CASE 6727: CONOCO INC. FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO

19.5

USE Number 6727 Application Transcripts. 5man Exhibits \sim

(1 2 3 4 5	ENERGY AND N OIL CONSEN STATE LAN SANTA N 14 NG	Poge DF NEW MEXICO MINERALS DEPARTMENT RVATION DIVISION ND OFFICE BLDG. TE, NEW MEXICO DVember 1979 INER HEARING	1
		6 7 8		noco, Inc. for salt))) CASE) 6727)
	SALLY WALTON BOYD ERTIFRE SHORTHAND MPONTER 2207Marz Blassa (2013 471 4493 Santa Fe, New Merico 27501	10 11 12 13	BEFORE: Daniel S. Nutter	RIPT OF HEARING	-
		14 15 16 17 18	APPE For the Oil Conservation Division:	E A R A N C E S Ernest L. Padilla Legal Counsel for State Land Office Santa Fe, New Mex	the Division Bldg.
		19 20 21 22	For the Applicant:	Jason Kellahin, E KELLAHIN & KELLAH 500 Don Gaspar Santa Fe, New Mex	IN
فحبر		23 24 26			

ч .

INDEX

3 LOWELL B. DECKERT

Direct Examination by Mr. Kellahin Cross Examination by Mr. Nutter

LY WALTON BO MED EMORTHAND REPO MAX BILLING (101) 171-IA Pa, New Marido 177-IA Pa, New Marido 177-

EXHIBITS

Applicant Exhibit One, Plat Applicant Exhibit Two, Tabulation Applicant Exhibit Three, Schematic Applicant Exhibit Four, Schematic Applicant Exhibit Five, Log Applicant Exhibit Six, Structure Map Applicant Exhibit Seven, Structure Map Applicant Exhibit Eight, Water Analysis

				Page3
	\sim		1	MR, NUTTER: Call Case Number 6727.
			2	MR. PADILLA: Application of Conoco, Inc.
			3	for salt water disposal, Lea County, New Mexico.
			4	MR , KELLAHIN: If the Examiner please, 1'm
			5	Jason Kellahin, appearing on behalf of the applicant.
			6	I have one witness.
			7	
			8	(Witness sworn.)
			9	
		OYD Marino Marino	10	LOWELL B DECKERT
			11	being called as a witness and having been duly sworn upon
	\bigcirc	WALT WALT WATHU	12	his oath, testified as follows, to-wit:
			13	
			14	DIRECT EXAMINATION
			15	BY MR. KELLAHIN:
			16	Q. Would you state your name, please?
•			17	A. Lowell B. Deckert.
			18	Q. By whom are you employed and in what posi-
			19	tion, Mr. Deckert?
			20	A. I'm employed by Conoco, Incorporated, as
			21	a Senice Staff Engineer in Hobbs, New Mexico.
			22	Q. And have you testified before the Oil Con-
	and the		23	servation Division and had your qualifications made a matter
			24	of record?
			25	A. Yes.
			ł	

.

í

.

1 MR. KELLAHIN: Are the witness' qualifica-2 tions acceptable? 3 MR. NUTTER: Yes, they are. Mr. Deckert, are you familiar with the Q. 5 application of Conoco, Incorporated, in Case Number 6727? 8 Yes, I am. A. What does the applicant propose in this Û. 8 case? Case Number 6727 is the application of A 10 Conoco for approval to convert our Anderson Ranch Unit Well 11 No. 8 from a shut-in salt water disposal well in the Anderson 12 Ranch Wolfcamp Pool to a salt water disposal in the Anderson 13 Ranch Wolfcamp Undesignated Mississippian and Anderson Ranch 14 Devonian Pools. 15 Now would you give the Examiner a brief Q 16 history of this well? 17 A. Yes. The Anderson Ranch Unit No. 8 Well 18 was drilled in May of 1954 to a total depth of 13,689 feet 19 in the Devonian. 20 The Devonian production test yielded only 21

a small show of oil and gas. The well was temporarily abandoned in June of '54. In July, 1956 an attempt was made to complete in the Pennsylvanian Bend or Morrow Sand. This test resulted in only a show of gas.

In August, 1956 a Mississippian tested

LY WALTON BOYD PED SHORTHAND REPORTED PARE BAUGA (565) 471-345 (24 24, Now Markon 51161

22

23

24

salt water with no hydrocarbons. The subject well was unsuccessfully tested in the Wolfcamp formation and was subsequently converted to a salt water disposal well in the Wolfcamp by authority of Order Number R-2078, dated October 9th, 1961, with disposal through Lower Wolfcamp perfs authorized by letter from the Secretary-Director, dated September 5th, 1962.

Q Now referring to what has been marked the applicant's Exhibit Number One, would you identify that exhibit, please?

A Okay. Exhibit One is a location plat Showing the case well, which is located 1980 feet from the south line, 660 feet from the east line, of Section 11, Township 16 South, Range 32 East, Lea County, New Mexico.

This plat also shows all other wells on the lease with the designation "W" showing the Wolfcamp producers; "D" designating Devonian producers; and "M" designating Morrow producers.

Q. Now, why does Conoco want to convert this salt water disposal well?

A. There are basically two reasons. First of all, all potentially productive horizons have been tested in this well with no commercial quantities of hydrocarbons shown.

