 5/8"	25	TO 25
45	8 5/8"	25	TO 25
46	8 5/8"	25	TO 25
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80	8 5/8"	25	TO 25
81	8 5/8"	25	TO 25
82	8 5/8"	25	TO 25
83	8 5/8"	25	TO 25
84	8 5/8"	25	TO 25
85	8 5/8"	25	TO 25
86	8 5/8"	25	TO 25
87	8 5/8"	25	TO 25
88	8 5/8"	25	TO 25
89	8 5/8"	25	TO 25
90	8 5/8"	25	TO 25
91	8 5/8"	25	TO 25
92			



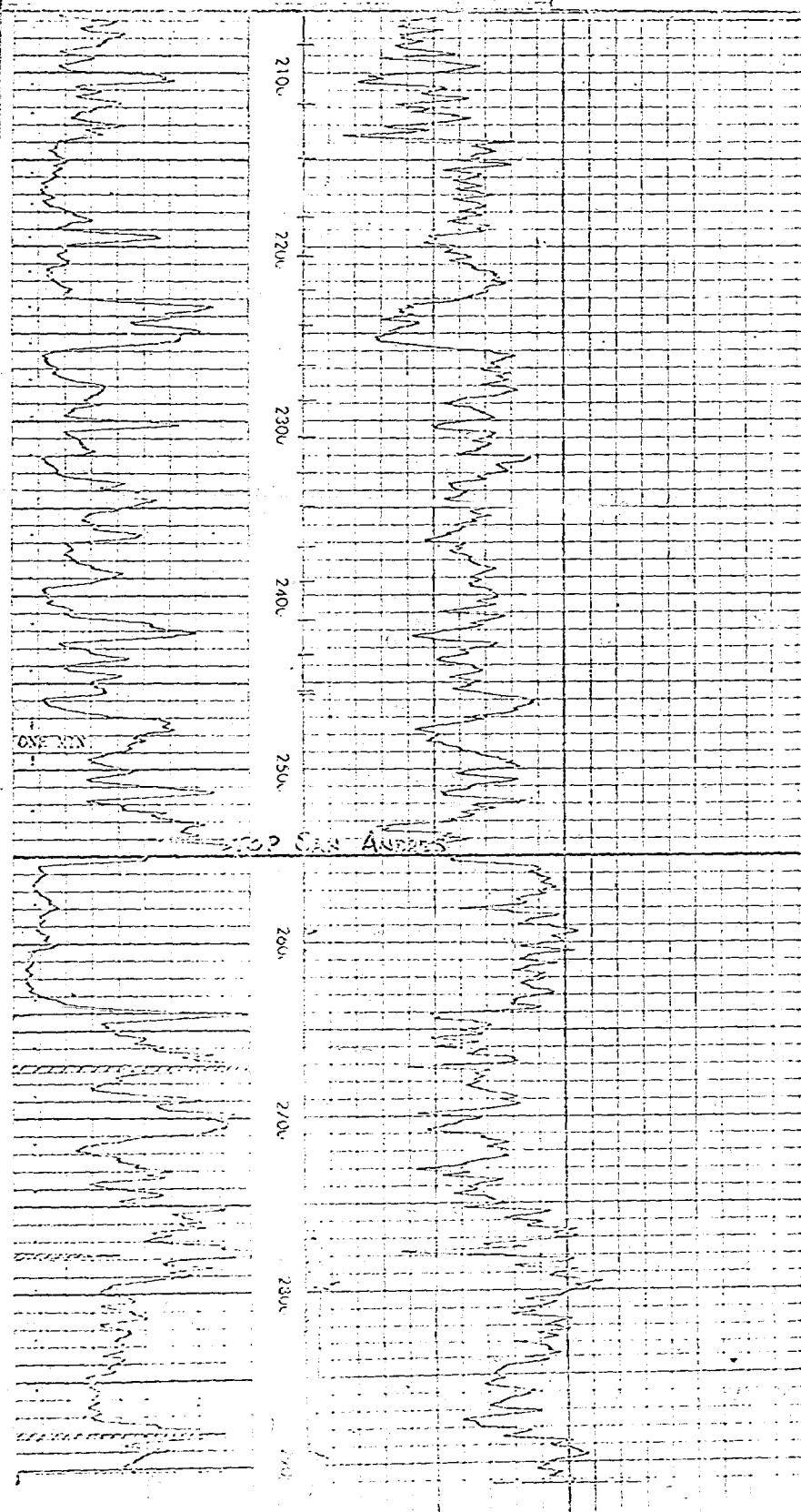
A

RADIOACTIVITY LOG

NATURAL GAMMA RADIATION

INDUCED GAMMA RADIATION

COUNT RATE CPM GROSS NET DATE TIME LOGGERS TOTAL DEPTH, DRILLER TOTAL DEPTH, LOGGERS TYPE OF FLUID IN HOLE FLUID LEVEL MAX. TEMP. NEUTRON SOURCE STRENGTH SOURCE TO CENTER OF COUNTER LENGTH MEAS. DEVICE IN O.D. OF INSTRUMENT IN TIME CONSTANT SEC. LOGGING SPEED FT. MIN. NEUTRON SOURCE CODE TRUCK NO. RECORDED BY WITNESSED BY	COMPANY	MA CO-RESER-YNES	Location
	FILE		Sec. 27
	WELL	STATE # 100	Twp. 18
	FIELD	AFLOSIA	Rge. 28
	COUNTY	EMERY	STATION
	SEC. 27 TWP. 18 RGE. 28	Elev. D.M. 3571'	
	SURVEY		N.M. 2572'
			G.M.
	Measured From	Derriek Floor	Elevation
	Drilling Measured From	Derriek Floor	Elevation
	Permanent Datum	Derriek Floor	Elevation
	Type Log	GROSS	N. G. 2571'
	Run No.	001	
	Date	3-15-50	3-15-50
	Loggers	2-512	2-512
	Total Depth, Driller	2,550'	2,550'
	Total Depth, Loggers	2,992'	2,992'
	Type of Fluid in Hole	Oil	Oil
	Fluid Level		
	Max. Temp.	80 F.	80 F.
	Neutron Source Strength	5000	5000
	Source to Center of Counter	18 in.	18 in.
	Length Meas. Device in	22 in.	22 in.
	O.D. of Instrument in	3.5 in.	3.5 in.
	Time Constant sec.	2	2
	Logging Speed Ft. min.	See Remarks	
	Neutron Source Code	Blue	
	Truck No.	4132	4132
	Recorded by	G. F. Jones	
	Witnessed by		



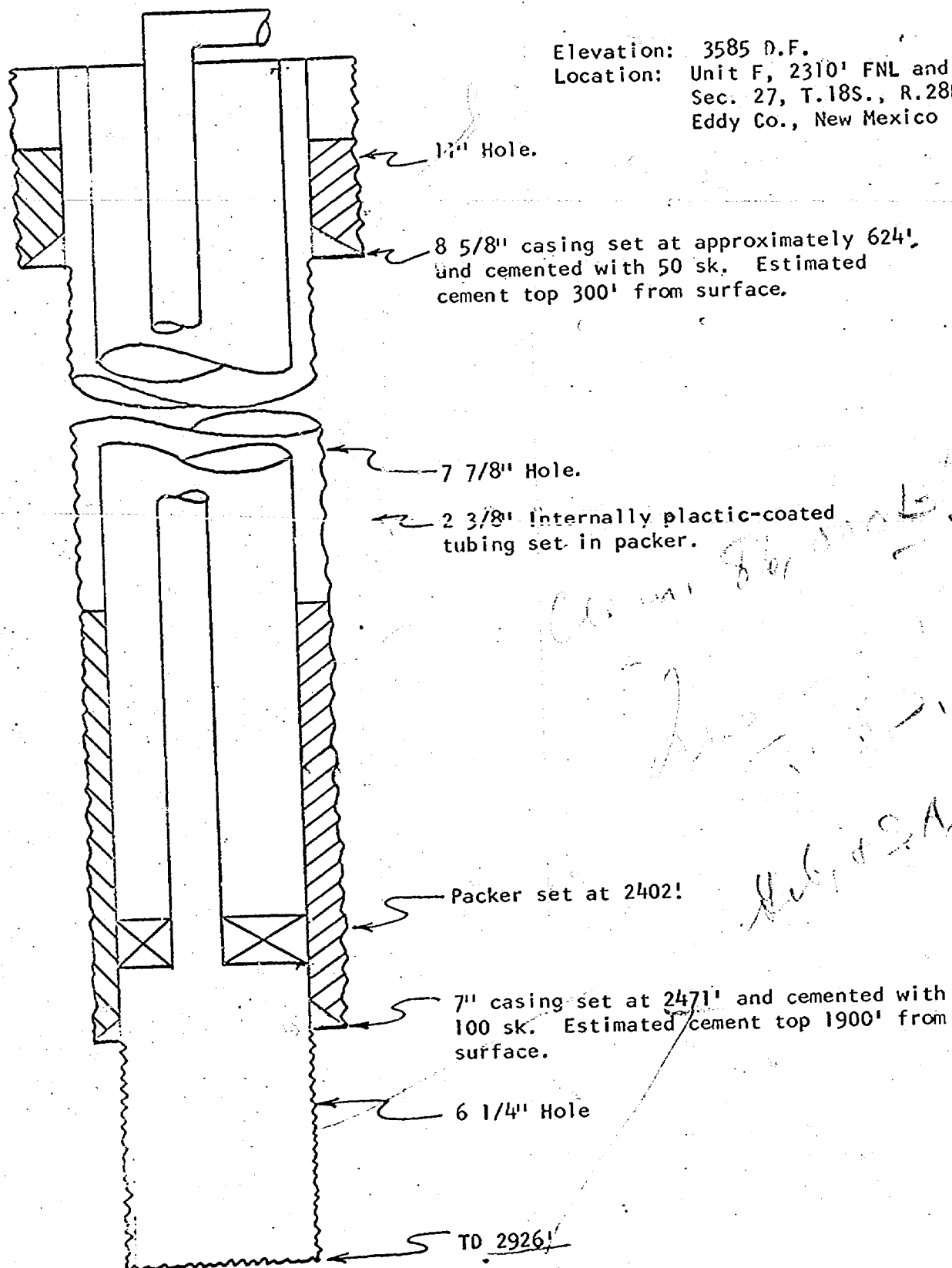
BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Depo EXHIBITS NO. 3, A - E
CASE NO. 4415

