

CASE NO. 5357: Appli. of ANADARKO
PROD. CO. for a waterflood project
Eddy County, New Mexico

CASE No.

5357

Application,

Transcripts,

Small Exhibits

ETC.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
October 30, 1974

EXAMINER HEARING

IN THE MATTER OF:

Application of Anadarko Production Company)CASES
for a unit agreement, Eddy County, New Mexico.)5356
and
Application of Anadarko Production Company)5357
for a waterflood project, Eddy County,
New Mexico.)

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil William Carr, Esq.
Conservation Commission: Legal Counsel for the Commission
 State Land Office Building
 Santa Fe, New Mexico

For the Applicant: Tom Kellahin, Esq.
 KELLAHIN & FOX
 500 Don Gaspar
 Santa Fe, New Mexico

THE NYE REPORTING SERVICE
STATE-WIDE DEPOSITION NOTARIES
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MR. NUTTER: The hearing will come to order,
whatever hearing we have got.

We will call Case Number 5356.

MR. CARR: Case 5356, application of Anadarko
Production Company for a unit agreement, Eddy County, New
Mexico.

MR. NUTTER: Do you want to consolidate these
cases?

MR. CARR: Yes, with the next one.

MR. NUTTER: We will also at this time call
Case Number 5357.

MR. CARR: Case 5357, application of Anadarko
Production Company for a waterflood project, Eddy County,
New Mexico.

MR. NUTTER: For the purpose of hearing, Case
Number 5356 and Number 5357 will be consolidated. Would
you proceed, please?

MR. KELLAHIN: Tom Kellahin of Kellahin and Fox,
Santa Fe, New Mexico, appearing on behalf of the applicant,
and I have one witness who is to be sworn.

(Whereupon, the witness was duly sworn.)

DANIEL G. KERNAGHAN

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you please state your name?

A Dan Kernaghan.

Q How do you spell that last name?

A K-E-R-N-A-G-H-A-N.

Q By whom are you employed, and in what capacity?

A By Anadarko Production Company as Division

Evaluation Engineer.

Q Mr. Kernaghan, have you previously testified
before this Commission?

A Yes.

Q Are you familiar with the facts surrounding this
particular application by Anadarko?

A Yes.

MR. KELLAHIN: If the Examiner please, are the
witness' qualifications acceptable?

MR. NUTTER: Yes, they are.

BY MR. KELLAHIN:

Q Mr. Kernaghan, would you refer to what has been

marked as Applicant Exhibit No. 1, identify it and state briefly what Anadarko is seeking.

A This is the proposed unit outline, and the outline of the waterflood project that we are asking for, showing the surrounding production and the location with respect to nearby fields.

Q Refer to Exhibit No. 2 and identify it?

A Exhibit No. 2 is a more detailed outline of the project, showing the proposed injection and producing wells which we would like to drill.

(Whereupon, a discussion was held
off the record.)

BY MR. KELLAHIN:

Q Would you continue by indicating for us your proposed injection wells for the waterflooding?

A The proposed injection wells are designated here with triangles colored red; there are six of them. There are little numbers by them too, but they are hard to see. The two wells circled and colored in blue are the proposed producing wells. The other wells within the injection area, within the outline of the red triangles will be plugged and abandoned. We wish to continue to produce three other wells within the unit.

MR. NUTTER: So inside the waterflood pattern you will only have the two blue-circled wells producing?

MR. KERNAGHAN: That's right.

BY MR. KELLAHIN:

Q What's the formation in consideration here?

A It is basically the Grayburg, though some Queen and San Andres is possible. There is only one log in the unit area, and that log, when we logged the well last year, we didn't get all the way to the bottom. It appears like the majority of the production there is from the Grayburg, but we would like to include at least Queen and San Andres also in the project.

Q Please refer to what has been marked as Exhibit No. 3 and identify it?

A Exhibit 3 is a schematic completion diagram for the injection wells we propose to drill. They would all be completed according to this program.

Q Do you intend to inject your water under pressure?

A Yes, we do.

Q What is that anticipated pressure?

A Two thousand pounds or less.

Q What is the source of your injection water?

A It would be fresh water purchased from Double

Eagle, the source will be the Ogallala formation.

Q What quantities do you anticipate injecting, Mr. Kernaghan?

A We anticipate 250 barrels a day per well, which will be 1500 a day for the project, although it may be slightly more than this to start with.

Q Are you presently producing any water?

A We're not producing any significant amount.

Q In the event that significant amounts of produced water are produced, what do you intend to do with it?

A We would mix it with the purchased water, and probably batch it, or also inject it.

Q Please refer to what has been marked as Exhibit 4 and identify it?

A Exhibit 4 is a copy of the one log from the unit area; we are submitting this in lieu of logs on the injection wells. The top of the Queen and the top of the Grayburg formations have been marked on this. Like I said the log does not go to the TD of the well and did not reach the San Andres.

Q I note that your six proposed injection wells are all at unorthodox locations?

A Yes.

Q The exact description for those locations is as it appears on Exhibit B attached to the application in this Case; are those distances still correct?

A That is correct.

Q And, you would seek approval of the unorthodox injection locations?

A Yes, we do.

Q You would also request permission from the Commission to set up an administrative procedure whereby you may modify or expand the unit, including the drilling of additional injections and/or producing wells at both orthodox and unorthodox well locations without notice and hearing?

A Well, we do because as you can see, there is approximately 160 acres to the north of our northernmost injection well that is not included in the initial phase of development, and depending on results of the first phase, we would like to have the opportunity to expand into that area.

Q Please refer to what has been marked as Applicant Exhibits 5 through 12, and summarize for me the information contained on those exhibits?

A These exhibits show the monthly production as

reported to the State from each 40-acre tract. A few of these tracts have multiple wells on them, but the production was pretty hard to separate out as to what came from each well, so in lieu of individual well production we're submitting it by 40-acre units.

Q Each of the Exhibits, 5 through 12, indicate that each producing unit has substantially declined in production?

A Yes, it has.

Q In your opinion, Mr. Kernaghan, has production declined to such a point that you would recommend the institution of secondary recovery by waterflood?

A It has, and I would.

Q Please refer now to what has been marked as Applicant Exhibit No. 13 and explain it?

A These are the graphical presentation of the data shown on Exhibit 12; it's the monthly production from individual 40-acre tracts. You can see the production has been marginal since a few years after the wells were drilled.

Q In your opinion can this unit area be successfully and economically waterflooded?

A Yes, in my opinion it can.

Q Will the proposed waterflood result in a recovery of oil that otherwise would not be recovered?

A Yes, it would.

Q Will the proposed waterflood area adversely affect the correlative rights of others?

A I don't believe that it will.

Q Please refer to what has now been marked as Applicant Exhibit No. 14, that's your unit agreement, and would you describe for us the source of your form?

A The source of our form is that approved by the State Land Office; it is a standard form that they have requested in the past.

Q And, the unit area pertaining to this unit agreement corresponds to the unit area as described on Exhibit No. 2?

A Yes, it does. The description of the unit area is shown on Exhibit B, also on Exhibit A attached to the agreement.

Q Is this all State acreage, Mr. Kernaghan?

A This is all State acreage.

Q What percentage of the unit area is controlled by Anadarko?

A One hundred percent.

Q Anadarko holds one hundred percent of the working interest?

A That's correct.

Q With regards to the royalty interests, what percentage have ratified the agreement?

A One hundred percent. The basic royalty is all the State of New Mexico, and the Land Office has agreed to the unit; the overrides have ratified in total.

Q Does the unit agreement also contain a unit-operating agreement?

A No, it does not.

Q Anadarko will be the operator of the unit?

A Anadarko will be the operator, and like I say, the owner of one hundred percent of the working interest, so an operating agreement is unnecessary.

Q Would you please refer to what has been marked Applicart Exhibit No. 15, that's a letter from the Land Commission. You have preliminary approval from the Land Office, do you?

A Yes, we do. We have a letter stating that the unit agreement is approved as a project and as to form and content.

Q In your opinion, Mr. Kernaghan, will approval of

the unit agreement be in the best interests of conservation, the prevention of waste, and the protection of correlative rights of others?

A Yes, I believe it will.

MR. KELLAHIN: If the Examiner please, we move the introduction of Exhibits 1 through 15.

MR. NUTTER: Exhibits 1 through 15 will be admitted into evidence.

(Whereupon, Applicant's Exhibits 1 through 15 were admitted into evidence.)

MR. KELLAHIN: That concludes our direct examination.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Kernaghan, the unitized formation, according to the unit agreement would be of those formations from 900 feet below the surface to 2000 feet below the surface?

A Yes, sir.

Q Now, that would include the Queen, the Grayburg, and the San Andres formations?

A That's right, and possibly some Seven Rivers.

Q Seven Rivers is at the top?

A Yes. Now, Seven Rivers is out of the bounds of the

Artesia field. The reason for including this in the unit is that we have almost no geologic information on this area, and in drilling these new wells we hope, you know, to gain enough information to improve the flood. In the event substantial portions of permeable formations are found in the Seven Rivers, we would like to come back at a later date and include, if possible, in the flood, but at the present time we are just asking for a flood of the Queens, Grayburg and San Andres which are within the field limits.

Q Now, Exhibit 4 doesn't show the top of the San Andres; what would the approximate top of the San Andres be in here?

A It would be about 2000 feet.

Q I see.

A The reason that the unit agreement of -- the definition of the unitized formation is given here by depth. It was essentially impossible to include any picked point on a log, and also the fact that our rights only go to 2000 feet on some of these leases.

Q I think Exhibit B to the unit agreement shows you've got 2100 feet?

A We have 2100 in some of them.

Q There is one here that only goes to 2000?

A Yes.

Q Now Exhibit No. 3, is it a typical injection well? You don't show the depth of the perforations or the setting depth of the packer; what would be the relationship between the packer and the uppermost perforation?

A The packer is set approximately 30 feet above the highest perf, we like to keep it a joint or less above the top of the perforation.

Q Okay, I had missed that on the exhibit.

A We don't know, like I say, definitely where the wells will be perforated.

Q Right, but the packer would be set 30 feet above the uppermost perf?

A Right.

MR.NUTTER: Are there any further questions of the witness? He may be excused.

Do you have anything further, Mr. Kellahin?

MR. KELLAHIN: No, sir.

MR. NUTTER: Does anyone have anything to offer in Case 5356 or 5357? We will take the cases under advisement.

THE NYE REPORTING SERVICE
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OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

November 5, 1974

L. R. TRUJILLO
CHAIRMAN
LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER
STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

**Mr. Tom Kellahin
Kellahin & Fox
Attorneys at Law
Post Office Box 1769
Santa Fe, New Mexico**

Re: CASE NO. 5357
ORDER NO. R-4907
Applicant:
Anadarko Production Company

Dear Sir:

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

Very truly yours,

A. L. Porter, Jr.

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC	<u>x</u>
Artesia OCC	<u>x</u>
Aztec OCC	<u> </u>

Other State Engineer Office

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. 5357
Order No. R-4907

APPLICATION OF ANADARKO PRODUCTION
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 October 30,
1974, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 5th day of November, 1974, 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, Anadarko Production Company, seeks
authority to institute a waterflood project in the Artesia
State Unit Area, Artesia Pool, by the injection of water into
the Queen, Grayburg, and San Andres formations through six
injection wells at unorthodox locations in Township 18 South,
Range 27 East, NMPM, Eddy County, New Mexico, as follows:

Section 13: 1330 feet from the South line and
1310 feet from the West line;

10 feet from the South line and
10 feet from the West line;

Section 14: 2630 feet from the South line and
10 feet from the East line;

1310 feet from the South line and
1310 feet from the East line;

Section 23: 1310 feet from the North line and
1310 feet from the East line;

10 feet from the North line and
2630 feet from the East line.

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Case No. 5357
Order No. R-4907

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

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

(5) That the applicant seeks approval for the unorthodox location of two producing wells located as follows:

TOWNSHIP 18 SOUTH, RANGE 27 EAST, NMPM

Section 14: 1330 feet from the South line and
10 feet from the East line;

Section 23: 10 feet from the North line and
1310 feet from the East line.

(6) That the operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(7) That applicant further seeks an administrative procedure whereby the project may be expanded by the drilling of additional injection and producing wells at orthodox and unorthodox locations without further notice and hearing.

(8) 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.

IT IS THEREFORE ORDERED:

(1) That the applicant, Anadarko Production Company, is hereby authorized to institute a waterflood project in the Artesia State Unit Area, Artesia Pool, by the injection of water into the Queen, Grayburg, and San Andres formations through the following-described wells at unorthodox locations in Township 18 South, Range 27 East, NMPM, Eddy County, New Mexico:

Section 13: 1330 feet from the South line and
1310 feet from the West line;

10 feet from the South line and
10 feet from the West line;

-3-

Case No. 5357
Order No. R-4907

Section 14: 2630 feet from the South line and
10 feet from the East line;

1310 feet from the South line and
1310 feet from the East line;

Section 23: 1310 feet from the North line and
1310 feet from the East line;

10 feet from the North line and
2630 feet from the East line.