DIAGRAMMATIC SKETCHES

EXHIBIT 3

DIAGRAMMATIC SKETCH
PRESENT WELL CONDITIONS
STATE 647 WELL NO. 82

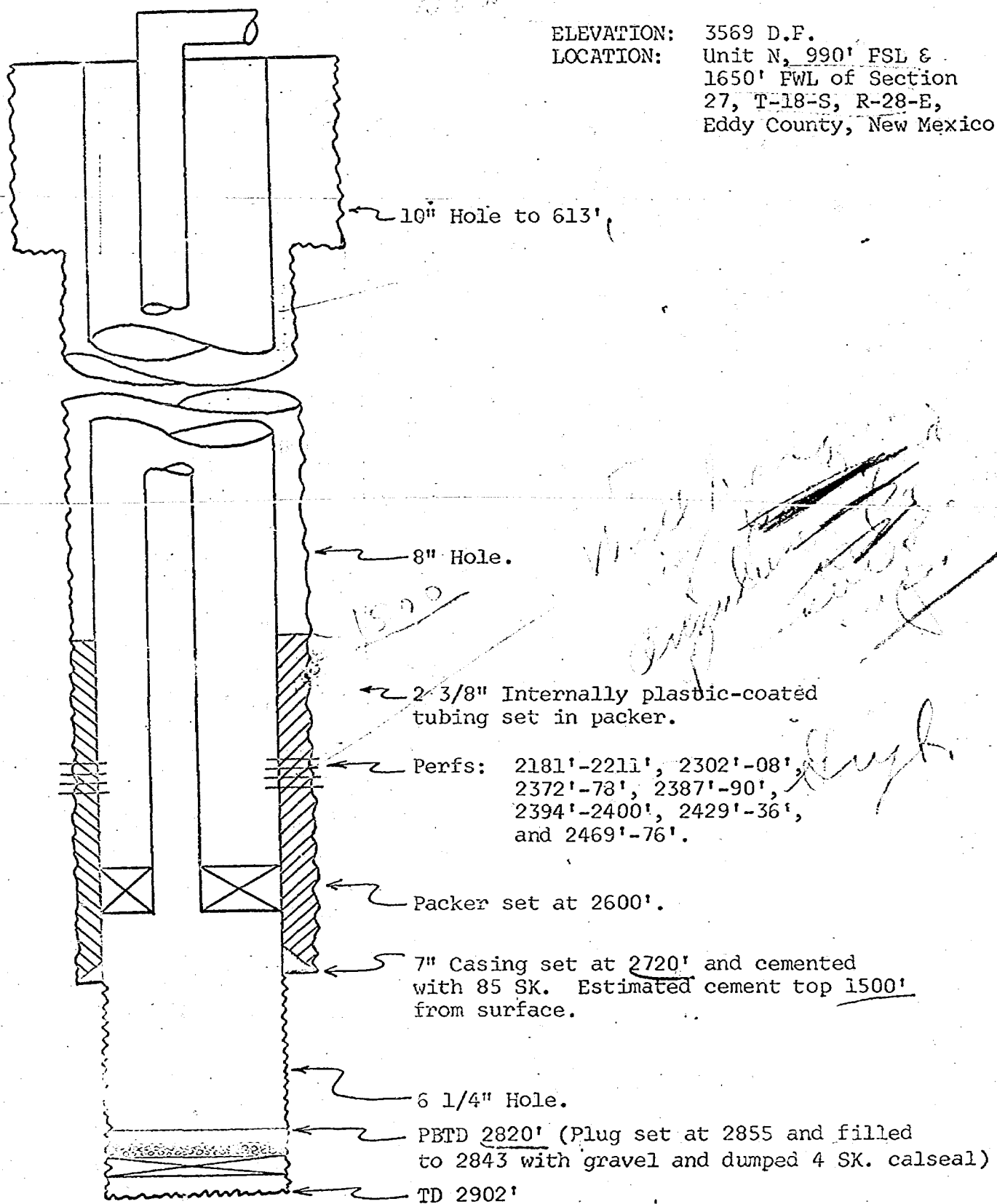
Elevation: 3585 D.F.
Location: Unit F, 2310' FNL and WL of
Sec. 27, T.18S., R.28E.,
Eddy Co., New Mexico



DIAGRAMMATIC SKETCH

PROPOSED WELL CONDITIONS
STATE 647 WELL NO. 92

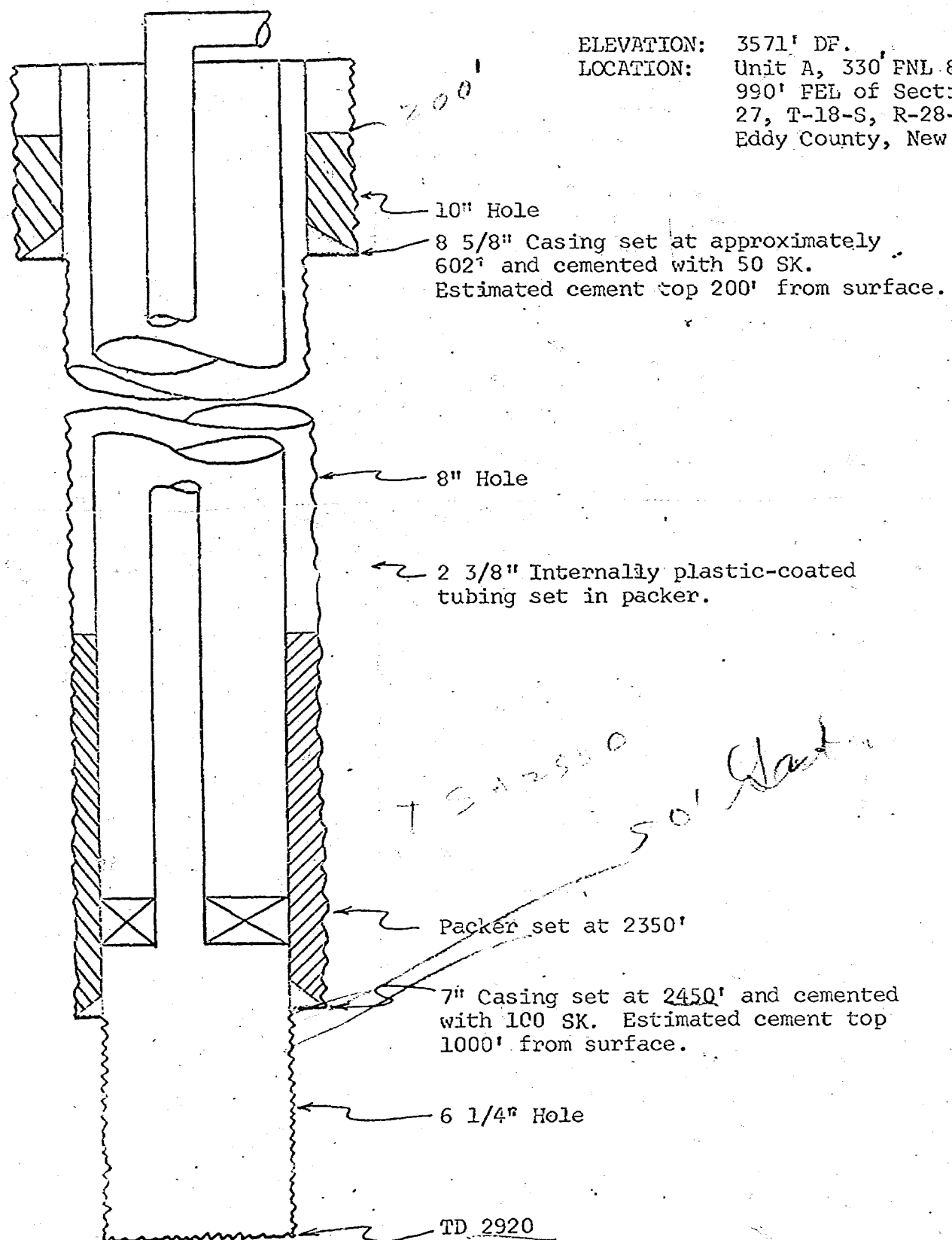
ELEVATION: 3569 D.F.
LOCATION: Unit N, 990' FSL &
1650' FWL of Section
27, T-18-S, R-28-E,
Eddy County, New Mexico.



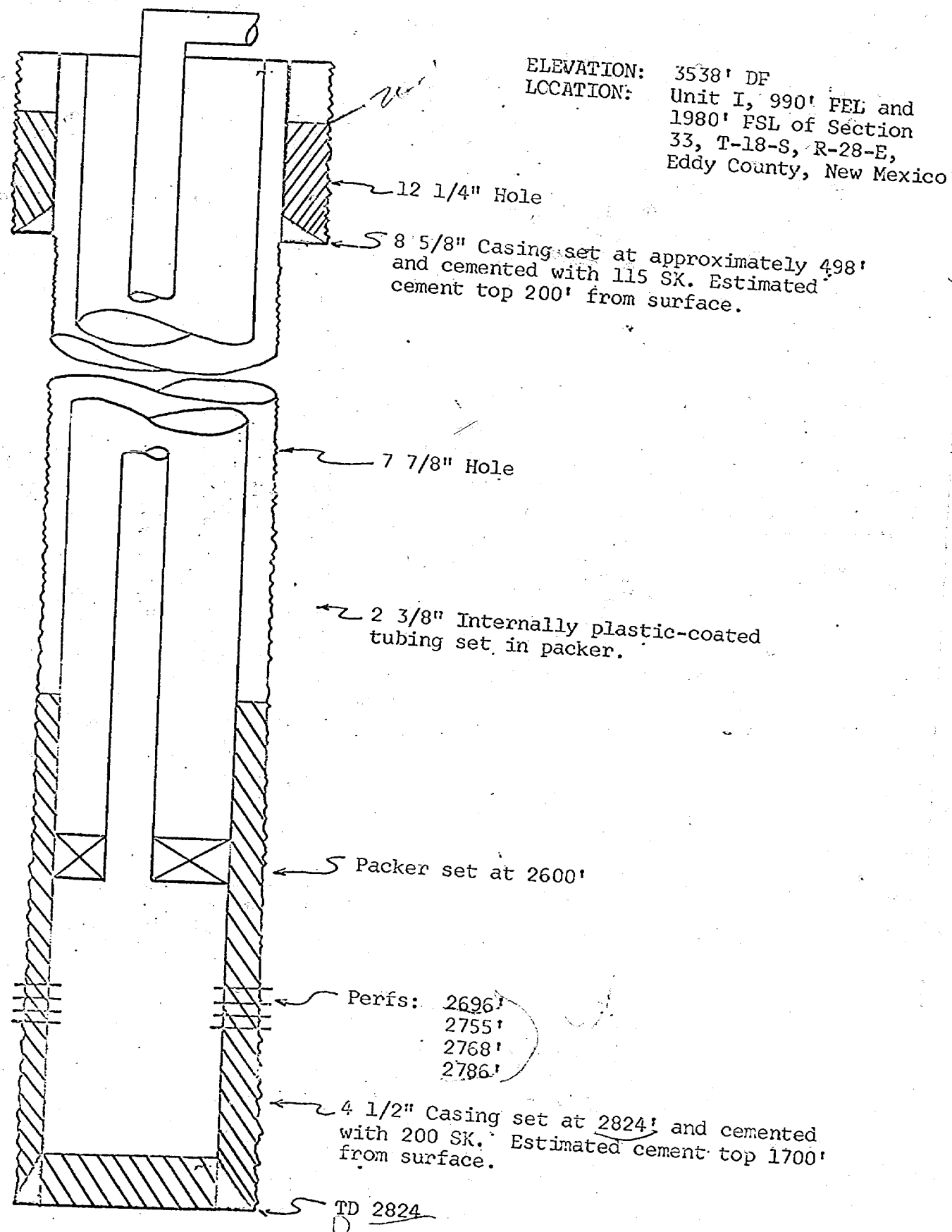
DIAGRAMMATIC SKETCH

PROPOSED WELL CONDITIONS
STATE 647 WELL NO. 100

ELEVATION: 3571' DF.
LOCATION: Unit A, 330' FNL &
990' FEL of Section
27, T-18-S, R-28-E,
Eddy County, New Mexico



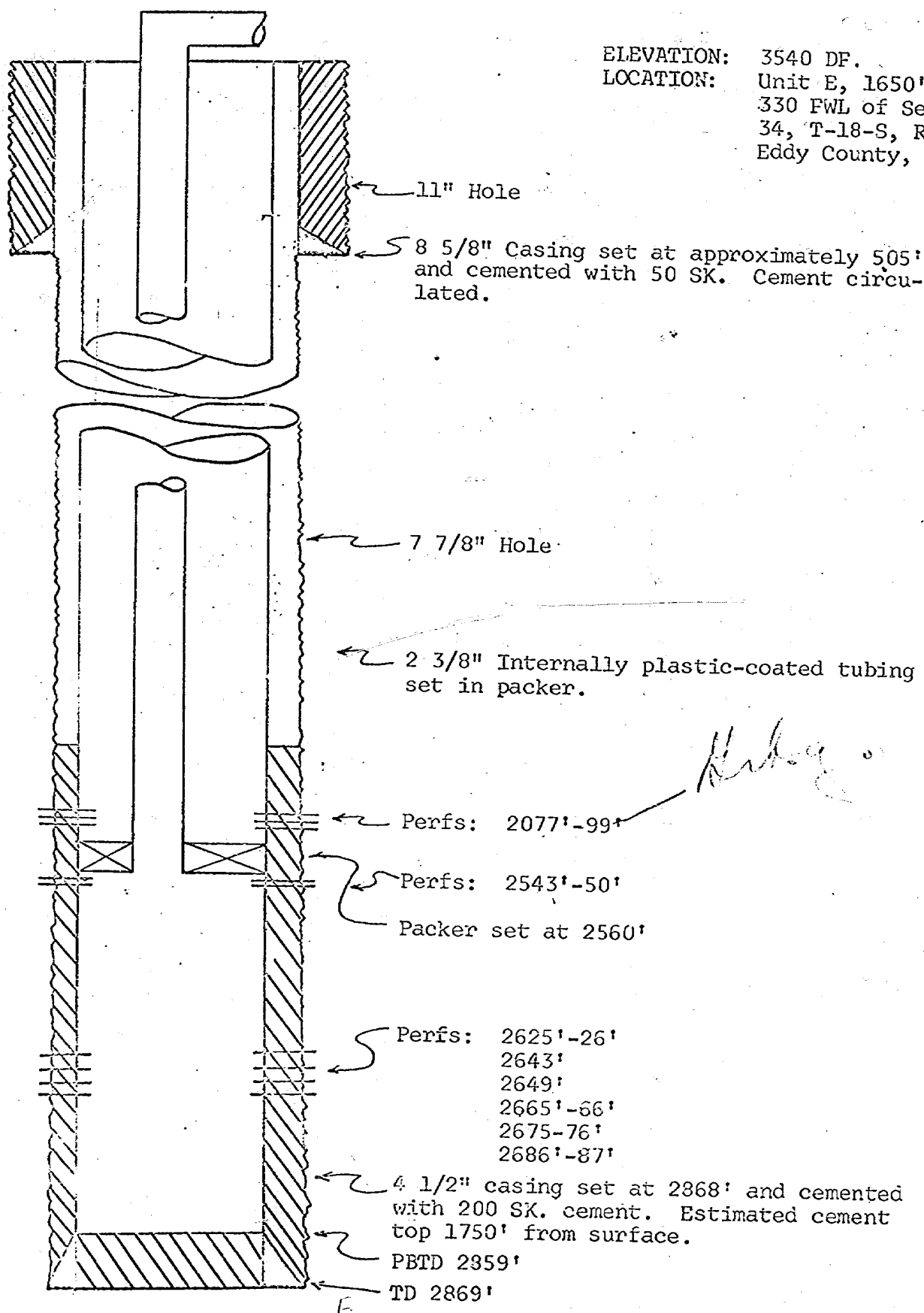
DIACRAMMATIC SKETCH
PROPOSED WELL CONDITIONS
STATE 647 WELL NO. 207



DIAGRAMMATIC SKETCH

PROPOSED WELL CONDITIONS
STATE 647 WELL NO. 217

ELEVATION: 3540 DF.
LOCATION: Unit E, 1650' FNL &
330 FWL of Section
34, T-18-S, R-28-E,
Eddy County,



BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Deposited EXHIBIT No. *4*
CASE NO. *4415*

INITIAL PROJECT AREA
CAMP WATERFLOOD
INDIVIDUAL WELL DATA

<u>Lease</u>	<u>Well No.</u>	<u>Cumulative Oil as of 7-1-70</u>	<u>July BOPD</u>	<u>Date of Completion Mo. - Yr.</u>	<u>Completion Interval</u>	<u>Stimulation</u>
State 647 AC 711	68	57,203	1	7-34	2233-2877'	2000 gals acid
	70	46,581	6	10-35	2305-2871'	80 qts nitro & 3500 gals acid
	74	92,242*	2	10-36	2210-2825'	150 qts nitro & 3000 gals acid
	<u>82</u>	*	SWD✓	11-47✓	2471-2924'	5500 gals acid
	83	42,447	5	5-48	2614-2775'	3000 gals acid & 43,000 gal frac
	84	87,266	8	1-48	1952-2842'	4000 gals acid & 40,000 gal frac
	85	47,895	4	1-48	2605-2848'	2500 gals acid & 38,000 gal frac
	86	37,972	5	2-48	2115-2870'	2000 gals acid & 40,000 gal frac
	87	77,520	3	1-48	2236-2833'	40,000 gal frac
	89	47,154	4	2-48	2703-2884'	2500 gals acid
	90	40,558	5	4-48	2097-2796'	5000 gals acid & 38,000 gal frac
	<u>92</u>	31,743	3✓	7-48✓	2181-2855'	9000 gals acid & 50,000 gal frac
	93	23,732	2	11-56	1987-2514'	50,000 gal frac
	<u>100</u>	60,253	1✓	7-49✓	2450-2920'	3000 gals acid & 20,000 gal frac
	101	44,398	1	1-50	2800-2890'	4500 gals acid
	200	11,411	SI	4-64	2534-2849'	2750 gals acid & 17,500 gal frac
State 647 AC 721	199	32,910	7	3-64	2663-2777'	30,000 gal frac
	201	28,246	6	6-64	2652-2787'	7000 gals acid & 25,000 gal frac
	<u>207</u>	10,988	4✓	4-66	2696-2786'	500 gals acid & 40,000 gal frac
	<u>217</u>	7,492	4✓	12-66	2077-2687'	3500 gals acid & 39,000 gal frac
State 647 AC 731	205	38,802	12	5-65	2006-2769'	1750 gals acid & 40,000 gal frac
State E-1288	<u>81</u>	<u>64,995</u>	<u>4</u>	8-47	2283-2872'	4000 gals acid
Total	<u>21</u>	931,808	87			

*Cumulative was carried combined on Wells No. 74 and 82 since both wells are located in the same proration unit.

DEPCO, Inc.

Exploration & Production

300 Central
ODESSA, TEXAS 79760

July 30, 1970

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

Case 4415
Subject: Application for Injection
of Water
Project: Proposed Camp Waterflood
Field : Artesia
County : Eddy

Gentlemen:

DEPCO, Inc. requests a hearing to approve injection of water into the San Andres pay for the purpose of waterflood operations in the proposed Camp Flood. This project area is shown by the plat, Exhibit 1 and is located in sections 22, 23, 27, 28, 33, and 34, T-18-S, R-28-E, Eddy County, New Mexico.

This application also requests approval to permit producers State 647 Wells No. 90, 92, 100, 207, and 217 to be converted to water injection status. The attached plat also shows the location of the present produced water injector, proposed water injectors, producing wells, and lease ownership within a two-mile radius of the proposed injectors. Exhibit 2 contains logs or portions of logs over the zones of interest for the five (5) proposed injection wells. Also, diagrammatic sketches for these wells are presented in Exhibit 3.