(2) That injection into each of said wells shall be through internally coated tubing, set in a packer which shall be located as near as practicable to the uppermost perforation; that the casing-tubing annulus of each injection well shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.

(3) That the operator shall immediately notify the supervisor of the Commission's Artesia district office of the failure of the tubing or packer in any of said injection wells, the leakage of water or oil from around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(4) That the subject waterflood project is hereby designated the Anadarko Production Company Artesia State Unit Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(5) That the applicant is hereby authorized to drill two producing wells at the following unorthodox locations:

TOWNSHIP 18 SOUTH, RANGE 27 EAST, NMPM

Section 14: 1330 feet from the South line and
10 feet from the East line;

Section 23: 10 feet from the North line and
1310 feet from the East line.

(6) The Secretary-Director of the Commission is hereby authorized to approve such additional producing wells and injection wells at orthodox and unorthodox locations within the boundaries of the Artesia State Unit Area as may be necessary to complete an efficient production and injection pattern, provided said wells are drilled no closer than 660 feet to the outer boundary of said unit nor closer than 10 feet to any quarter-quarter section or subdivision inner boundary. To obtain such approval, the project operator shall file proper application with the Commission, which application, if it seeks authorization to convert additional wells to injection or to drill additional production or injection wells

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Case No. 5357

Order No. R-4907

shall include the following:

- (a) A plat showing the location of proposed well, all wells within the project area, and offset operators, locating wells which offset the project area.
- (b) A schematic drawing of the proposed well which fully describes the casing, tubing, perforated interval, and depth.
- (c) A letter stating that all offset operators to the proposed well have been furnished a complete copy of the application and the data of notification.

The Secretary-Director may approve the proposed well if, within 20 days after receiving the application, no objection to the proposal is received. The Secretary-Director may grant immediate approval, provided waivers of objection are received from all offset operators.

(7) 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.

(8) 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

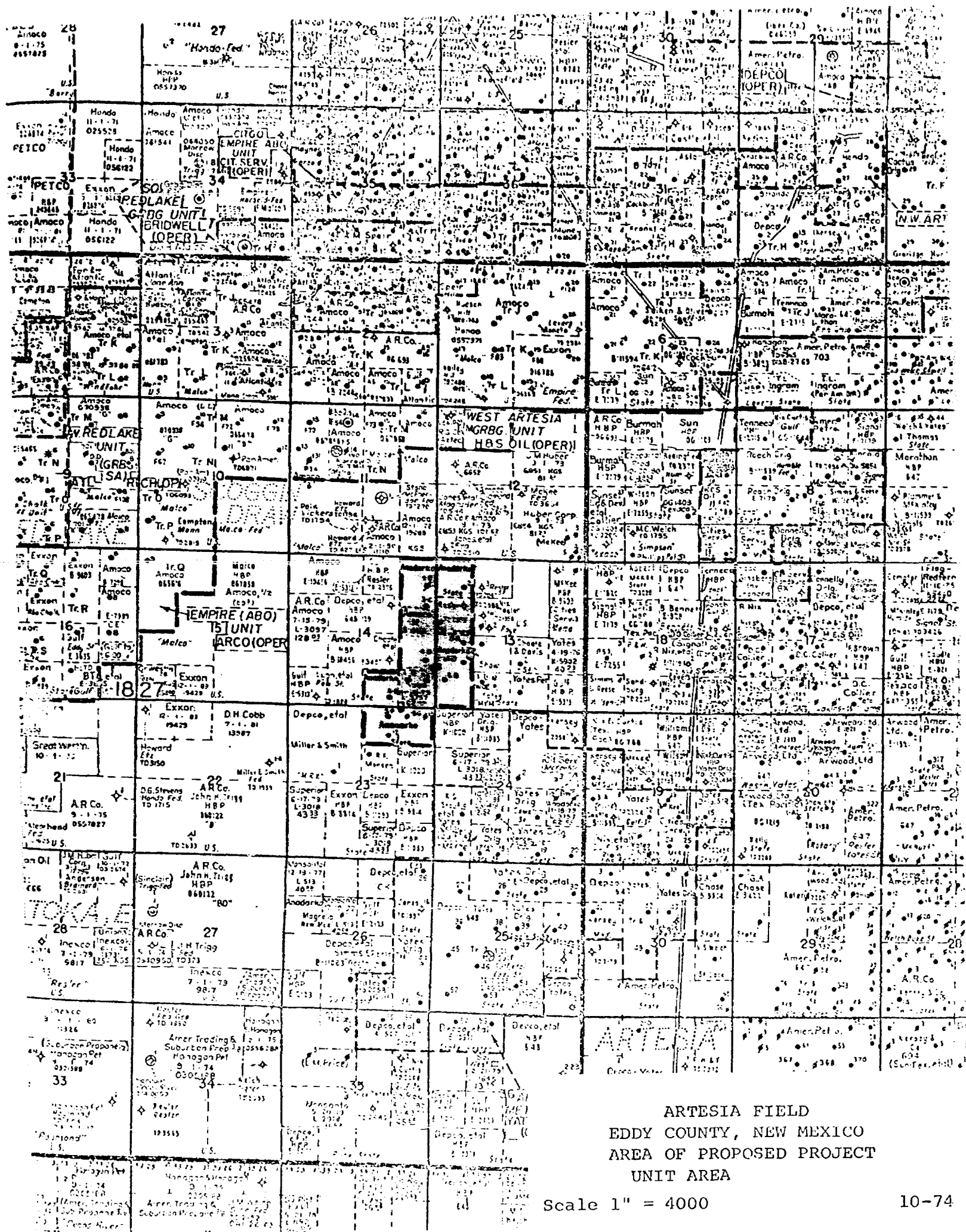
I. R. TRUJILLO, Chairman

ALEX J. ARMIJO, Member

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

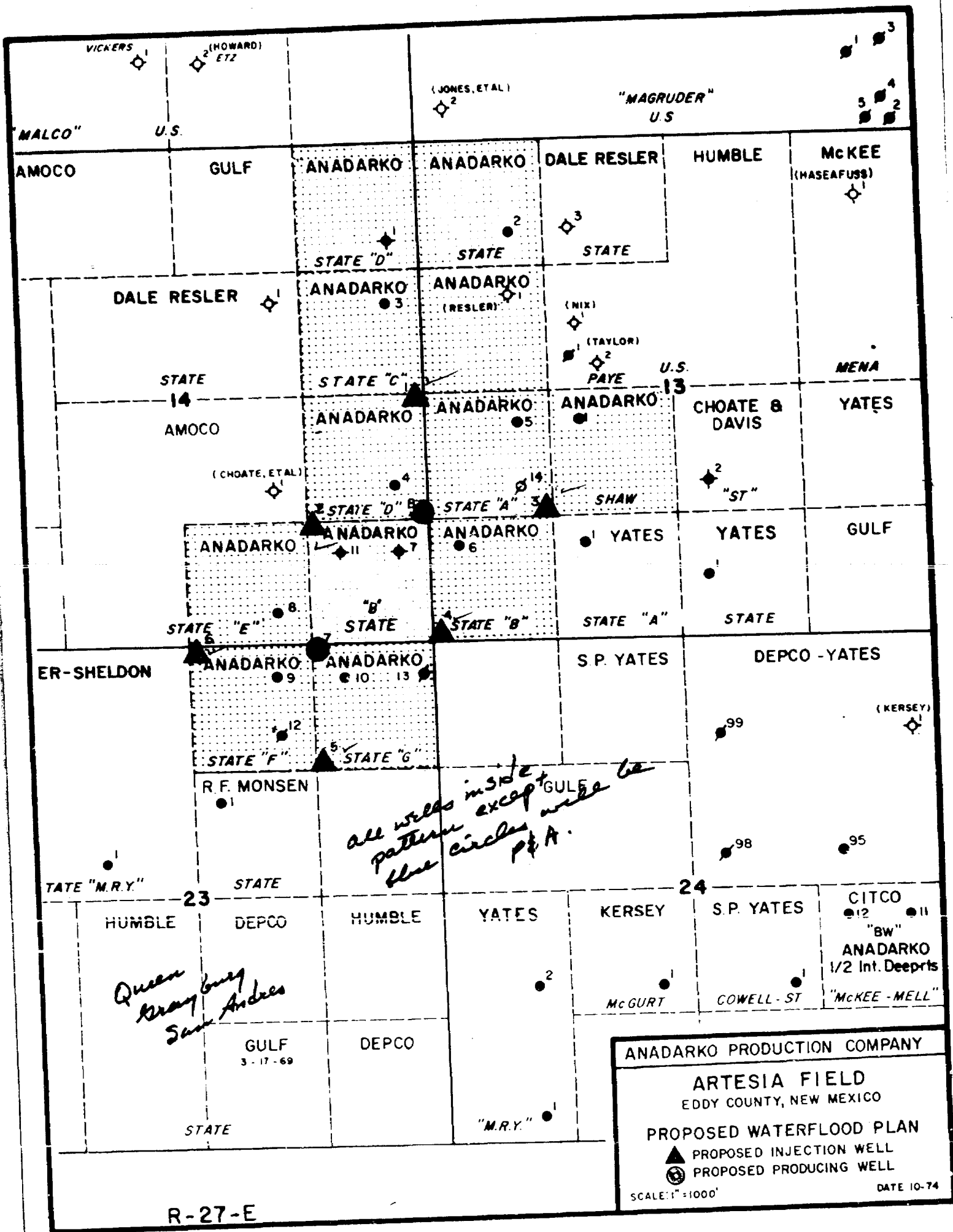
SEAL

dr/



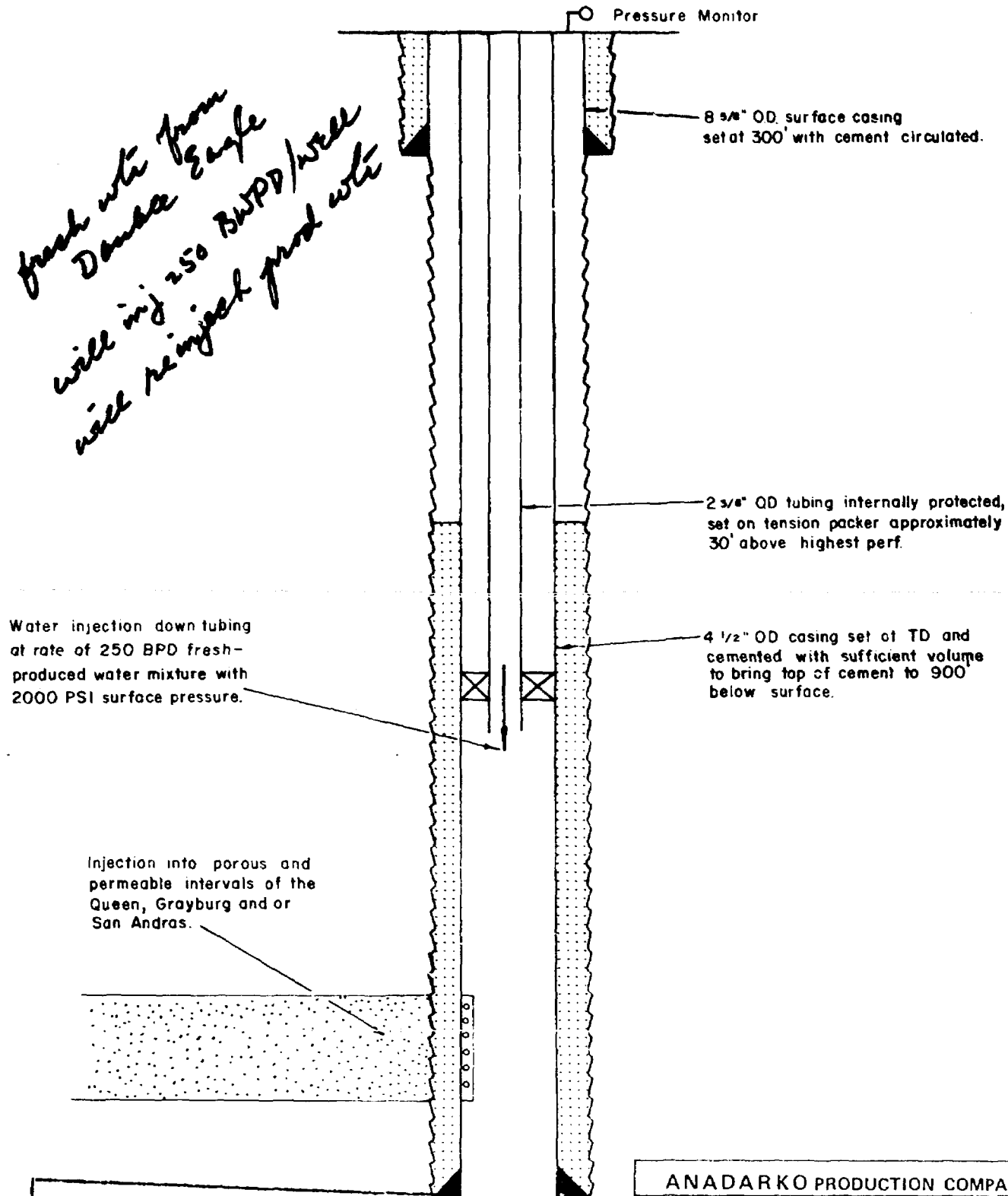
ARTESIA FIELD
EDDY COUNTY, NEW MEXICO
AREA OF PROPOSED PROJECT
UNIT AREA

Scale 1" = 4000



ARTESIA STATE UNIT
Sections 13, 14, & 23, T1B8 - R27E

*fresh wtr from
Dance Eagle
will inj 250 BWPD/well
will reinject prod wtr*



BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Anadarko EXHIBIT NO. 3
CASE NO. 5356-5357