Injection will be into the San Andres pay at an approximate depth of 2700'. Approximately 500 BWPD will be injected into each of the proposed injectors. Water for this project will be purchased from one of the water companies which have distribution facilities in the vicinity.

Very truly yours,

W. C. Smith
W. C. Smith
District Engineer

WCS: mas

Attachments

cc: NMCCC-Artesia
John Strader-Denver
Leon Standard-Artesia

LOGS

EXHIBIT 2

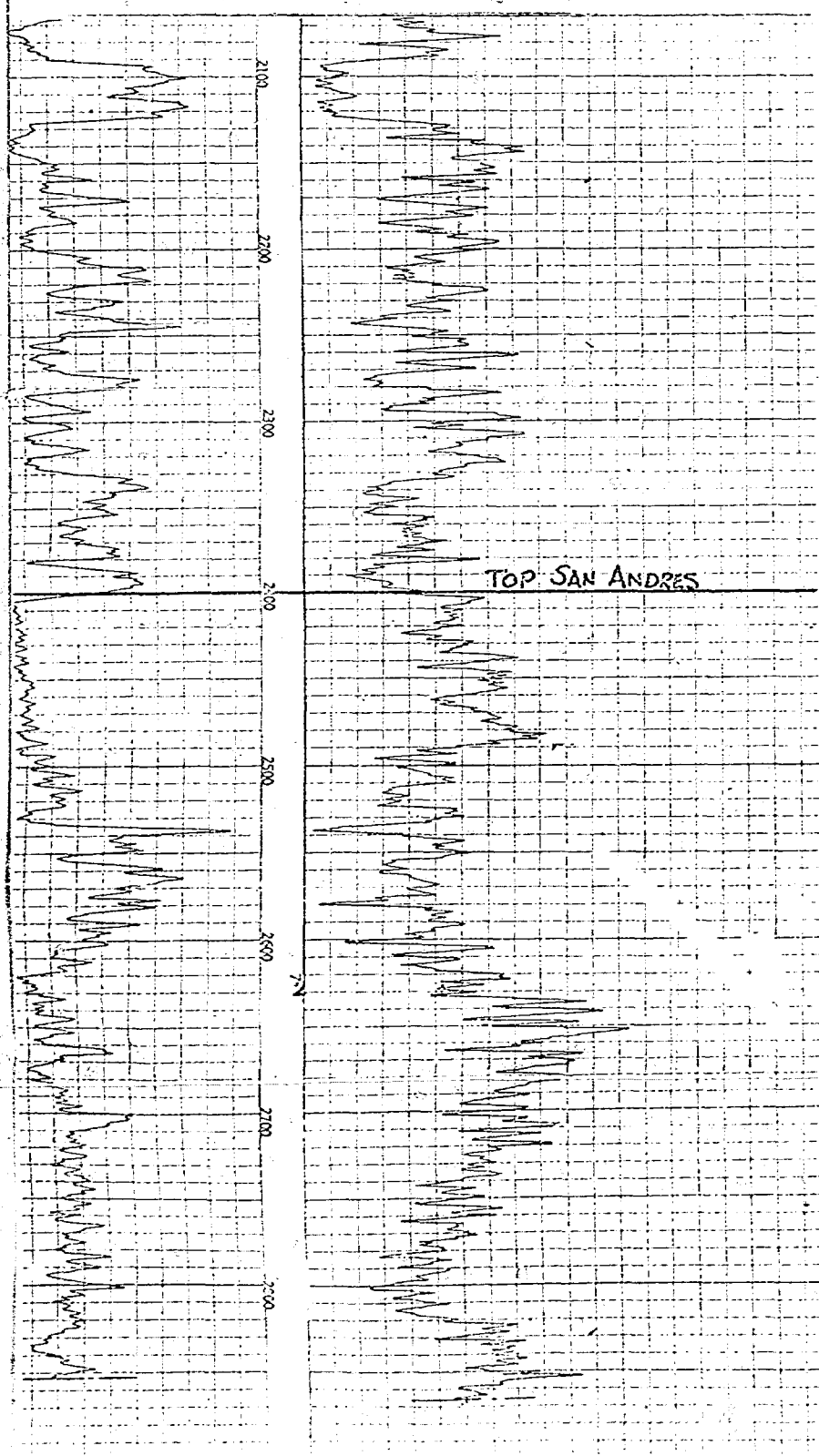
LANE & WELLS

Radiactivity Log

COMPANY: HESLER & SUTHERS WELL: STATE NO. 90 FIELD: ARTESIA COUNTY: EDDY LOCATION: NW 1/4 OF SE 1/4 SEC. 36, T-18-S, R-28-E	COMPANY: HESLER & SUTHERS	Location of Well:
	WELL: STATE NO. 90	
	FIELD: ARTESIA	
	COUNTY: EDDY	STATE: N.M.
LOG MEAS. FROM DERRICK FLOOR		ELEV.
DRUG. MEAS. FROM DERRICK FLOOR		ELEV.
PERM. DATUM GROUND LEVEL IS 2' BELOW D.F. ELEV.		

TYPE OF LOG	GAMMA RAY	LOG. RAY
RUN NO.	1-0.W.	1-0.W.
DATE	7-12-56	7-12-56
TOTAL DEPTH (DRILLER) SAND LINE	2550	2550
EFFECTIVE DEPTH (DRILLER)	2550	2550
TOP OF LOGGED INTERVAL	5152	5152
BOTTOM OF LOGGED INTERVAL	2552	2552
TYPE OF FLUID IN HOLE	OIL	OIL
FLUID LEVEL	1510	1510
MAXIMUM RECORDED TEMP.		600H
SOURCE STRENGTH & TYPE		5.25
SOURCE SPACING - IN.		9.14
LENGTH OF MEASURING DEVICE - IN.	36	3 5/8
O.D. OF INSTRUMENT - IN.	3 5/8	3 5/8
TIME CONSTANT - SECONDS	5.5	3.6
LOGGING SPEED FT. MIN.	20-40	20-40
STATISTICAL VARIATION - IN.		
SENSITIVITY REFERENCE	274	275
RECORDED BY	KEMMEL & EVANS	AWALONG
WITNESSED BY	EVANS	EVANS

WELL RECORD			
RUN NO.	BIT SIZE	CASING	WT.-LB.
1	7	7	2600
	O.W.		2550
			2632
			2667



COMPANY: **ENTER & LOG**

WELL: **STATS ID. 92**

FIELD: **ANASSIA**

LOCATION: **9901 FSL & 15501 FSL OF S.D. 21**

COUNTY: **ELI** STATE: **N.MEX.**

LOG ZERO: **ERRORS 1200** ELEV. **3559**

ORIG. ZERO: **ERRORS 1200** ELEV. **3559**

PERM. DATUM: **GROUND LEVEL** ELEV. **3555**

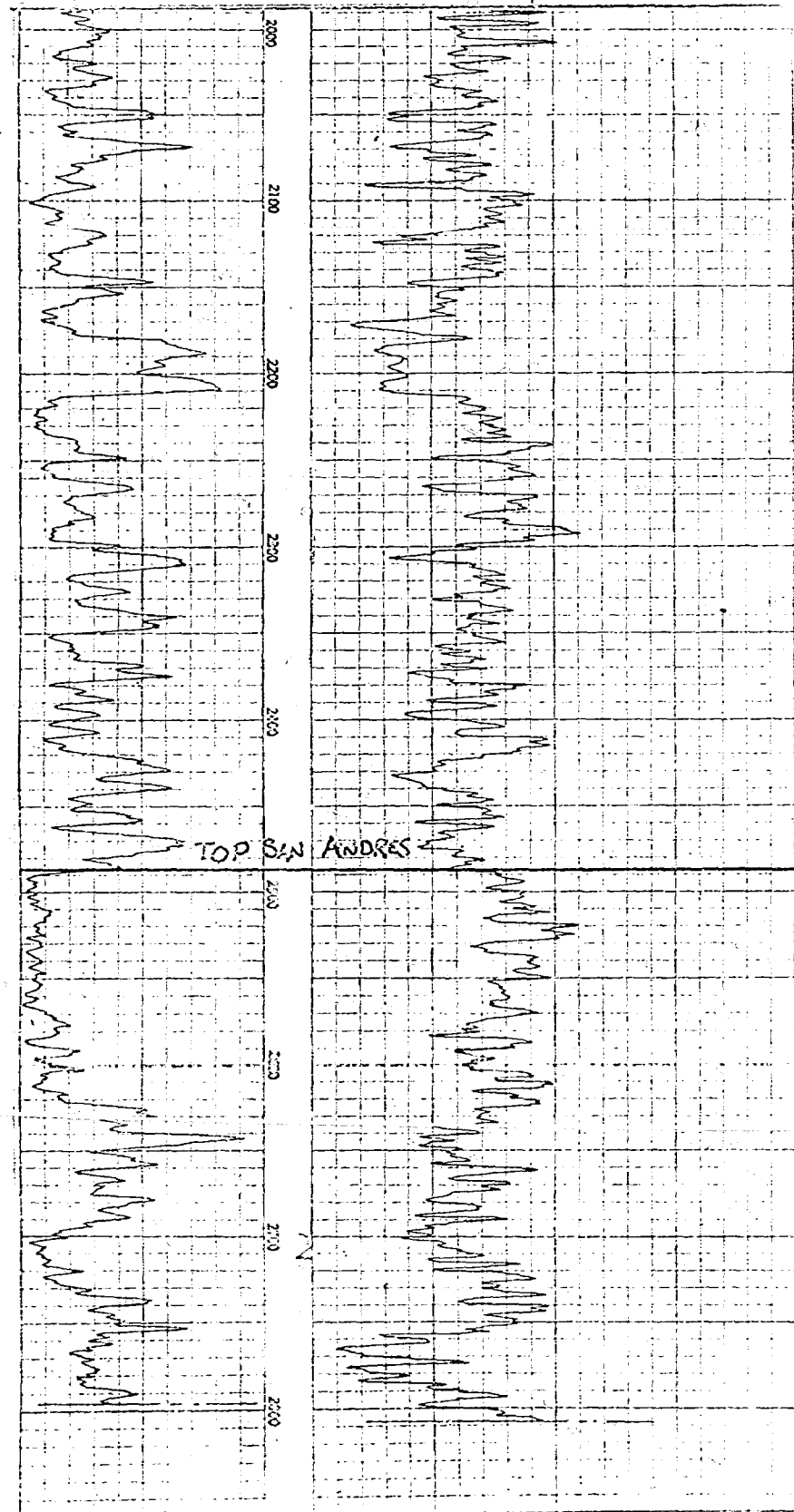
TYPE OF LOG	DATE	TIME	RECORDED BY
RUN NO.	DATE	TIME	
TOTAL DEPTH (DRILLER)	2850	9:25	
EFFECTIVE DEPTH (DRILLER)	2355	9:25	
TOP OF LOGGED INTERVAL	2355	9:25	
BOTTOM OF LOGGED INTERVAL	2355	9:25	
TYPE OF FLUID IN HOLE	011	9:25	
FLUID LEVEL	1253	9:25	
MAXIMUM RECORDED TEMP.			
SOURCE STRENGTH & TYPE			
SOURCE SPACING—IN.			
LENGTH OF MCAS. DEVICE—IN.	30	9:25	
O.D. OF INSTRUMENT—IN.	3 5/8	9:25	
TIME CONSTANT—SECONDS	1.8	9:25	
LOGGING SPEED FT./MIN.	20-50	9:25	
STATISTICAL VARIATION—IN.	2 1/2	9:25	
SENSITIVITY REFERENCE			