ANADARKO PRODUCTION COMPANY
ARTESIA FIELD
Eddy County, New Mexico
- DIAGRAMMATIC SKETCH
OF
TYPICAL WATER INJECTION WELL
COMPLETION

ARTESIA FIELD
 EDDY COUNTY, NEW MEXICO
 ANADARKO NEW MEXICO STATE

BEFORE EXAMINER NUTTER
 OIL CONSERVATION COMMISSION
 EXHIBIT NO. 5
 CASE NO. 5356 - 5357

	<u>1946</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>
Jan.	183	161	177	219
Feb.	447	0	114	206
Mar.	209	149	433	198
Apr.	440	210	56	189
May	201	197	211	137
June	434	150	350	208
July	212	216	247	150
Aug.	401	230	223	184
Sept.	217	0	201	190
Oct.	260	204	218	136
Nov.	197	162	199	230
Dec.	203	173	201	147
	3404	1852	2630	2194

	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>
Jan.	165	133	115	0
Feb.	159	153	109	0
Mar.	157	139	102	0
Apr.	150	139	88	0
May	167	122	105	190
June	145	148	118	141
July	126	132	0	50
Aug.	91	122	0	240
Sept.	148	118	0	112
Oct.	128	127	0	94
Nov.	101	102	0	111
Dec.	90	104	0	145
	1627	1539	637	1083

	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>
Jan.	74	92	86	80
Feb.	61	85	78	63
Mar.	52	90	88	64
Apr.	0	80	84	71
May	88	90	83	72
June	41	92	56	32
July	107	75	67	74
August	99	100	61	71
Sept.	99	79	85	62
Oct.	89	91	81	73
Nov.	94	83	77	63
Dec.	91	90	75	88
	895	1047	921	813

	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>
Jan.	58	30	38	49
Feb.	33	62	55	31
Mar.	121	54	63	64
Apr.	2	63	52	123
May	47	0	58	24
June	36	69	33	58
July	64	67	54	0
Aug.	65	63	59	51
Sept.	45	47	53	51
Oct.	57	52	29	59
Nov.	65	49	55	37
Dec.	<u>53</u>	<u>68</u>	<u>39</u>	<u>58</u>
	646	624	588	605
	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>
Jan.	58	56	55	56
Feb.	51	49	11	47
Mar.	39	60	72	39
Apr.	52	32	53	51
May	55	47	52	50
June	49	27	38	49
July	43	50	54	55
Aug.	51	47	45	49
Sept.	50	36	42	53
Oct.	59	56	52	49
Nov.	52	51	63	53
Dec.	<u>36</u>	<u>47</u>	<u>46</u>	<u>43</u>
	595	558	583	594
	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>
Jan.	43	41	50	43
Feb.	45	49	42	42
Mar.	41	53	46	44
Apr.	53	0	47	41
May	54	57	49	47
June	53	47	44	58
July	43	52	37	42
Aug.	41	48	40	50
Sept.	51	35	45	50
Oct.	50	52	44	50
Nov.	57	45	43	48
Dec.	<u>54</u>	<u>47</u>	<u>47</u>	<u>39</u>
	585	526	534	554

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Jan.	43	50	43	45
Feb.	40	25	40	21
Mar.	45	37	43	40
Apr.	44	43	34	39
May	41	41	43	37
June	42	37	41	41
July	43	43	42	34
Aug.	42	40	42	20
Sept.	43	39	28	36
Oct.	44	43	43	41
Nov.	42	39	43	38
Dec.	<u>43</u>	<u>43</u>	<u>43</u>	<u>42</u>
	512	480	485	434

	<u>1974</u>
Jan.	38
Feb.	12
Mar.	22
Apr.	41
May	43
June	32
July	<u>38</u>
	226

ARTESIA FIELD
EDDY COUNTY, NEW MEXICO
ANADARKO NEW MEXICO STATE

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION

EXHIBIT NO. 6

CASE NO. 5356 1949 5357

	<u>1946</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>
Jan.	734	101	136	212
Feb.	630	0	212	143
Mar.	646	0	133	46
Apr.	682	0	214	0
May	396	356	206	321
June	209	416	177	92
July	425	0	108	90
Aug.	311	192	0	80
Sept.	201	229	355	48
Oct.	155	0	60	94
Nov.	0	375	0	140
Dec.	<u>191</u>	<u>338</u>	<u>164</u>	<u>76</u>
	4580	2007	1765	1342
	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>
Jan.	50	56	48	44
Feb.	233	66	50	38
Mar.	21	26	39	39
Apr.	134	74	47	45
May	76	41	40	32
June	71	69	45	44
July	72	47	37	30
Aug.	0	45	47	53
Sept.	95	50	39	25
Oct.	53	45	44	52
Nov.	51	45	42	22
Dec.	<u>55</u>	<u>50</u>	<u>41</u>	<u>17</u>
	911	614	519	441
	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>
Jan.	25	33	0	30
Feb.	25	29	0	28
Mar.	14	32	0	31
Apr.	6	60	0	34
May	0	55	0	10
June	0	50	0	24
July	47	44	25	33
Aug.	0	8	60	24
Sept.	68	40	28	27
Oct.	38	40	31	33
Nov.	0	21	36	24
Dec.	<u>37</u>	<u>0</u>	<u>35</u>	<u>36</u>
	260	412	250	334

New Mexico State A

	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>
Jan.	24	28	27	25
Feb.	19	27	21	32
Mar.	33	27	32	24
Apr.	23	30	29	31
May	33	24	28	34
June	27	25	29	7
July	27	14	25	25
Aug.	33	30	26	33
Sept.	25	25	23	25
Oct.	11	25	25	26
Nov.	36	25	25	28
Dec.	<u>23</u>	<u>30</u>	<u>32</u>	<u>43</u>
	314	310	322	333
	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>
Jan.	23	28	19	25
Feb.	8	23	29	16
Mar.	14	27	25	19
Apr.	37	31	28	28
May	28	22	9	27
June	27	29	36	20
July	21	18	25	62
Aug.	24	25	24	6
Sept.	23	23	25	0
Oct.	35	22	24	3
Nov.	7	26	17	25
Dec.	<u>35</u>	<u>28</u>	<u>31</u>	<u>61</u>
	282	302	292	292
	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>
Jan.	25	24	26	23
Feb.	25	23	25	27
Mar.	29	35	26	6
Apr.	47	26	26	1
May	4	22	27	12
June	30	25	24	4
July	22	24	21	31
Aug.	24	34	19	44
Sept.	23	25	24	52
Oct.	28	30	24	15
Nov.	27	26	25	34
Dec.	<u>26</u>	<u>27</u>	<u>24</u>	<u>49</u>
	310	321	291	298

New Mexico State A

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Jan.	33	45	40	43
Feb.	43	41	36	38
Mar.	46	39	39	28
Apr.	50	34	40	34
May	35	50	39	35
June	42	39	40	26
July	41	45	26	15
Aug.	32	44	36	3
Sept.	47	37	27	7
Oct.	24	44	34	7
Nov.	13	42	13	6
Dec.	<u>41</u>	<u>41</u>	<u>43</u>	<u>4</u>
	447	501	413	246

	<u>1974</u>
Jan.	6
Feb.	25
Mar.	24
Apr.	20
May	18
June	26
July	<u>30</u>
	149

ARTESIA FIELD
EDDY COUNTY, NEW MEXICO
ANADARKO NEW MEXICO STATE

BEFORE THE COMMISSION
OIL CONSERVATION COMMISSION
CASE NO. 5356 - 5357
7

	<u>1946</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>
Jan.	538	235	0	99
Feb.	643	0	193	0
Mar.	218	214	104	141
Apr.	381	191	79	0
May	474	0	63	113
June	487	201	0	61
July	315	0	91	109
Aug.	100	249	189	47
Sept.	90	0	71	0
Oct.	0	129	87	102
Nov.	206	143	0	45
Dec.	0	0	112	39
	<u>3452</u>	<u>1362</u>	<u>989</u>	<u>756</u>
	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>
Jan.	45	33	25	18
Feb.	47	33	26	20
Mar.	37	29	28	19
Apr.	35	30	19	22
May	41	31	23	20
June	0	31	42	33
July	81	30	25	41
Aug.	42	24	22	17
Sept.	0	20	21	8
Oct.	58	26	24	11
Nov.	36	30	22	11
Dec.	27	25	21	8
	<u>449</u>	<u>342</u>	<u>298</u>	<u>228</u>
	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>
Jan.	19	20	20	22
Feb.	0	19	17	18
Mar.	3	19	17	16
Apr.	0	26	16	18
May	0	16	18	13
June	0	21	18	21
July	27	21	22	20
Aug.	6	16	14	16
Sept.	0	21	19	18
Oct.	0	16	22	24
Nov.	6	15	19	20
Dec.	15	17	20	18
	<u>76</u>	<u>227</u>	<u>222</u>	<u>224</u>

New Mexico State B

Jan.	<u>1958</u>
Feb.	23
Mar.	22
Apr.	22
May	14
June	22
July	17
Aug.	22
Sept.	12
Oct.	19
Nov.	20
Dec.	15
	<u>17</u>
	225

<u>1959</u>
26
21
20
26
19
22
29
17
20
28
20
<u>15</u>
263

<u>1960</u>
20
15
22
23
26
28
4
23
26
18
22
<u>22</u>
249

<u>1961</u>
50
5
21
18
39
25
30
33
42
38
47
<u>29</u>
377

Jan.	<u>1962</u>
Feb.	24
Mar.	15
Apr.	22
May	30
June	64
July	45
Aug.	39
Sept.	52
Oct.	33
Nov.	44
Dec.	46
	<u>29</u>
	443

<u>1963</u>
72
19
79
55
47
71
45
63
34
64
54
<u>69</u>
672

<u>1964</u>
69
46
51
55
20
59
70
80
47
80
61
<u>25</u>
663

<u>1965</u>
63
64
73
45
72
74
60
75
62
74
48
<u>71</u>
781

Jan.	<u>1966</u>
Feb.	51
Mar.	59
Apr.	20
May	62
June	47
July	91
Aug.	73
Sept.	65
Oct.	67
Nov.	60
Dec.	74
	<u>63</u>
	732

<u>1967</u>
71
51
44
73
62
47
55
41
36
36
40
<u>28</u>
584

<u>1968</u>
1
5
32
40
36
34
41
18
12
16
9
<u>19</u>
263

<u>1969</u>
12
15
13
16
11
11
14
12
13
9
10
<u>11</u>
147

New Mexico State B

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Jan.	10	7	10	8
Feb.	10	9	6	8
Mar.	9	5	6	7
Apr.	3	4	4	6
May	8	2	4	5
June	5	3	6	6
July	5	5	6	2
Aug.	8	5	4	4
Sept.	7	3	4	4
Oct.	10	4	7	5
Nov.	5	7	5	7
Dec.	<u>8</u>	<u>7</u>	<u>6</u>	<u>7</u>
	88	61	68	69

	<u>1974</u>
Jan.	4
Feb.	7
Mar.	5
Apr.	8
May	5
June	5
July	<u>5</u>
	39

ARTESIA FIELD
EDDY COUNTY, NEW MEXICO
ANADARKO NEW MEXICO STATE

BEFORE EXAMINED NUTTER

OIL CONSERVATION COMMISSION

C EXHIBIT NO. 8
CASE NO. 5358 - 5367

	<u>1946</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>
Jan.	447	230	0	86
Feb.	206	202	193	0
Mar.	448	173	200	155
Apr.	431	0	137	0
May	374	165	0	152
June	148	417	192	98
July	326	184	0	70
Aug.	355	221	211	76
Sept.	217	0	83	57
Oct.	184	172	82	88
Nov.	0	198	101	110
Dec.	186	225	76	60
	3322	2187	1275	952
	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>
Jan.	65	37	39	35
Feb.	63	49	39	30
Mar.	0	56	42	35
Apr.	105	48	31	50
May	56	42	39	21
June	0	57	43	58
July	112	39	32	36
Aug.	73	41	41	34
Sept.	0	46	38	36
Oct.	91	37	36	33
Nov.	56	40	32	14
Dec.	56	26	34	25
	677	518	446	407
	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>
Jan.	22	22	29	23
Feb.	14	28	24	21
Mar.	22	23	22	18
Apr.	8	31	23	21
May	57	25	26	20
June	15	26	23	24
July	30	31	27	25
Aug.	27	23	18	20
Sept.	27	27	21	19
Oct.	33	25	23	26
Nov.	24	18	21	14
Dec.	25	2	20	22
	304	281	277	253

New Mexico State C

	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>
Jan.	26	17	20	8
Feb.	22	18	18	17
Mar.	22	21	15	21
Apr.	18	25	37	20
May	24	17	10	21
June	20	13	21	14
July	23	24	16	11
Aug.	22	19	15	23
Sept.	20	20	21	13
Oct.	20	21	15	18
Nov.	18	12	16	17
Dec.	<u>21</u>	<u>19</u>	<u>18</u>	<u>17</u>
	256	226	222	200

	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>
Jan.	17	20	19	23
Feb.	19	17	15	12
Mar.	8	21	15	14
Apr.	16	17	15	21
May	22	16	24	16
June	18	19	21	15
July	20	17	19	18
Aug.	22	15	16	17
Sept.	17	18	13	15
Oct.	15	16	23	12
Nov.	19	15	13	14
Dec.	<u>5</u>	<u>2</u>	<u>7</u>	<u>22</u>
	198	193	200	199

	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>
Jan.	8	13	13	14
Feb.	15	15	17	15
Mar.	21	18	14	16
Apr.	8	14	14	20
May	15	17	20	16
June	18	12	13	20
July	15	16	14	17
Aug.	13	15	14	12
Sept.	18	17	14	20
Oct.	13	12	18	14
Nov.	13	14	12	16
Dec.	<u>18</u>	<u>17</u>	<u>13</u>	<u>14</u>
	175	180	176	194

New Mexico State C

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Jan.	14	17	14	13
Feb.	14	14	13	14
Mar.	16	14	12	11
Apr.	17	13	17	13
May	15	17	11	11
June	18	14	6	11
July	14	14	15	11
Aug.	15	15	12	14
Sept.	15	9	11	7
Oct.	13	14	14	6
Nov.	12	12	13	7
Dec.	<u>12</u>	<u>14</u>	<u>15</u>	<u>8</u>
	175	167	153	126

	<u>1974</u>
Jan.	8
Feb.	7
Mar.	2
Apr.	12
May	14
June	3
July	<u>10</u>
	56

ARTESIA FIELD
EDDY COUNTY, NEW MEXICO
ANADARKO NEW MEXICO STATE

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
D. _____ EXHIBIT NO. 9
CASE NO. 5356 - 5357

	<u>1946</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>
Jan.	420	206	199	111
Feb.	663	226	368	0
Mar.	650	411	216	164
Apr.	882	328	226	122
May	359	143	138	84
June	413	128	0	115
July	301	208	372	102
Aug.	430	439	188	90
Sept.	347	174	212	0
Oct.	208	0	199	79
Nov.	206	586	139	33
Dec.	<u>426</u>	<u>230</u>	<u>132</u>	<u>29</u>
	5305	3079	2389	929
	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>
Jan.	43	36	29	39
Feb.	42	25	37	33
Mar.	49	30	35	38
Apr.	30	45	35	44
May	45	39	33	33
June	43	24	35	50
July	42	38	31	30
Aug.	46	31	37	33
Sept.	0	35	32	30
Oct.	69	24	28	25
Nov.	33	37	35	0
Dec.	<u>37</u>	<u>33</u>	<u>33</u>	<u>22</u>
	479	397	400	377
	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>
Jan.	22	19	36	48
Feb.	26	25	22	50
Mar.	28	21	36	31
Apr.	28	25	27	49
May	12	23	38	63
June	25	27	36	55
July	30	27	46	81
Aug.	23	27	37	68
Sept.	24	29	47	111
Oct.	28	27	56	123
Nov.	25	25	57	100
Dec.	<u>18</u>	<u>28</u>	<u>50</u>	<u>88</u>
	289	303	488	867

New Mexico State D

	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>
Jan.	96	103	108	62
Feb.	109	91	66	80
Mar.	65	74	92	101
Apr.	98	87	78	61
May	99	14	62	72
June	62	77	84	89
July	100	97	35	73
Aug.	76	99	91	89
Sept.	63	100	51	78
Oct.	78	108	19	64
Nov.	73	65	79	56
Dec.	<u>82</u>	<u>116</u>	<u>51</u>	<u>69</u>
	1001	1031	816	894
	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>
Jan.	61	51	0	20
Feb.	47	74	9	34
Mar.	64	89	43	26
Apr.	65	8	45	19
May	37	19	38	60
June	73	88	22	44
July	90	94	39	29
Aug.	46	13	35	23
Sept.	56	0	30	26
Oct.	18	12	45	0
Nov.	31	85	24	56
Dec.	<u>75</u>	<u>75</u>	<u>36</u>	<u>25</u>
	663	608	366	362
	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>
Jan.	26	22	66	74
Feb.	26	26	47	75
Mar.	36	71	67	90
Apr.	27	44	60	76
May	28	38	72	52
June	29	127	66	29
July	5	0	64	68
Aug.	29	36	66	51
Sept.	0	64	60	101
Oct.	16	74	56	85
Nov.	32	51	60	83
Dec.	<u>40</u>	<u>80</u>	<u>58</u>	<u>51</u>
	294	633	742	835

New Mexico State D

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Jan.	86	103	85	8
Feb.	72	89	78	42
Mar.	48	88	53	54
Apr.	80	76	78	39
May	80	80	80	63
June	72	77	83	61
July	83	33	80	14
Aug.	78	79	58	8
Sept.	83	83	61	36
Oct.	86	67	33	43
Nov.	66	82	11	41
Dec.	<u>86</u>	<u>77</u>	<u>8</u>	<u>43</u>
	920	984	708	452

	<u>1974</u>
Jan.	8
Feb.	17
Mar.	14
Apr.	15
May	46
June	15
July	<u>18</u>
	133

ARTESIA FIELD
EDDY COUNTY, NEW MEXICO
ANADARKO NEW MEXICO STATE

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 10
CASE NO. 5356 - 5357

	<u>1946</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>
Jan.	760	114	358	176
Feb.	558	194	320	74
Mar.	553	328	350	298
Apr.	444	173	176	175
May	324	264	331	168
June	516	297	184	171
July	319	373	367	155
Aug.	340	468	480	167
Sept.	178	351	359	175
Oct.	183	298	132	154
Nov.	131	337	365	173
Dec.	<u>181</u>	<u>387</u>	<u>271</u>	<u>162</u>
	4487	3584	3693	2048
	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>
Jan.	136	137	114	0
Feb.	132	117	90	0
Mar.	161	105	123	0
Apr.	136	116	88	0
May	0	83	108	0
June	184	103	108	88
July	171	88	106	67
Aug.	139	92	102	76
Sept.	95	121	96	58
Oct.	120	91	101	46
Nov.	126	97	55	44
Dec.	<u>121</u>	<u>118</u>	<u>0</u>	<u>83</u>
	1521	1268	1091	462
	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>
Jan.	60	87	106	130
Feb.	0	85	90	109
Mar.	34	93	88	136
Apr.	83	102	99	125
May	61	98	97	125
June	75	96	119	124
July	64	105	100	96
Aug.	81	99	106	112
Sept.	81	112	85	109
Oct.	87	101	144	108
Nov.	86	96	127	102
Dec.	<u>84</u>	<u>103</u>	<u>137</u>	<u>101</u>
	796	1177	1298	1377

New Mexico State E

	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>
Jan.	113	64	59	51
Feb.	67	73	55	7
Mar.	90	73	51	60
Apr.	88	63	25	52
May	102	84	69	64
June	75	42	67	47
July	99	92	45	70
Aug.	91	63	67	70
Sept.	87	44	43	45
Oct.	90	74	28	80
Nov.	62	64	62	61
Dec.	<u>89</u>	<u>18</u>	<u>49</u>	<u>78</u>
	1053	754	620	685

	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>
Jan.	88	86	119	111
Feb.	68	108	93	117
Mar.	82	104	26	85
Apr.	74	92	83	148
May	94	90	111	89
June	77	103	81	122
July	93	93	108	66
Aug.	88	92	80	92
Sept.	64	0	57	90
Oct.	110	91	107	111
Nov.	72	97	12	74
Dec.	<u>104</u>	<u>53</u>	<u>76</u>	<u>136</u>
	1014	1009	953	1241

	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>
Jan.	117	79	111	131
Feb.	78	67	126	119
Mar.	104	113	130	136
Apr.	78	108	121	119
May	121	95	133	124
June	99	114	126	138
July	96	112	122	102
Aug.	104	132	121	135
Sept.	99	128	129	135
Oct.	104	99	118	105
Nov.	117	127	125	192
Dec.	<u>111</u>	<u>124</u>	<u>119</u>	<u>83</u>
	1228	1298	1481	1519

New Mexico State E

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Jan.	72	79	87	71
Feb.	129	124	82	63
Mar.	92	114	80	66
Apr.	96	122	89	78
May	145	126	79	54
June	124	123	84	27
July	129	100	61	61
Aug.	140	109	77	86
Sept.	102	101	45	46
Oct.	134	109	67	69
Nov.	132	101	75	70
Dec.	<u>122</u>	<u>87</u>	<u>81</u>	<u>72</u>
	1417	1295	907	763

	<u>1974</u>
Jan.	72
Feb.	43
Mar.	54
Apr.	39
May	17
June	46
July	<u>64</u>
	335

ARTESIA FIELD
EDDY COUNTY, NEW MEXICO
ANADARKO NEW MEXICO STATE

BEFORE EXAMINER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 11
CASE NO. 5356 - 5357

	<u>1946</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>
Jan.	1340	784	525	710
Feb.	923	488	646	677
Mar.	847	652	628	815
Apr.	692	555	534	714
May	953	794	479	536
June	855	521	437	697
July	909	647	1007	710
Aug.	750	708	846	704
Sept.	734	521	1066	651
Oct.	645	657	770	749
Nov.	569	799	848	739
Dec.	<u>694</u>	<u>559</u>	<u>675</u>	<u>684</u>
	9911	7685	8461	8386
	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>
Jan.	568	568	585	382
Feb.	519	561	334	346
Mar.	741	564	507	398
Apr.	524	565	476	362
May	391	529	378	372
June	783	374	531	295
July	523	545	384	323
Aug.	747	554	450	223
Sept.	714	553	415	246
Oct.	544	643	418	280
Nov.	572	536	401	411
Dec.	<u>566</u>	<u>489</u>	<u>411</u>	<u>536</u>
	7192	6481	5290	4174
	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>
Jan.	456	252	313	261
Feb.	432	191	294	260
Mar.	380	183	305	269
Apr.	444	88	306	190
May	361	264	267	276
June	425	317	279	233
July	546	320	292	282
Aug.	471	413	260	258
Sept.	471	391	306	193
Oct.	492	384	290	94
Nov.	415	356	280	180
Dec.	<u>338</u>	<u>324</u>	<u>285</u>	<u>182</u>
	5231	3483	3477	2678

New Mexico State F

	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>
Jan.	184	204	208	172
Feb.	203	208	126	115
Mar.	196	236	174	172
Apr.	182	39	135	150
May	193	24	232	157
June	89	0	198	144
July	258	140	227	131
Aug.	188	188	91	170
Sept.	182	156	9	160
Oct.	226	192	75	166
Nov.	154	206	190	148
Dec.	<u>231</u>	<u>164</u>	<u>149</u>	<u>77</u>
	2286	1757	1814	1762
	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>
Jan.	74	202	192	198
Feb.	113	169	173	150
Mar.	183	159	190	137
Apr.	151	56	174	199
May	96	43	177	161
June	72	1	165	189
July	86	141	131	151
Aug.	106	248	103	195
Sept.	141	161	152	156
Oct.	144	214	166	236
Nov.	180	173	193	190
Dec.	<u>153</u>	<u>158</u>	<u>161</u>	<u>194</u>
	1499	1725	1977	2156
	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>
Jan.	194	199	141	241
Feb.	154	27	143	103
Mar.	215	194	168	77
Apr.	213	165	157	251
May	163	232	172	281
June	208	221	181	237
July	182	160	199	234
Aug.	195	207	202	250
Sept.	169	229	174	200
Oct.	276	218	203	245
Nov.	217	212	163	214
Dec.	<u>215</u>	<u>215</u>	<u>172</u>	<u>220</u>
	2401	2279	2075	2553