RECORDED BY: **ROBERTA**

WITNESSED BY: **ROBERTA**

WELL RECORD

RUN	BIT SIZE	CASING WT.—LB.	FROM WELL RECORD	FROM LOG
052	8 5/8"		2355 TO 2700	2355 TO 2700
053	8 3/4"		2700 TO 2712	2712 TO 2712
051	8"		2712 TO 2712	2712 TO 2712

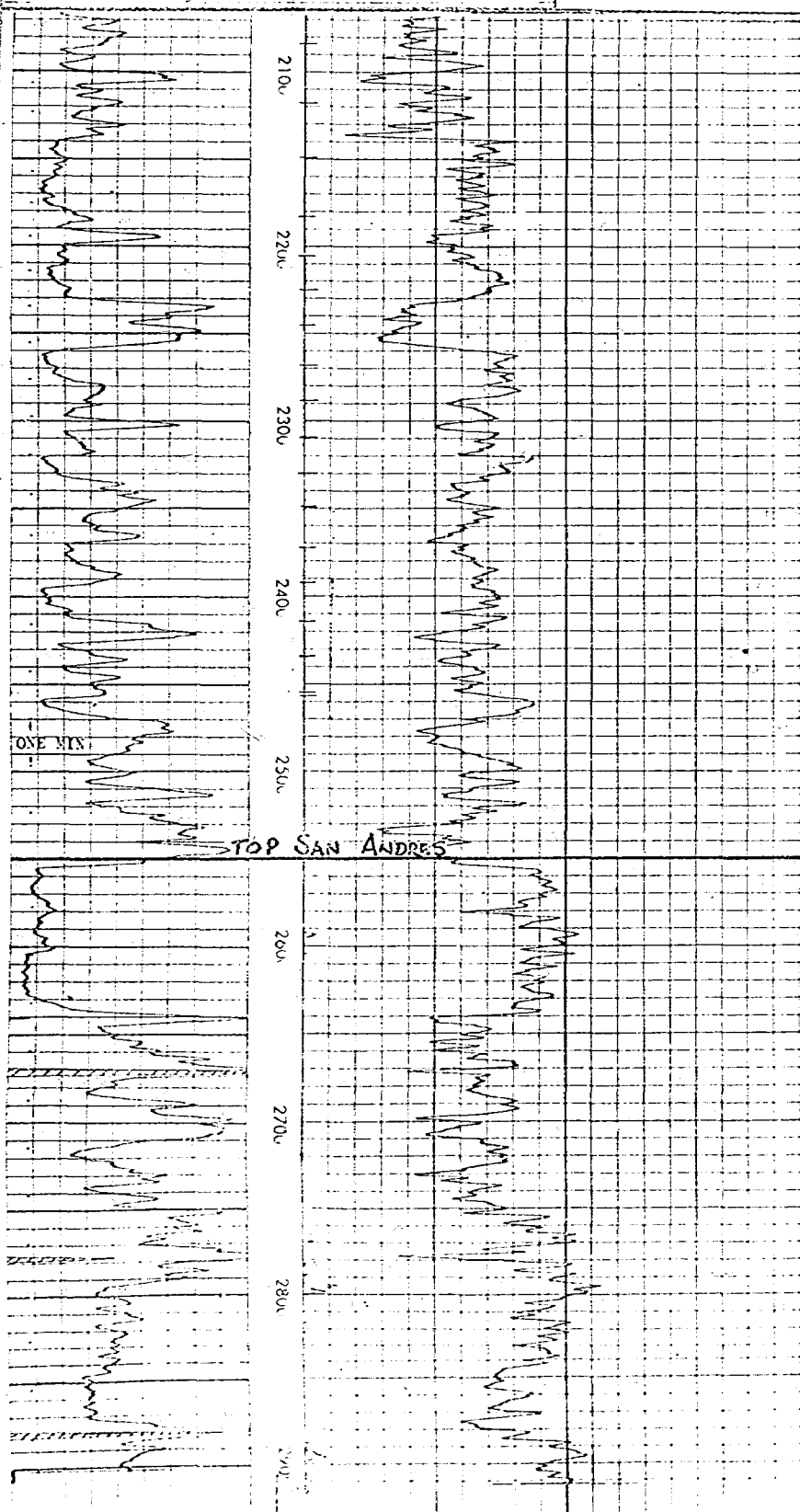


RADIOACTIVITY LOG

NATURAL GAMMA RADIATION

INDUCED GAMMA RADIATION

COMPANY WELLS YATES FILE WELL STATE # 100 FIELD ALCASA County Eddy State N.M.	COMPANY <u>WACO-BUSIER-YATES</u>		Location
	FILE		Sec. 27
	WELL STATE # 100		Twp. 18
	FIELD <u>Arcadia</u>		Rge. 28
	COUNTY <u>Eddy</u> STATE <u>New Mex.</u>		
SEC. 27 TWP. 18 RGE. 28		Elev. D.F. 3571'	
SURVEY		K.B. 3572'	
		Grid	
Log Measured From <u>Derrick floor</u>		Elevation	3571'
Drilling Measured From <u>Derrick floor</u>		Elevation	3571'
Permanent Datum <u>Derrick floor</u>		Elevation	3571'
Type Log	GAMMA	N. GAMMA	
Run No.	ONE	ONE	
Date	3-15-50	3-15-50	
Footage Logged	2,412'	2,412'	
Total Depth, Driller	2,920'	2,920'	
Total Depth, Logged	2,902'	2,912'	
Type of Fluid in Hole	Oil	Oil	
Fluid Level			
Max. Temp.	96 F	96 F	F F
Neutron Source Strength		400 mg	
Source to Center of Counter	in.	10 in.	in. in.
Length Meas. Device in	29 in	14 in	
O.D. of Instrument in	3 5/8"	3 5/8"	
Time Constant - sec.	2	2	
Logging Speed Ft. min.	See Remarks		
Neutron Source Code		Blue	
Truck No.	4132	4132	
Recorded by	G. F. AYERS		
Witnessed by	V. S. SMITH		



FILE NO. _____ COMPANY INTERNATIONAL - YATES

WELL STATE 647 NO. 207

FIELD ASTORIA

COUNTY SODY STATE NEW MEXICO

LOCATION 1980' FSL & 990' FEL

Other Services F/L CALIPER M.O.P.

SEC 33 TWP 19-S RGE 28-E

Permanent Down GROUND LEVEL Elev. 3538

Log Measured from K. B. 7 Ft. Above Permanent Datum

Drilling Measured from K. S.

Elevations: KB 3545 DF 3543 GL 3538

Date 4/12/66

Run No. 001

Type Log 100' S110'

Depth-Driller 2824

Depth-Logger 2826

Bottom Logged Interval 2824

Top Logged Interval 00

Type Fluid in Hole 34.1 MUD

Specific Gravity 1.00 PPM

Density 15. Gal. 9.2

Level 100'