New Mexico State F

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Jan.	209	209	204	191
Feb.	196	194	174	139
Mar.	199	210	195	203
Apr.	191	197	176	161
May	190	206	156	196
June	181	188	199	101
July	188	190	173	122
Aug.	187	164	180	192
Sept.	188	194	187	151
Oct.	195	208	147	178
Nov.	192	198	165	149
Dec.	<u>202</u>	<u>192</u>	<u>228</u>	<u>187</u>
	2318	2350	2184	1970

	<u>1974</u>
Jan.	190
Feb.	156
Mar.	149
Apr.	181
May	128
June	129
July	<u>168</u>
	1101

ARTESIA FIELD
EDDY COUNTY, NEW MEXICO
ANADARKO NEW MEXICO STATE

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 12
CASE NO. 5352-5357

1946
Jan. 385
Feb. 522
Mar. 366
Apr. 291
May 425
June 165
July 171
Aug. 167
Sept. 165
Oct. 144
Nov. 132
Dec. 123
3056

1947
150
189
182
176
171
0
172
141
0
190
157
105
1633

1948
0
124
176
360
222
330
188
287
183
153
115
105
2243

1949
121
89
194
69
122
115
76
91
0
149
80
539
1645

1950
Jan. 591
Feb. 414
Mar. 300
Apr. 487
May 199
June 376
July 304
Aug. 290
Sept. 467
Oct. 278
Nov. 264
Dec. 294
4264

1951
257
279
278
261
256
270
268
316
219
278
277
259
3218

1952
237
213
226
248
216
230
229
229
210
218
207
234
2702

1953
244
177
223
153
206
244
86
175
217
108
136
242
2211

1954
Jan. 216
Feb. 187
Mar. 197
Apr. 213
May 105
June 138
July 200
Aug. 209
Sept. 210
Oct. 230
Nov. 199
Dec. 204
2308

1955
221
202
201
147
184
178
97
80
151
57
52
54
1624

1956
58
40
59
56
99
204
205
218
236
174
262
202
1813

1957
182
185
204
200
204
174
190
102
246
204
165
206
2262

New Mexico State G

	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>
Jan.	187	61	23	70
Feb.	160	26	25	64
Mar.	186	36	50	59
Apr.	170	32	48	73
May	143	34	40	114
June	196	30	0	70
July	138	43	57	75
Aug.	109	40	64	82
Sept.	203	19	52	68
Oct.	156	25	20	67
Nov.	121	26	43	92
Dec.	<u>88</u>	<u>22</u>	<u>70</u>	<u>0</u>
	1857	394	492	834
	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>
Jan.	53	86	92	54
Feb.	85	36	69	57
Mar.	49	75	51	42
Apr.	78	71	67	56
May	71	9	83	71
June	52	78	39	47
July	74	76	77	28
Aug.	72	22	64	56
Sept.	35	0	71	46
Oct.	65	70	77	41
Nov.	80	74	28	52
Dec.	<u>51</u>	<u>54</u>	<u>44</u>	<u>40</u>
	765	651	762	590
	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>
Jan.	45	35	28	18
Feb.	25	175	0	22
Mar.	17	34	27	23
Apr.	34	56	29	20
May	19	7	27	22
June	52	25	23	20
July	27	31	27	23
Aug.	45	28	27	19
Sept.	24	28	21	21
Oct.	49	31	17	21
Nov.	37	30	17	18
Dec.	<u>36</u>	<u>29</u>	<u>22</u>	<u>20</u>
	410	509	265	247

New Mexico State G

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Jan.	19	13	11	3
Feb.	17	9	12	5
Mar.	17	19	10	12
Apr.	18	14	13	13
May	19	18	18	12
June	13	15	17	11
July	18	18	26	12
Aug.	18	12	20	11
Sept.	18	13	17	10
Oct.	14	15	18	6
Nov.	16	13	5	9
Dec.	<u>17</u>	<u>11</u>	<u>4</u>	<u>8</u>
	204	170	171	112

	<u>1974</u>
Jan.	10
Feb.	8
Mar.	9
Apr.	16
May	9
June	17
July	<u>16</u>
	85

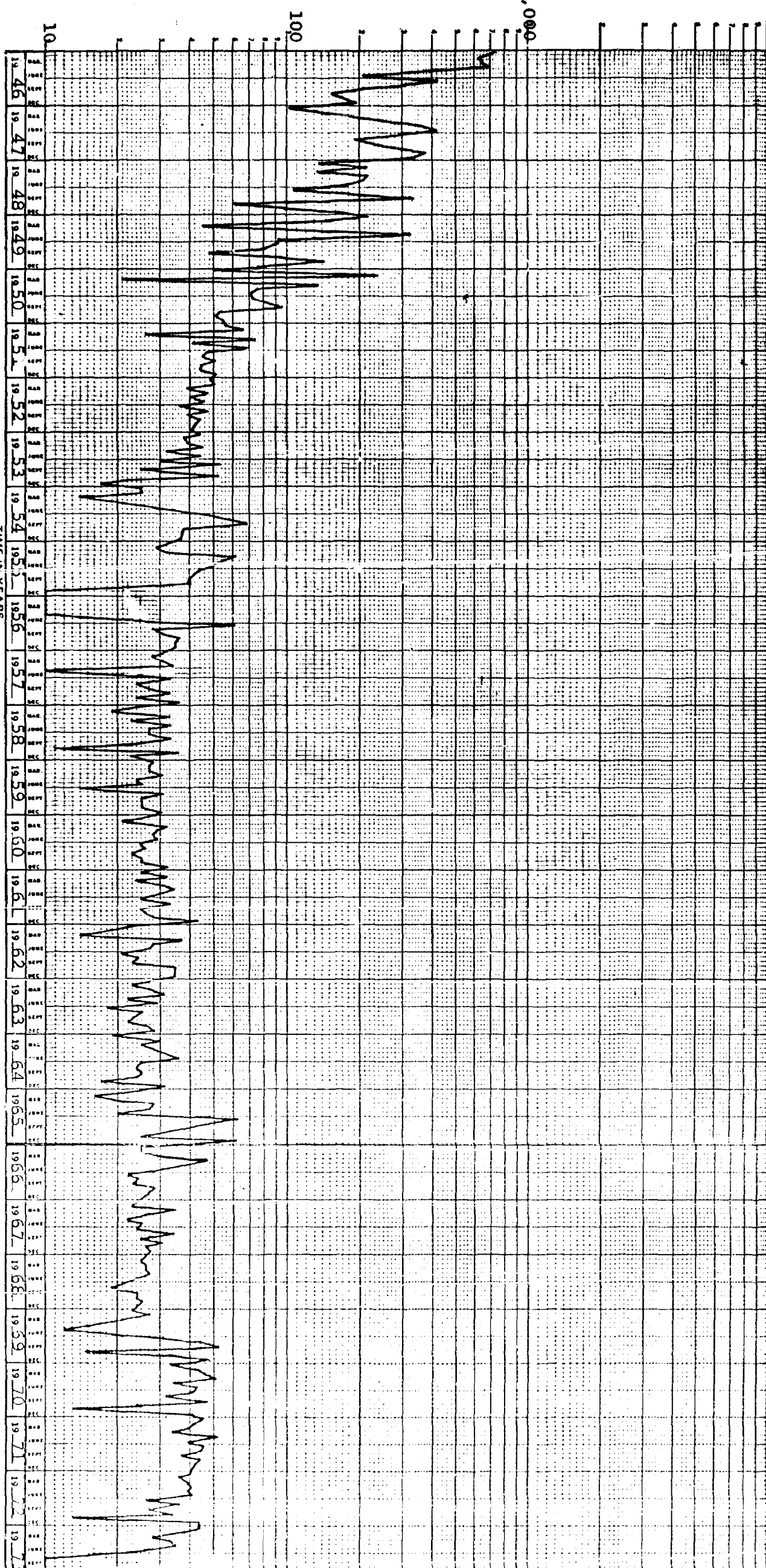
FIELD: Artesia
LEASE/UNIT: New Mexico State A

RESERVOIR: _____
PERFS: _____

CO./PH. _____

STATE: New Mexico
OPERATOR: Anadarko Production Co.
LOCATION: _____

NO. WELLS: _____



ACCT. CODE NO. _____

LEASE NAME _____

WELL NO. _____

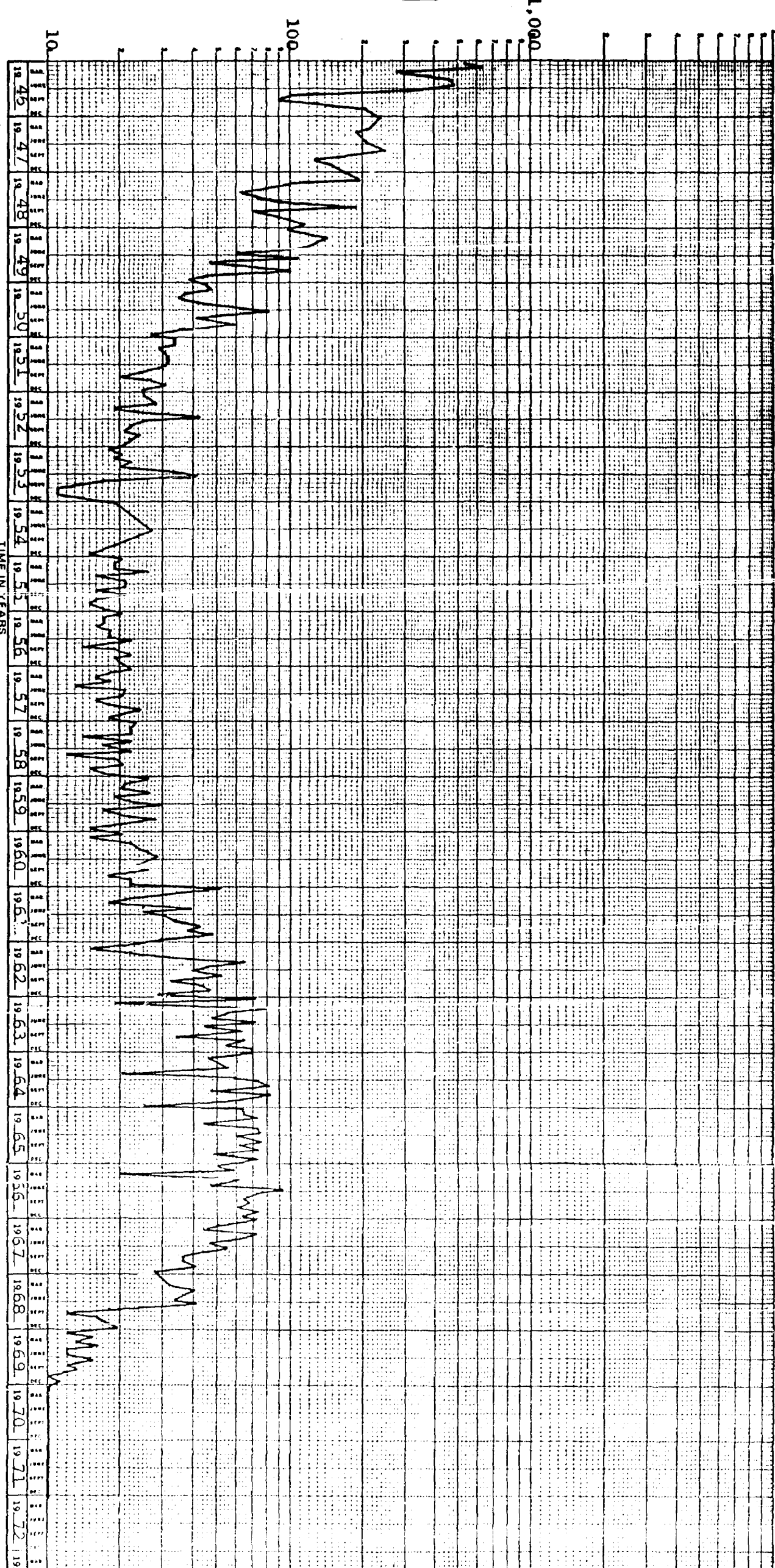
WELL NO. _____

FIELD: Artesia
LEASE/UNIT: New Mexico State B

NO. WELLS: _____

RESERVOIR: _____
PERFS: _____
CO./PH. _____

STATE: New Mexico
OPERATOR: Anadarko Production Co.
LOCATION: _____



ACCT. CODE NO. _____

LEASE NAME _____

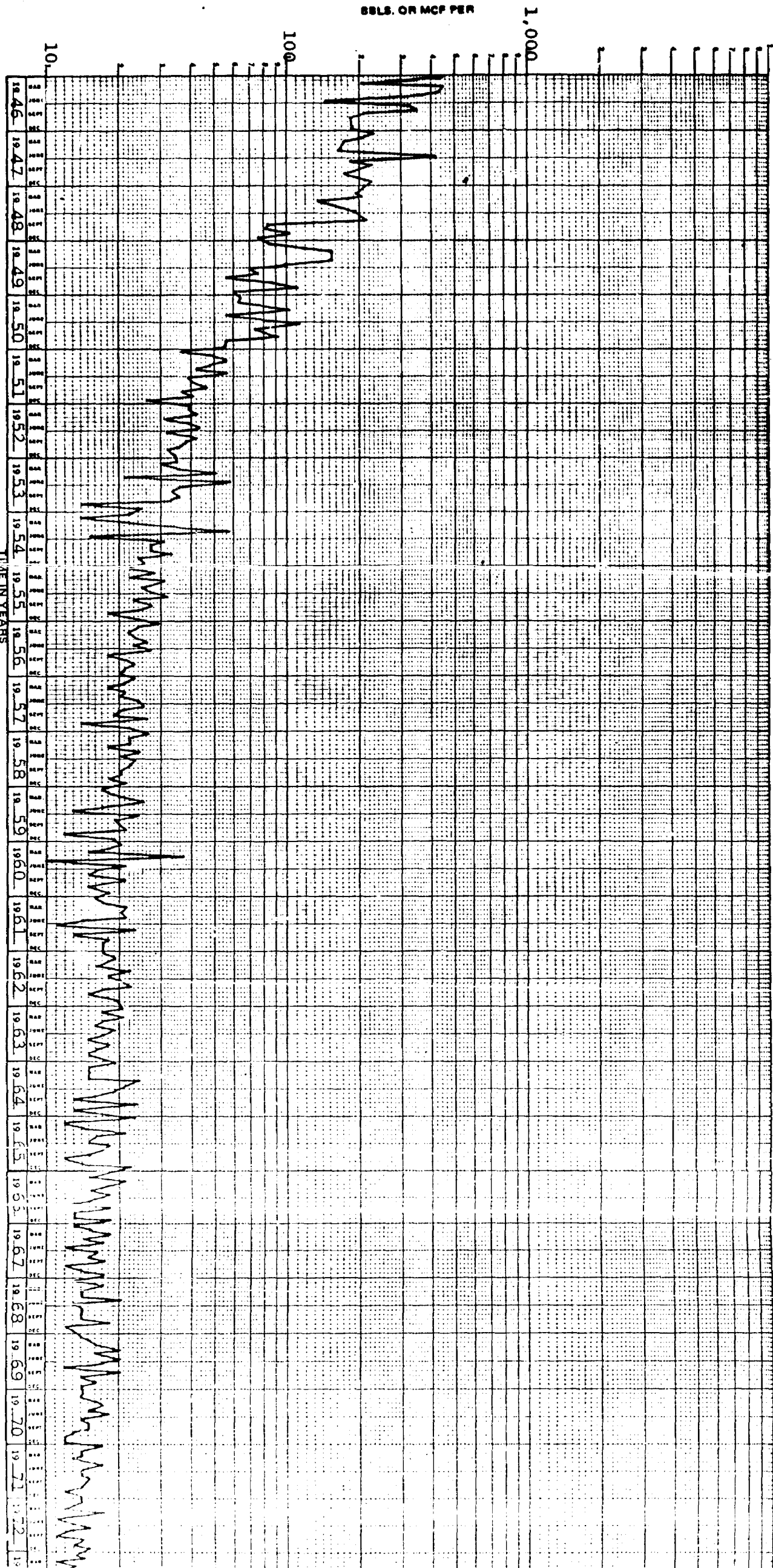
WELL NO. _____

WELL NO. _____

FIELD: Artesia
LEASE/UNIT: New Mexico State C

RESERVOIR: _____
PERFS: _____
CO./PH. _____

STATE: New Mexico
OPERATOR: Anadarko Production Co.
LOCATION: _____



ACCT. CODE NO. _____

LEASE NAME _____

WELL NO. _____

WELL NO. _____

BBLs. OR MCF PER

FIELD: Artesia

RESERVOIR: _____

STATE: New Mexico

LEASE/UNIT: New Mexico State D

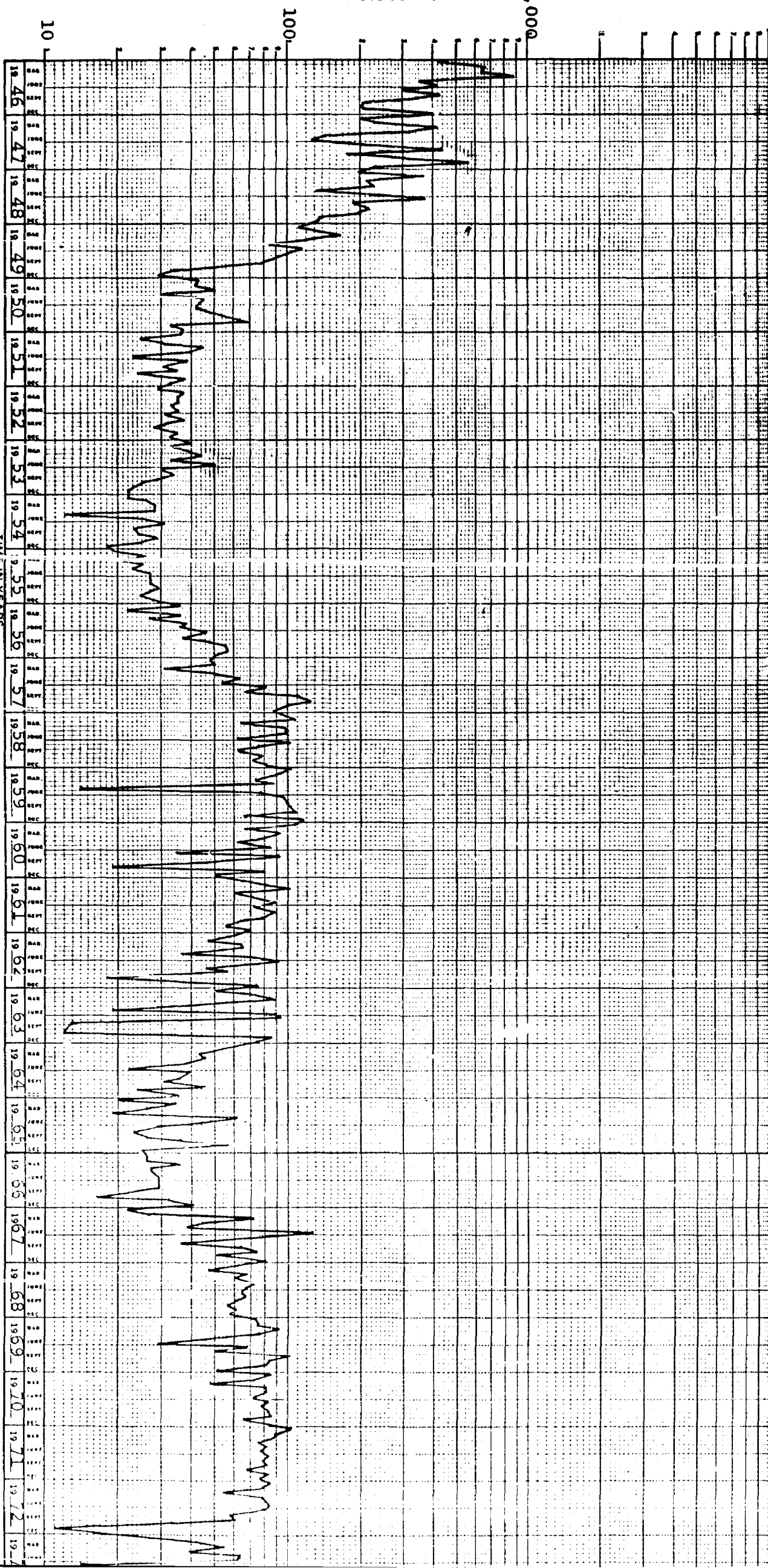
PERFS: _____

OPERATOR: Anadarko Production Co.

NO. WELLS: _____

CO./FH: _____

LOCATION: _____



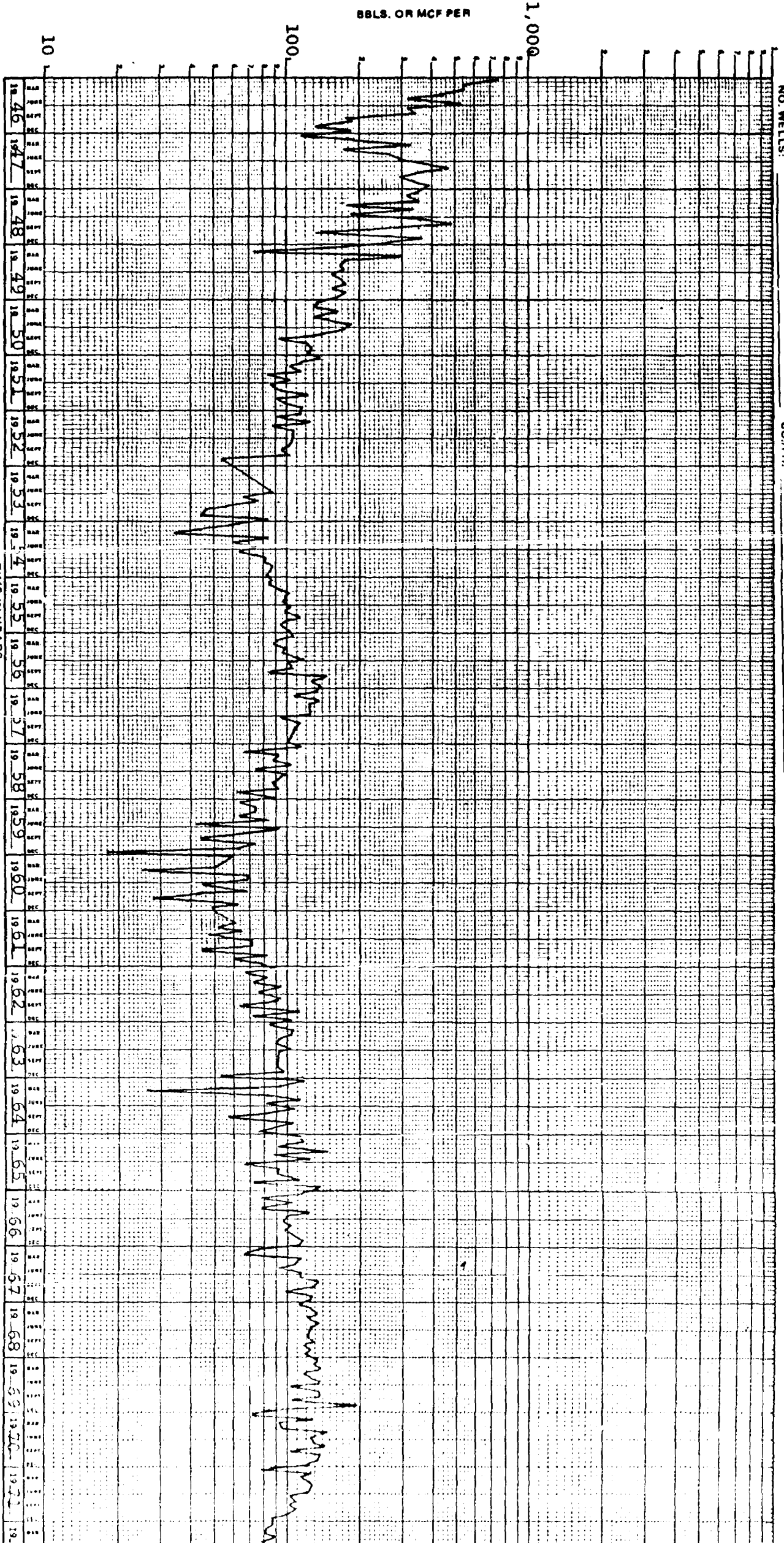
ACCT. CODE NO. _____

LEASE NAME _____

WELL NO. _____

WELL NO. _____

FIELD: Artesia RESERVOIR: _____ STATE: New Mexico
LE SE/UNIT: New Mexico State E PERFS: _____ OPERATOR: Anadarko Production Co.
NO. WELLS: _____ CO./PH: _____ LOCATION: _____



ACCT. CODE NO. _____ LEASE NAME _____ WELL NO. _____

58LS. OR MCF PER

FIELD: Artesia

RESERVOIR: _____

LEASE/UNIT: New Mexico State F

PERFS: _____

NO. WELLS: _____

CO./PH: _____

STATE: New Mexico

OPERATOR: Anadarko Production Co.