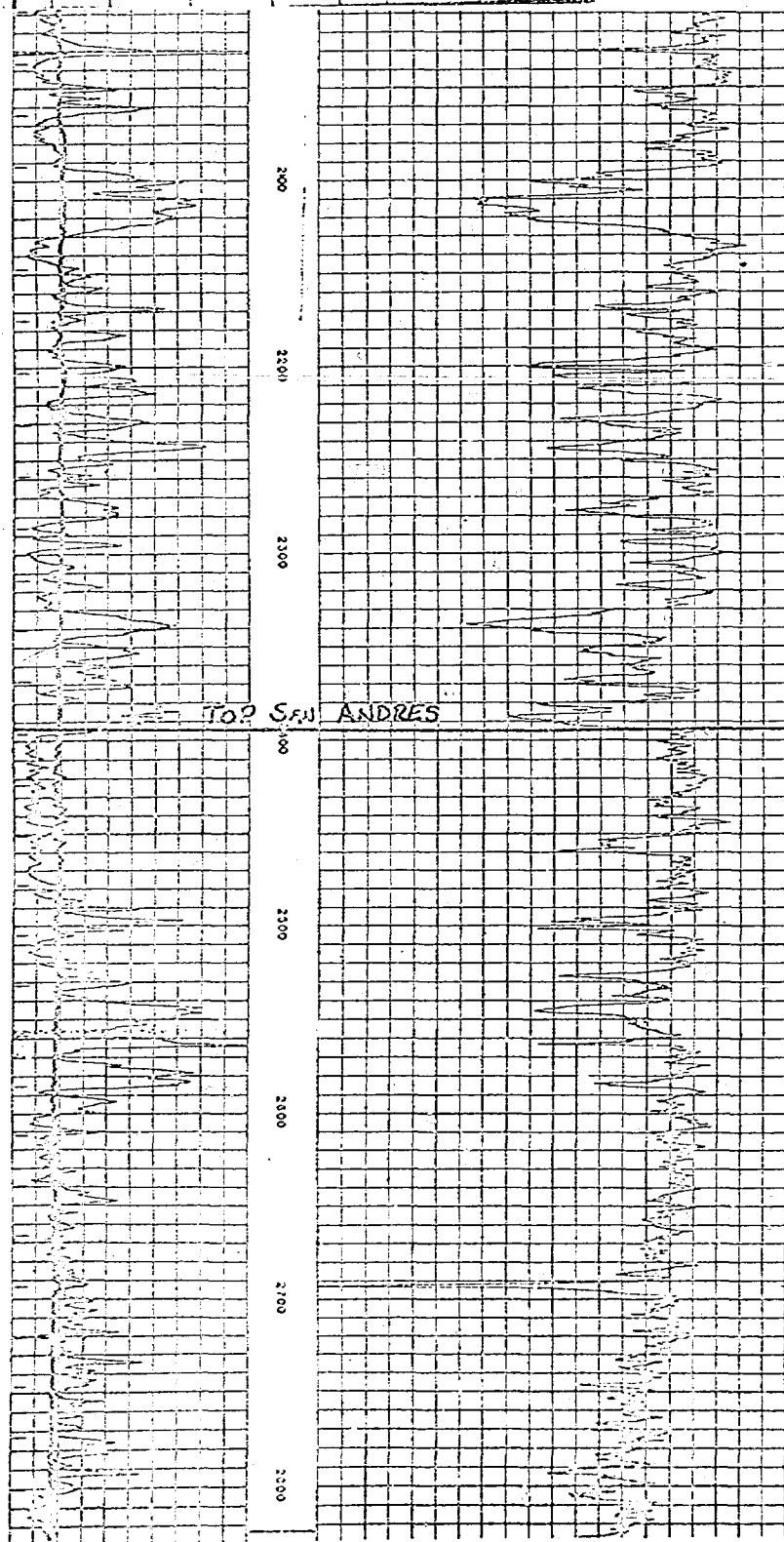
Max. Rec. Temp. 80° F

Cor. Rq. Time 2 HOURS

Recorded By KHANYS

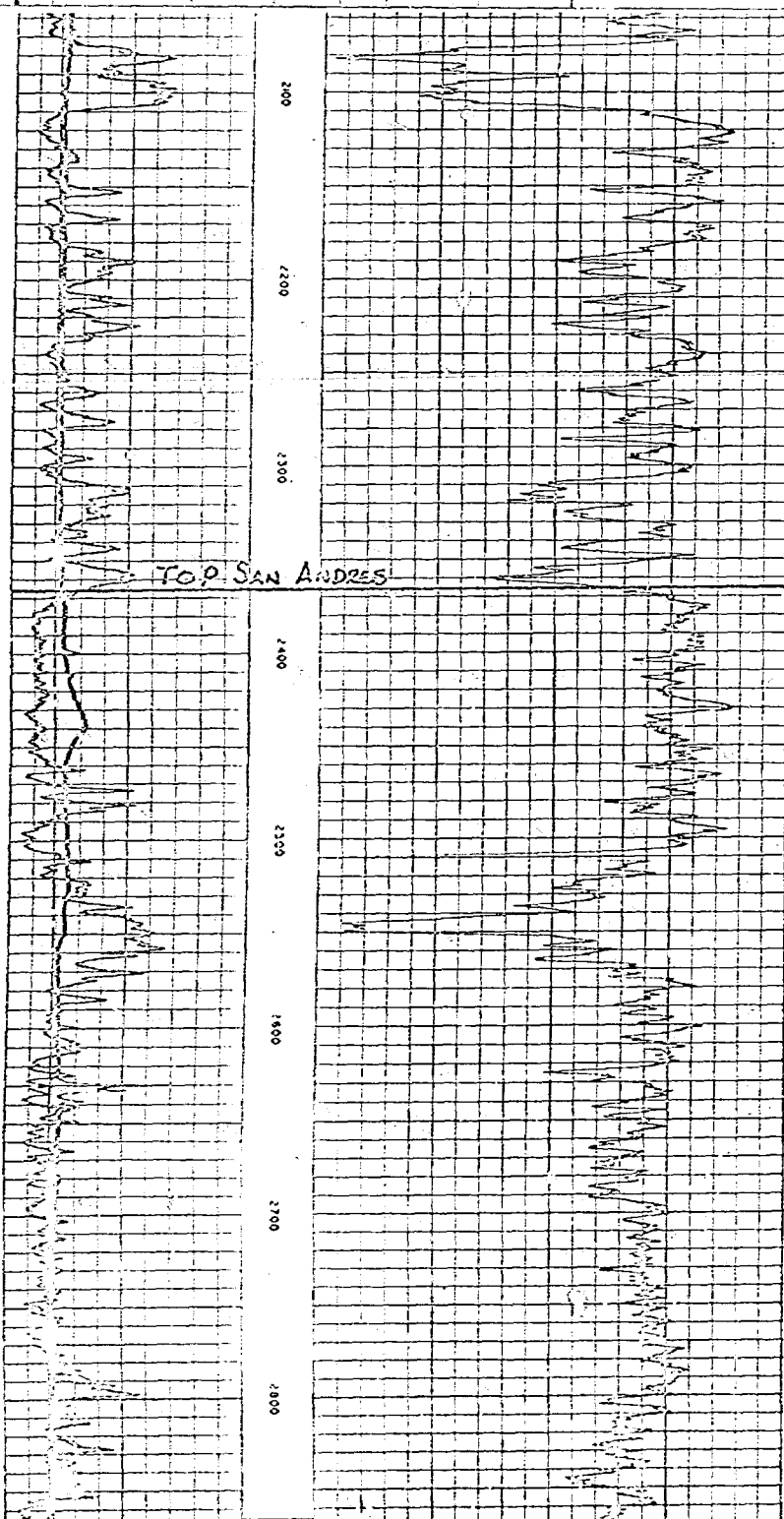
Witnessed By MR. MERRISON & MR. STRADER

Run No.	Bore Hole Record		Casing Record	
	From	To	From	To
1	7 7/8" 500	2824	5" 5/8"	SURFACE 500



FILE NO.	COMPANY DEPCO, INCORPORATED	
	WELL STATE 647 NO. 217	
	FIELD ARTESIAN	
	COUNTY EDDY	STATE NEW MEXICO
	LOCATION 1650' FNL & 330' FNL UNIT E.	
	SEC 39	TWP 18-S RGE 28-E
Permanent Datum	GROUND LEVEL	Elev. 3532
Log Measured from	K. B. 8	Fe. Above Permanent Datum
Drilling Measured from	K. B.	GL 3532
Date	11-28-66	
Run No.	ONE	
Type Log	G/D/C	
Depth Driver	2859	
Depth Logger	2870	
Bottom Logged Interval	2857	
Top Logged Interval	29	
Type Fluid in Hole	WATER	
Salinity Ppm Cl.		
Density Lb. Gal.		
Level	FULL	
Max. Rec. Temp. Deg. F.	89	
Oper. Run Time	4 HOURS	
Recorded By	WAVEFIELD	
Witnessed By	MR. STRADER	

Bore Hole Record				Casing Record			
No.	Size	From	To	Size	Wgt.	From	To
1	11"	SHOE	500	3 5/8"	74	SURF.	500
1	7 7/8"	500	2870				