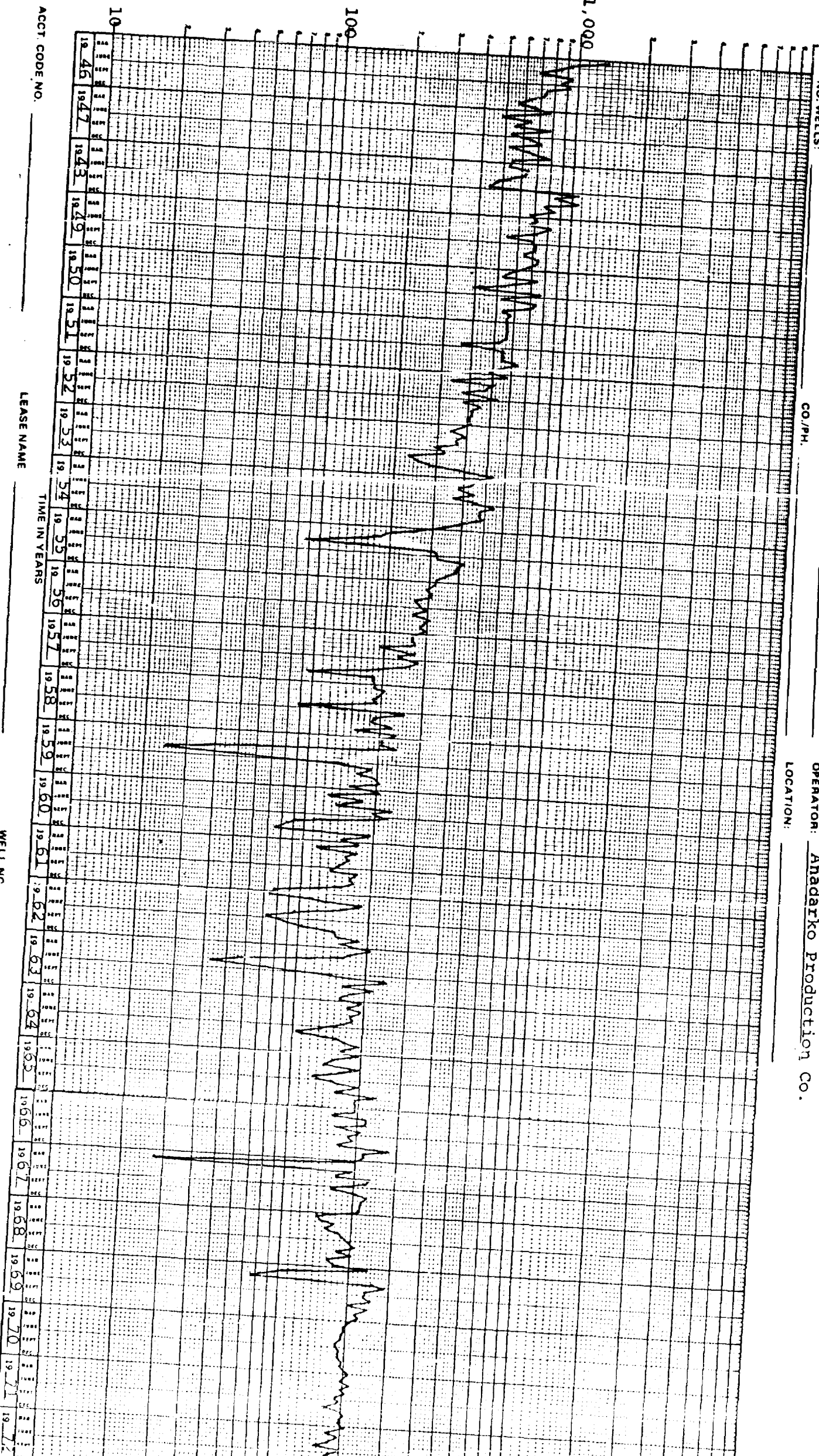
LOCATION: _____

ACCT CODE NO. _____

LEASE NAME _____

WELL NO. _____

WELL NO. _____



FIELD: Artesia
LEASE/UNIT: New Mexico State G

NO. WELLS:

RESERVOIR: _____
PERFS: _____
CO./PH: _____

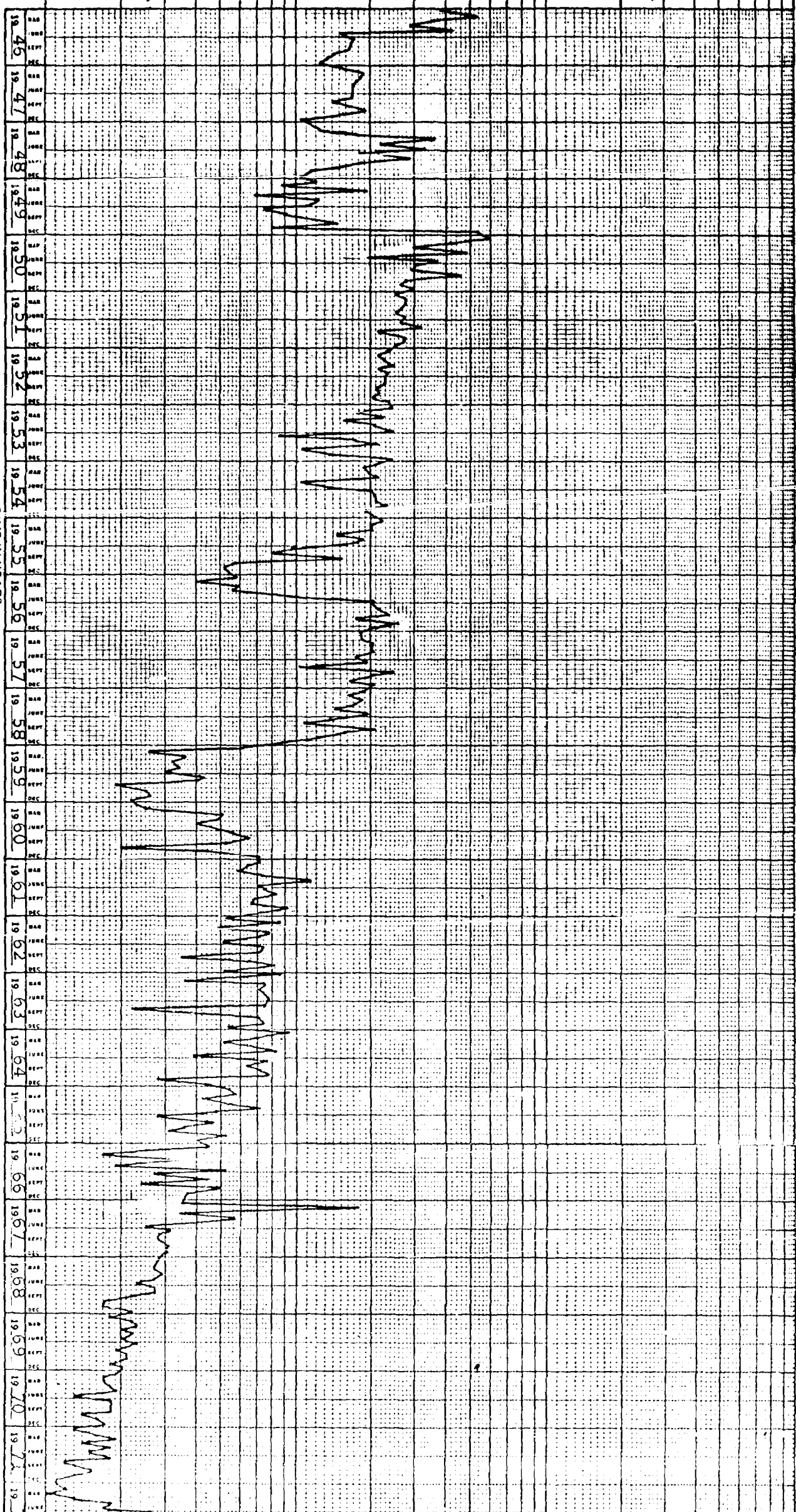
STATE: New Mex.:CO
OPERATOR: Anadarko Production Co.
LOCATION: _____

BBL'S. OR MCF PER

1,000

100

10



ACCT. CODE NO. _____

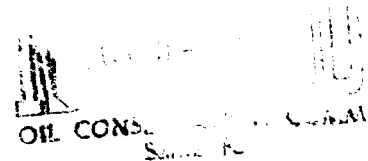
LEASE NAME _____

WELL NO. _____

WELL NO. _____

Case 5357

BEFORE THE
OIL CONSERVATION COMMISSION OF NEW MEXICO



IN THE MATTER OF THE APPLICATION
OF ANADARKO PRODUCTION COMPANY
FOR APPROVAL OF ITS ARTESIA STATE UNIT
AGREEMENT AND FOR AUTHORITY TO INSTALL
AND OPERATE A WATERFLOOD PROJECT IN
THE ARTESIA-QUEEN-GRAYBURG-SAN ANDRES
POOL, INCLUDING THE DRILLING OF SIX
INJECTION AND TWO PRODUCTION WELLS,
ALL AT UNORTHDOX WELL LOCATIONS WITHIN
THE BOUNDARIES OF SAID UNIT LOCATED IN
PORTIONS OF SECTIONS 13, 14, AND 23,
TOWNSHIP 18 SOUTH, RANGE 27 EAST,
N.M.P.M., AND FURTHER, FOR APPROVAL
OF ADMINISTRATIVE PRODECURES FOR EXPAN-
SION OF SAID WATERFLOOD PROJECT.

A P P L I C A T I O N

COMES NOW ANADARKO PRODUCTION COMPANY and applies to
the Oil Conservation Commission of New Mexico for approval
of its Unit Agreement for the Artesia State Unit, and for
authority to install and operate a waterflood project in
the Artesia-Queen-Grayburg-San Andres Pool, Eddy County,
New Mexico, by the drilling of six water injection wells
and two production wells all at unorthdox well locations
within the boundaries of said unit and for procedures
for Administrative Approval to expand said waterflood
project; and in support thereof would show:

1. Applicant is the operator of the proposed
Artesia State Unit which is composed entirely of state
leases in which the applicant owns 100% of the working
interest and which embraces lands described as follows:

SECRET MAILED

Date

10-18-74

Township 18 South, Range 27 East, N.M.P.M.

Section 14: E/2 E/2 and SW/4 SE/4
Section 13: W/2 W/2
Section 23: N/2 NE/4

all in Eddy County, New Mexico and containing 440 acres,
more or less

2. That the Unit Agreement has been given preliminary approval by the Commissioner of Public Lands.

3. That said Unit Agreement has been approved by sufficient owners of interest to assure its ultimate effectiveness.

4. That the said Unit is being formed for the purpose of conducting waterflood operations within the boundaries of the unit area in the above referenced pool.

5. That Applicant proposes to drill six wells for water injection into the Grayburg and San Andres formations and two production wells, all at unorthodox well locations within the Unit boundary as indicated by the plat and descriptions attached hereto as Exhibits "A" and "B", respectively, and incorporated by reference.

6. That applicant further requests that Administrative Procedures be authorized whereby modification or expansion of the unit including the drilling of additional injection and/or production wells at both orthodox and unorthodox well locations may be approved without further notice and hearing.

7. That the granting of this application will result in the prevention of waste and the protection of correlative rights.

WHEREFORE, applicant respectfully requests this matter be set for hearing before the Commission's duly appointed Examiner and that after notice and hearing, an order be entered approving the Unit Agreement, authorizing the installation and operation of a waterflood project, and establishing Administrative Procedures for expansion of said project as described above.