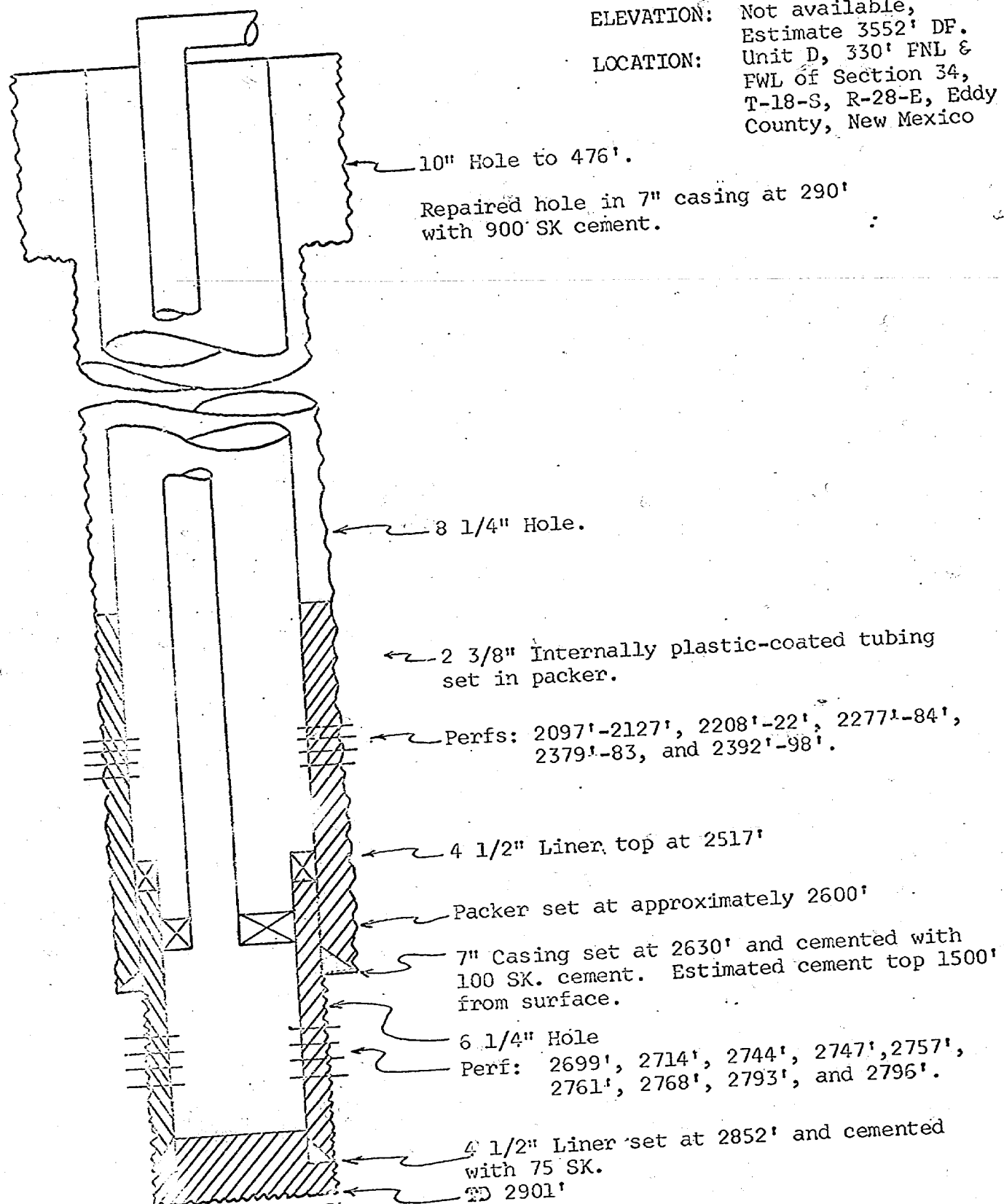


DIAGRAMMATIC SKETCHES

EXHIBIT 3

DIAGRAMMATIC SKETCH
PROPOSED WELL CONDITIONS
STATE 647 WELL NO. 90

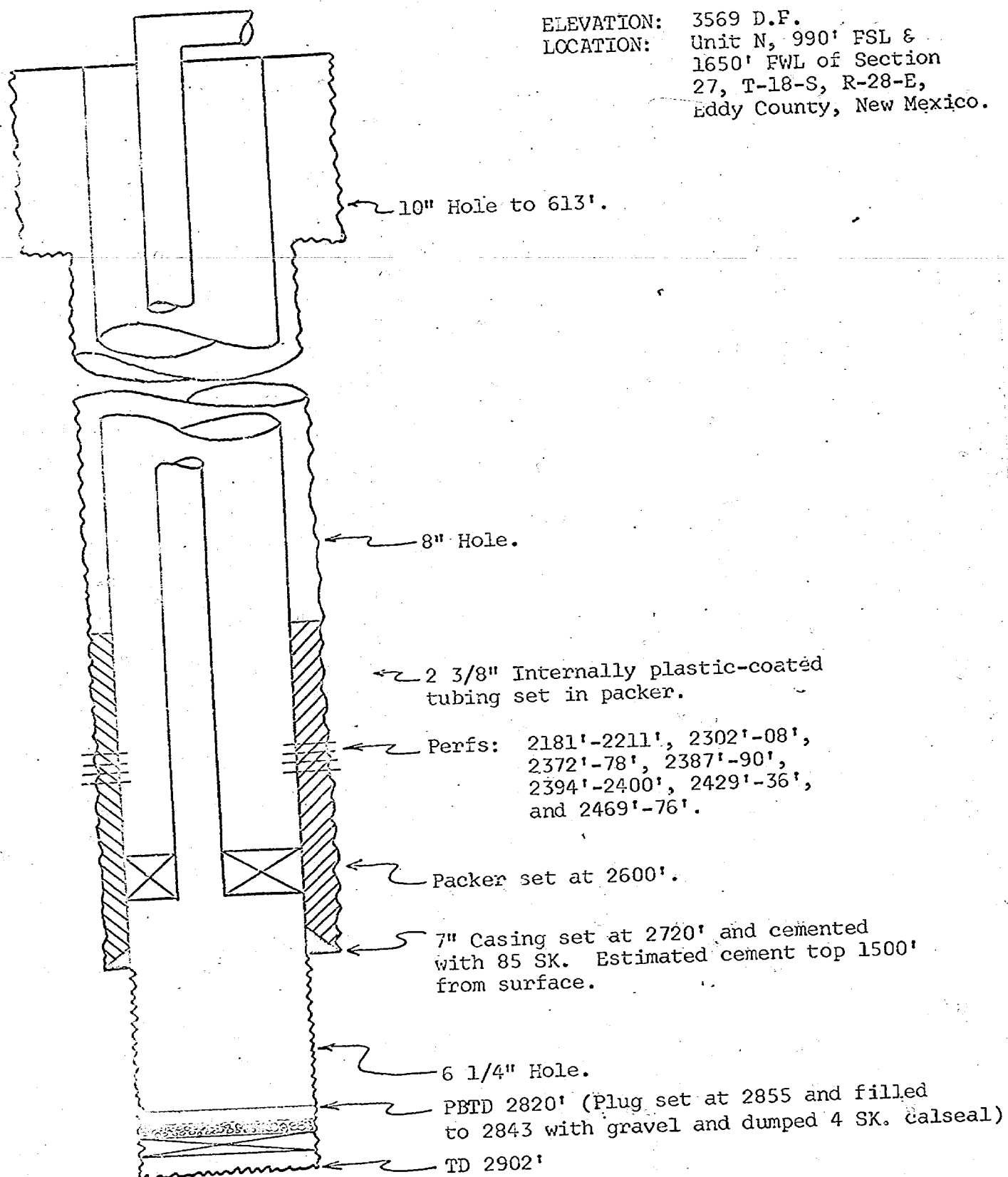
ELEVATION: Not available,
Estimate 3552' DF.
LOCATION: Unit D, 330' FNL &
FWL of Section 34,
T-18-S, R-28-E, Eddy
County, New Mexico



DIAGRAMMATIC SKETCH

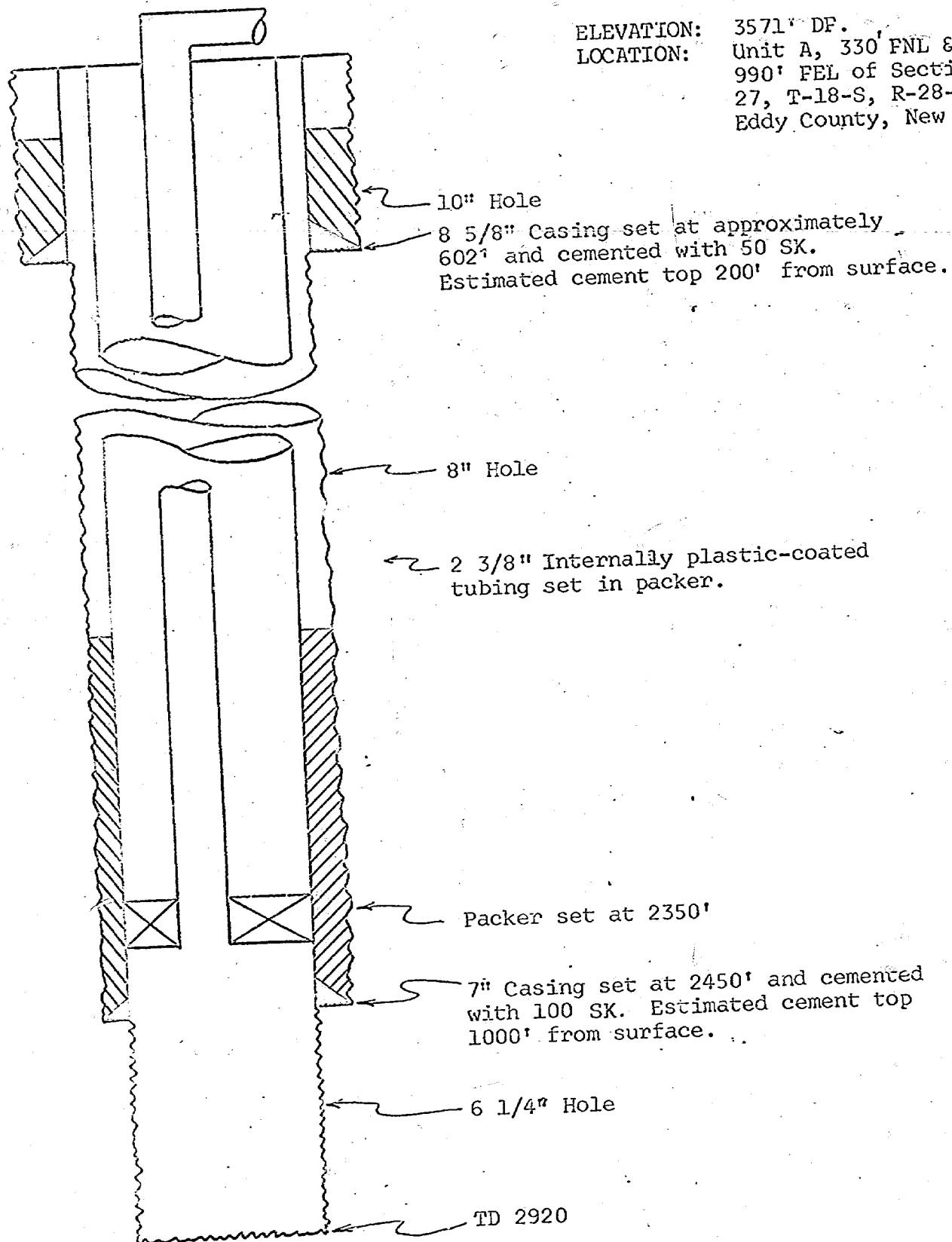
PROPOSED WELL CONDITIONS STATE 647 WELL NO. 92

ELEVATION: 3569 D.F.
LOCATION: Unit N, 990' FSL &
1650' FWL of Section
27, T-18-S, R-28-E,
Eddy County, New Mexico.



DIAGRAMMATIC SKETCH
 PROPOSED WELL CONDITIONS
 STATE 647 WELL NO. 100

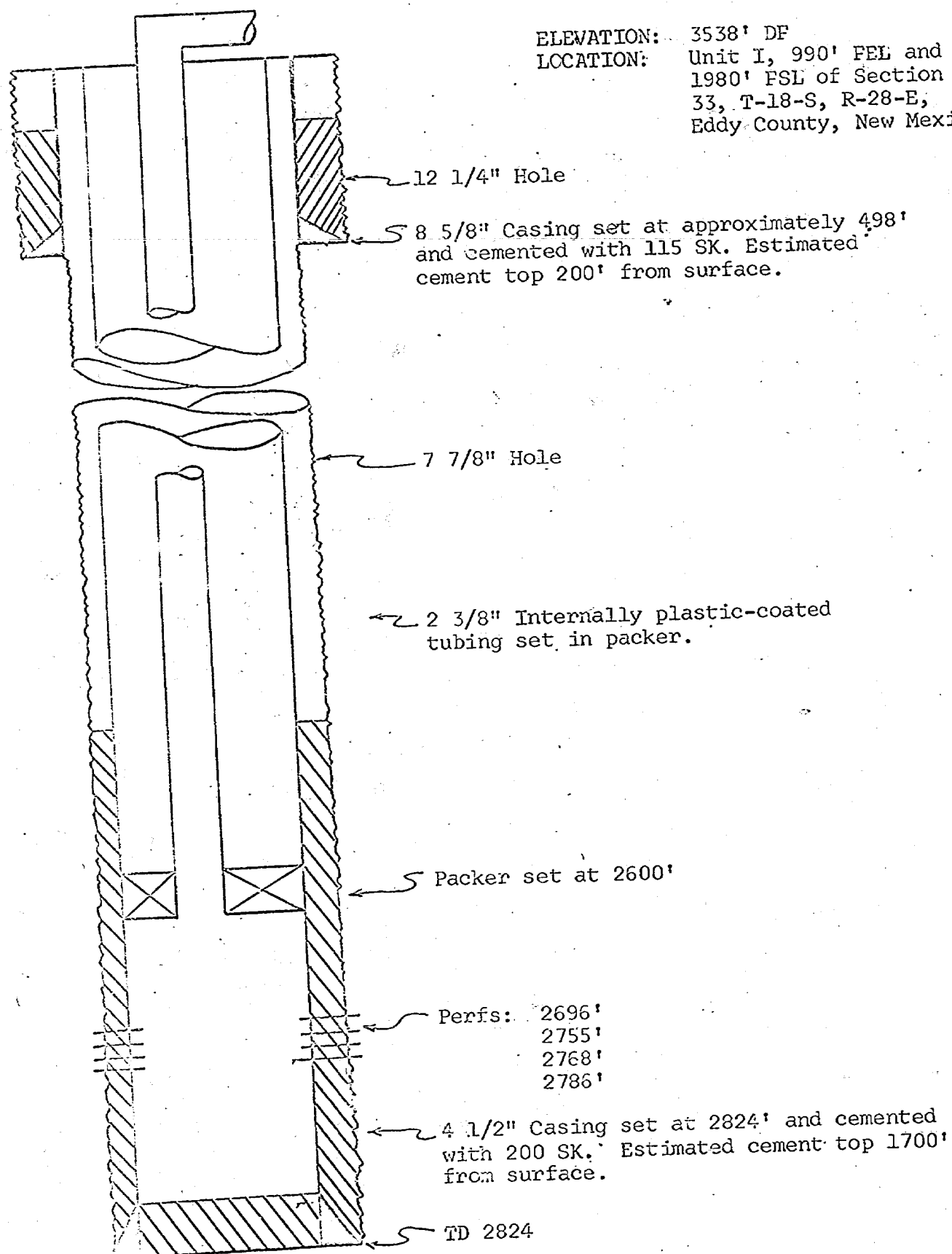
ELEVATION: 3571' DF.
 LOCATION: Unit A, 330' FNL &
 990' FEL of Section
 27, T-18-S, R-28-E,
 Eddy County, New Mexico



DIAGRAMMATIC SKETCH

PROPOSED WELL CONDITIONS
STATE 647 WELL NO. 207

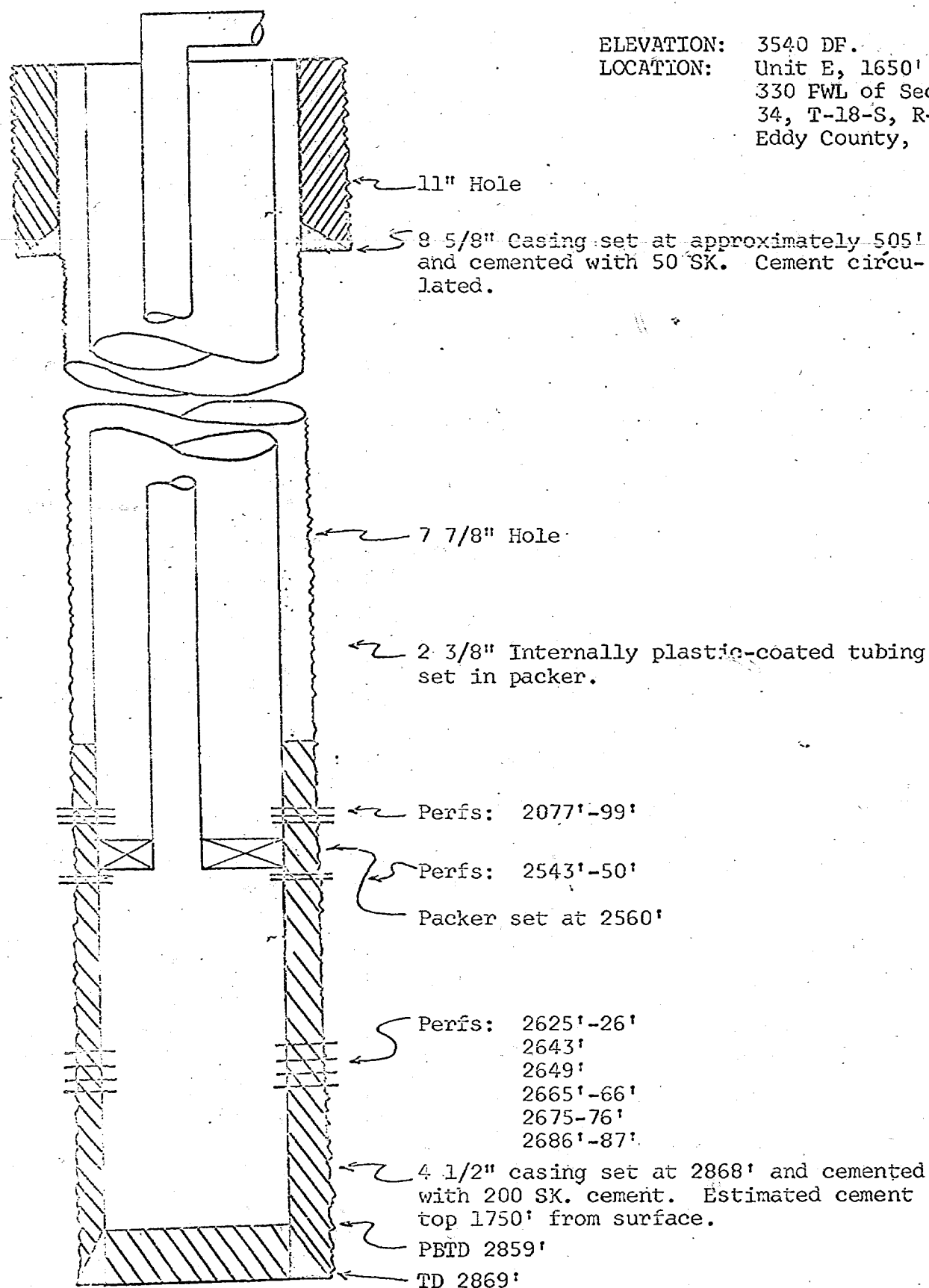
ELEVATION: 3538' DF
LOCATION: Unit I, 990' FEL and
1980' FSL of Section
33, T-18-S, R-28-E,
Eddy County, New Mexico



DIAGRAMMATIC SKETCH

PROPOSED WELL CONDITIONS
STATE 647 WELL NO. 217

ELEVATION: 3540 DF.
LOCATION: Unit E, 1650' FNL &
330 FWL of Section
34, T-18-S, R-28-E,
Eddy County,



ROUGH DRAFT FOR WATERFLOOD LETTERS

Mr. Booker Kelly
White, Gilbert, Koch & Kelly
Attorneys at Law
Post Office Box 787
Santa Fe, New Mexico

Dear Sir:

Enclosed herewith is Commission Order No. R-4027, entered in Case No. 4415, approving the Jeped Camp Artesia Waterflood Project.

Injection is to be through the five authorized water injection wells, with injection to be through plastic-lined tubing set in a packer. Packers shall be set as near as practicable to the uppermost perforation, or, in the case of open-hole completions, as near as practicable to the casing shoe.

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 854 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

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

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:

CASE No. 4415

Order No. R-4027

APPLICATION OF DEPCO, INC.,
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 September 2, 1970,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this day of September, 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, Depco, Inc.,
seeks authority to institute a waterflood project in the
=====Unit=Area7= Artesia Pool
by the injection of water into the Grayburg and San Andres formations
through one injection wells in Sections 27, 33, and 34,
Township 18 Norxx South, Range 28 West East,
NMPM, Eddy County, New Mexico.

(3) That the applicant further seeks an administrative
procedure whereby said project could be expanded to include
additional lands and 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)

which previously submitted water injection. One of the Engineer's W-1's,
(7) That Order No. R-3454, *for approval,* should be superseded.

(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, Depco, Inc.,

is hereby authorized to institute a waterflood project in the

Unit Area, Artesia Pool

by the injection of water into the Grayburg and San Andres formations

through the following-described wells in Township 18

~~North~~, South, Range 28 ~~West~~ East, NMPM, Eddy

County, New Mexico:

Depco State 647 Well No. 100 - Unit A - Section 27 ✓
Depco State 647 Well No. 82 - Unit F - Section 27 ✓
Depco State 647 Well No. 92 - Unit N - Section 27 ✓
Depco State 647 Well No. 207 - Unit I - Section 33 ✓
Depco State 647 Well No. 217 - Unit E - Section 34 ✓

(2) That the subject waterflood project is hereby designated the Depco Camp Artesia Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations;

on the State 647 Lease
PROVIDED HOWEVER, That the Secretary-Director of the Commission may approve expansion of the Depco Camp Artesia Waterflood Project to include such additional lands and injection wells in the area of the 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)

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