Respectfully submitted,

ANADARKO PRODUCTION COMPANY

By



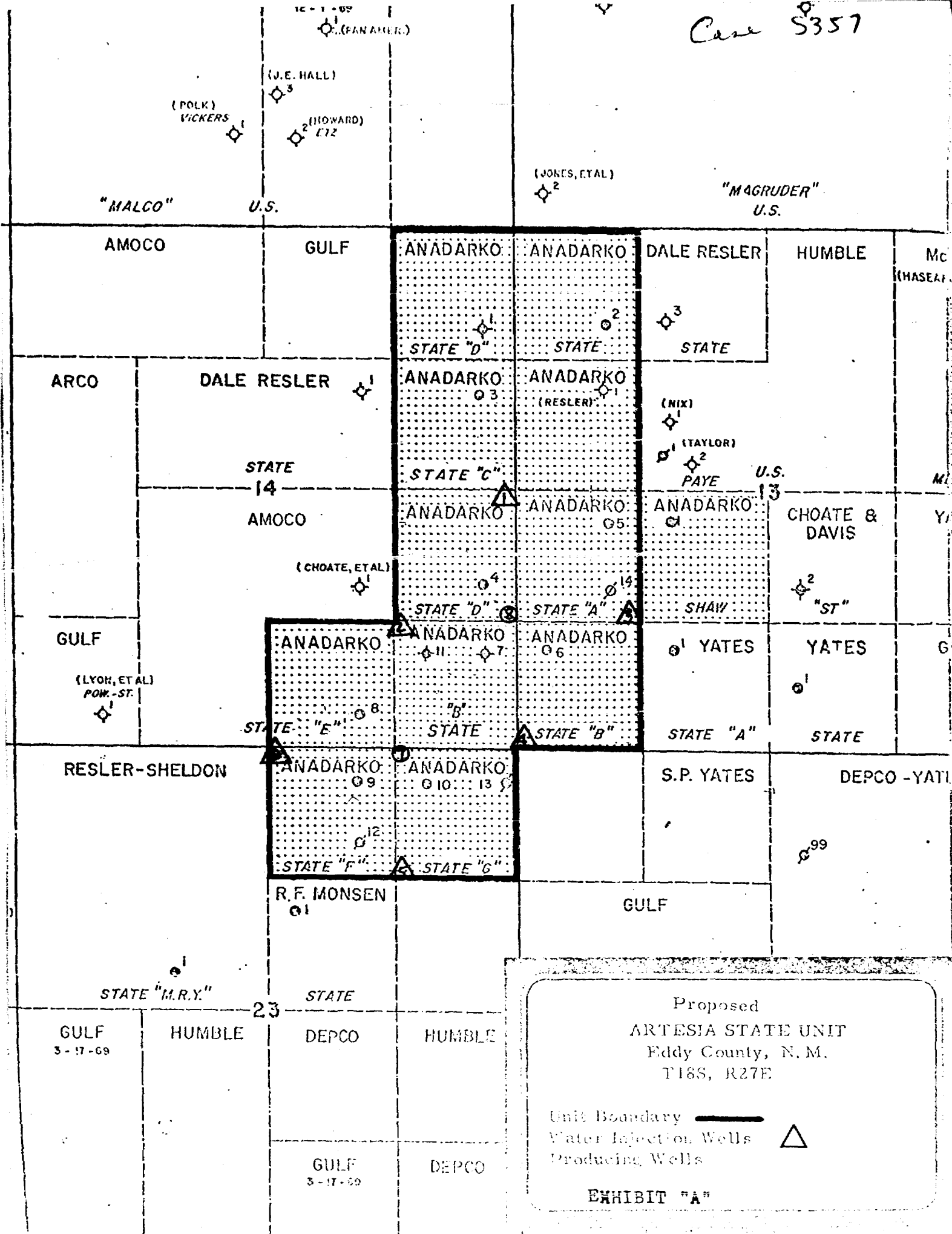
KELLAHIN & FOX

P. O. Box 1769

Santa Fe, New Mexico 87501

ATTORNEYS FOR APPLICANT

"MAGRUDER"
U.S.



PROPOSED LOCATION OF NEW WELLS

Water Input Wells

- (1) 10' FEL & 2630' FSL Sec. 14, T18S-R27E ✓✓
- (2) 1310' FS&EL Sec. 14 ✓✓
- (3) 1310' FWL & 1330' FSL Sec. 13 ✓✓
- (4) 10' FS&WL Sec. 13 ✓✓
- (5) 1310' FN&EL Sec. 23 ✓
- (6) 10' FNL & 2630' FEL Sec. 23 ✓

Producing Wells

- (7) 10' FNL & 1310' FEL Sec. 23 ✓
- (8) 10' FEL & 1330' FSL Sec. 14 ✓

EXHIBIT "B"

CASE 5354: Application of Mark Production Company for compulsory pooling and an unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests of Pennsylvanian age or older underlying the S/2 of Section 9, Township 20 South, Range 25 East, Eddy County, New Mexico, to be dedicated to a well to be drilled at an unorthodox location 660 feet from the South and West lines of said Section 9. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of the applicant as the operator of the well and a charge for risk involved in drilling said well.

CASE 5355: Application of Tesoro Petroleum Corporation for pool contraction and expansion, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks the contraction of the Lone Pine-Dakota "D" Oil Pool by the deletion of the E/2 NW/4 of Section 8, Township 17 North, Range 8 West, McKinley County, New Mexico, and the expansion of the Hospah-Dakota Oil Pool by the addition of such lands.

CASE 5356: Application of Anadarko Production Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of its Artesia State Unit Area comprising 440 acres, more or less, of State lands in Township 18 South, Range 27 East, Eddy County, New Mexico.

CASE 5357: Application of Anadarko Production Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project on its Artesia State Unit, Artesia Pool, by the injection of water into the Grayburg and San Andres formations at the following six unorthodox locations in Township 18 South, Range 27 East, Eddy County, New Mexico: Section 13, 1330 feet from the South line and 1310 feet from the West line, and 10 feet from the South and West lines; Section 14, 2630 feet from the South line and 10 feet from the East line and 1310 feet from the South and East lines; Section 23, 1310 feet from the North and East lines and 10 feet from the North line and 2630 feet from the East line. Further to drill two producing wells at unorthodox locations 10 feet from the North line and 1310 feet from the East line of Section 23 and 1330 feet from the South line and 10 feet from the East line of Section 14. Applicant further seeks an administrative procedure whereby the project may be expanded by the drilling of additional injection and producing wells at orthodox and unorthodox locations without further notice and hearing.

CASE 5358: Application of Continental Oil Company for simultaneous dedication and unorthodox gas well locations, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order approving the simultaneous dedication of a standard 640-acre gas proration unit comprising all of Section 26, Township 23 South, Range 36 East, Jalmat Gas Pool, Lea County, New Mexico, to four wells, being the Lynn B-1 Well No. 1, in Unit J and Lynn B-1 Wells Nos. 3, 4, and 16, at unorthodox locations in Units C, M, and A, respectively, of said Section 26.

Dockets Nos. 31-74 and 32-74 are tentatively set for hearing on November 13 and November 26, 1974. Application for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - OCTOBER 30, 1974

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

The following cases will be heard before Daniel S. Nutter, Examiner, or Richard L. Stamets, Alternate Examiner:

- CASE 5349: Application of Corinne Grace for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Bond Draw Unit Area comprising 5123 acres, more or less, of Federal, State, and Fee lands in Township 24 South, Range 27 East, Eddy County, New Mexico.
- CASE 5350: Application of Yates Petroleum Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Sullivan DZ Com Well No. 1, to be drilled 990 feet from the North line and 660 feet from the West line of Section 8, Township 18 South, Range 26 East, West Atoka-Morrow Gas Pool, Eddy County, New Mexico, the N/2 of said Section 8 to be dedicated to the well.
- CASE 5351: Application of Yates Petroleum Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Ferguson DY Com Well No. 1 to be drilled 1980 feet from the North line and 660 feet from the East line of Section 7, Township 18 South, Range 26 East, West Atoka-Morrow Gas Pool, Eddy County, New Mexico, the N/2 of said Section 7 to be dedicated to the well.
- CASE 5352: Application of David Fasken for compulsory pooling and an unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests of Pennsylvanian age or older underlying the S/2 of Section 2, Township 18 South, Range 26 East, Eddy County, New Mexico, to be dedicated to a well to be drilled at an unorthodox location 990 feet from the South line and 1650 feet from the East line of said Section 2. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of the applicant as operator of the well and a charge for the risk involved in drilling said well.
- CASE 5353: Application of Cities Service Oil Company for a dual completion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Government-Z Com Well No. 1, located in Unit K of Section 23, Township 20 South, Range 28 East, Eddy County, New Mexico, in such a manner as to produce oil from the Wolfcamp formation through tubing and gas from the Morrow formation through the casing-tubing annulus by means of a cross-over assembly.

CASE 5359: Application of Continental Oil Company for simultaneous dedication and unorthodox locations, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the simultaneous dedication of a 320-acre non-standard gas proration unit comprising the N/2 of Section 1, Township 24 South, Range 36 East, Jalmat Gas Pool, Lea County, New Mexico, to its Vaughn B-1 Wells Nos. 1 and 6, located at unorthodox locations in Units H and E, respectively, of said Section 1.

CASE 5360: Application of Continental Oil Company for two non-standard gas proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the two following non-standard gas proration units in the irregular Section 4, Township 21 South, Range 36 East, Eumont Gas Pool, Lea County, New Mexico:

A 480-acre unit comprising all of Lots 1, 2 and 3, 6 through 11, and 14, 15, and 16 of said Section 4 to be dedicated to the Meyer B-4 Well No. 14, located in Unit G;

A 240-acre unit comprising the SE/4 and E/2 SW/4 of said Section 4 to be dedicated to the Meyer B-4 Well No. 4, located in Unit S.

DRAFT

dr/

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:

APPLICATION OF ANADARKO PRODUCTION
COMPANY FOR A WATERFLOOD PROJECT,
EDDY COUNTY, NEW MEXICO

CASE NO. 5357

Order No. R-4907

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on October 30, 1974
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this day of November, 1974, 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, Anadarko Production Company, seeks
authority to institute a waterflood project in the Artesia State
Unit Area, Artesia Pool, by the injection of water into the Queen,
Grayburg, and San Andres formations through six injection wells at
unorthodox locations in Township 18 South, Range 27 East, NMPM,
Eddy County, New Mexico, as follows:

1	Section 13:	1330 feet from the South line and
2		1310 feet from the West line;
3		10 feet from the South line and
4		10 feet from the West line;
5	Section 14:	2630 feet from the South line and
6		10 feet from the East line;
7		1310 feet from the South line and
8		1310 feet from the East line;
	Section 23:	1310 feet from the North line and
		1310 feet from the East line; and
		10 feet from the North line and
		2630 feet from the East line.

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

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

7 (5) That the applicant seeks approval for the unorthodox
8 location of two producing wells located as follows:

9 TOWNSHIP 18 SOUTH, RANGE 27 EAST, NMPM

10 Section 14: 1330 feet from the South line and
11 10 feet from the East line; ~~and~~

12 Section 23: 10 feet from the North line and
13 1310 feet from the East line.

14 (6) That the operator should take all steps necessary to
15 ensure that the injected water enters only the proposed injection
16 interval and is not permitted to escape to other formations or
17 onto the surface from injection, production, or plugged and
18 abandoned wells.

19 (7) That applicant further seeks an administrative proce-
20 dure whereby the project may be expanded by the drilling of
21 additional injection and producing wells at orthodox and unortho-
22 dox locations without further notice and hearing.

23 (8) That the subject application should be approved and
24 the project should be governed by the provisions of Rules 701,
25 702, and 703 of the Commission Rules and Regulations.

26 IT IS THEREFORE ORDERED:

27 (1) That the applicant, Anadarko Production Company, is
28 hereby authorized to institute a waterflood project in the
29 Artesia State Unit Area, Artesia Pool, by the injection of water
30 into the ^{Queen,} Grayburg, and San Andres formations through the following-
31 described wells at unorthodox locations in Township 18 South,
32 Range 27 East, NMPM, Eddy County, New Mexico:

Section 13: 1330 feet from the South line and
1310 feet from the West line;

10 feet from the South line and
10 feet from the West line;

Section 14: 2630 feet from the South line and
10 feet from the East line;

1310 feet from the South line and
1310 feet from the East line;

Section 23: 1310 feet from the North line and
1310 feet from the East line; and

10 feet from the North line and
2630 feet from the East line.

internally cemented (2) That injection into each of said wells shall be through cement-lined tubing, set in a packer which shall be located as near as practicable to the uppermost perforation; ~~or in the case of open-hole completions, as near as practicable to the casing shoe~~ that the casing-tubing annulus of each injection well shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.

(3) That the operator shall immediately notify the supervisor of the Commission's Artesia district office of the failure of the tubing or packer in any of said injection wells, the leakage of water or oil from around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(4) That the subject waterflood project is hereby designated the Anadarko Production Company Artesia State Unit Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(5) That the applicant is hereby authorized to drill two producing wells at the following unorthodox locations:

TOWNSHIP 18 SOUTH, RANGE 27 EAST, NMPM

Section 14: 1330 feet from the South line and
10 feet from the East line; and

Section 23: 10 feet from the North line and
1310 feet from the East line.

(6) The Secretary-Director of the Commission is hereby authorized to approve such additional producing wells and injection wells at orthodox and unorthodox locations within the boundaries of the Artesia State Unit Area as may be necessary to complete an

1 efficient production and injection pattern, provided said wells
2 are drilled no closer than 660 feet to the outer boundary of
3 said unit nor closer than 10 feet to any quarter-quarter
4 section or subdivision inner boundary. To obtain such approval,
5 the project operator shall file proper application with the
6 Commission, which application, if it seeks authorization to
7 convert additional wells to injection or to drill additional
8 production or injection wells shall include the following:

9 (a) A plat showing the location of proposed well,
10 all wells within the project area, and offset
11 operators, locating wells which offset the
12 project area.

13 (b) A schematic drawing of the proposed well which
14 fully describes the casing, tubing, perforated
15 interval, and depth.

16 (c) A letter stating that all offset operators
17 to the proposed well have been furnished a
18 complete copy of the application and the
19 date of notification.

20 The Secretary-Director may approve the proposed well
21 if, within 20 days after receiving the application, no objection
22 to the proposal is received. The Secretary-Director may grant
23 immediate approval, provided waivers of objection are received
24 from all offset operators.

25 (7) That monthly progress reports of the waterflood project
26 herein authorized shall be submitted to the Commission in accor-
27 dance with Rules 704 and 1120 of the Commission Rules and Regula-
28 tions.

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

31 DONE at Santa Fe, New Mexico, on the day and year herein-
32 above designated.