Second, the Anderson Ranch Unit Well No. 16

LY WALTON BOYD

1

2

3

4

5

7

ĝ

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

1 is currently the only salt water disposal well on this lease. It has recently experienced mechanical problems and it is 2 3 no longer serviceable. Water disposal requirements are extensive 5 and the two Devonian wells are currently shut-in for this reason. 7 Q. Now, referring to what has been marked as Exhibit Number Two, would you identify that exhibit. Mr. R Deckert? 8 10 A. Yes. Exhibit Two shows the volume of 11 water being disposed of into salt water disposal well No. 12 16. 13 Q. Now, referring to Exhibit Number Three, 14 what is that? 15 A. Exhibit Three is the present wellbore 16 schematic for the Anderson Ranch Well No. 8, and this well 17 is currently shut-in. 18 Now, didn't you previously state that you Q. 19 have the Division's approval to use the well for a Wolfcamp 20 salt water disposal? 21 Yes. Yes, we do by Order R-2078. A. 22 But you're not using it, is that correct? 0. 23 That's right. Ά. 24 And why is that? Q. 25 Well No. 8 was initially converted to salt A.

water disposal in the Wolfcamp zone through perforations
9776 to 9816. When the well was placed on water disposal
the surface injection pressure increased to 2850 pounds within 10 minutes after injection was started.

The well was then additionally perforated in the Wolfcamp from 9970 to 10,333 feet and used as a disposal well for a period of approximately two years. The last month in which we disposed of water in this well was August, 1964, and at that time the surface injection pressure had increased to 3000 pounds. This increased pressure in No. 8 made it unfit for use as a disposal well.

Mechanical problems in Well No. 9, which is located, by the way, in "D" of Section 12, a San Andres disposal well, made it unfit for disposal, so we converted Well No. 16 to salt water disposal.

Now mechanical problems in No. 16 dictate that we return to No. 8 and open up additional intervals in order to provide adequate produced water disposal for this lease.

As a matter of information, our records
show that the Morrow zone was tested at one time for -- from
12,173 to 192 feet. These perforations were cement squeezed.
We do not want to inject water into the Morrow, so we plan
to pressure test these perforations and then requeeze, if
necessary.

LY WALTON BOY

5

6

7

8

9

10

11

12

13

14

15

16

17

18

Paÿa_____8____

Q. Now, referring to Exhibit Number Four, would you identify that exhibit, please?

A. Yes. Exhibit Number Four is a downhole
 schematic, showing how we propose to complete Well No. 8 for
 a salt water disposal.

The formations open will be the Wolfcamp, Undesignated Mississippian, and the Devonian. There are no producing wells in the Mississippian.

Q. Now, referring to what has been marked as Exhibit Number Five, would you identify that exhibit?

A Exhibit Five is a log section for Anderson Ranch Unit Well No. 6 and shows the intervals that are open and will be open for disposal. For instance, it shows the top of the Sanders lime of the Wolfcamp formation with present perforations, the top of the Mississippian, and the Mississippian perforations, top of the Devonian, and the proposed Devonian perforations.

Q. Now, referring to Exhibits Nos. Six and Seven, would you discuss those exhibits, please?

A. Exhibit Six is a structure map on the top of the Sanders limestone of the Wolfcamp formation and it shows Well No. 8 located along the south edge and structurally low to the other Wolfcamp wells in the unit.

I'd like to point out that the three wells immediately north of Well No. 8 are Wolfcamp waterflood in-

VLLY WALTON BOYD TIPED SHORTHAND REPORTER OPERA BIMOR (845) 411-343 and Pe, New Merido 47341 1

2

3

5

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

9_____9____

jection wells. 2 Exhibit Number Seven is a structure map on the top of the Devonian. It again shows Well No. 8 down 3 structure from the closest Devonian Well No. 1 to the north-4 5 west. The four Devonian wells shown on Exhibit £. 7 Seven and four other wells also tested the Devonian, but these aren't shown on the exhibit; however, they contibuted 8 to the development of this structure map. 10 Q. Now will you refer to Exhibit Number Eight 11 and explain that? 12 A. Exhibit Number Eight is a water analysis 13 of the water to be disposed of into this well. 14 Is that a corrosive water? Q. 15 Yes. A. 16 Will you inject through the tubing, in-0. 17 ternally coated tubing? 18 A. Yes. 19 And the casing-tubing annulus will be Q, 20 filled with an inert fluid? 21 An inert fluid, right. A, 22 Now what is the volume of oil being pro-0. 23 duced from the lease? 24 Okay. From the Devonian we've produced A. 25 approximately 22-to 2700 barrels of oil per month, and 3200

-			Page 10
		1	to 4000 barrels of oil per month fice the Wolfcamp.
		2	I'd like to point out a_i ain that the
		3	Devonian wells are currently shut-in because of a lack of
		4	disposal facilities.
		5	Q. And approval of a disposal well is essen-
		6	tial to get the Devonian wells back on production, is that
		7	correct?
		8	A. That's right.
		9	Q Were Exhibits One through Eight, inclusive,
		10	prepared by you or under your supervision?
		11	A Yes, they were.
\bigcirc	ALTO MTHAN MTHAN	12	MR. KELLAHIN: At this time we offer Ex-
		13	hibits One through Eight, inclusive.
	SAL	14	MR. NUTTER: Exhibits One through Eight
		15	will be admitted in evidence.
		16	MR. KELLAHIN: That's all we have on this
		17	case, Mr. Nutter.
		18	
		19	CROSS EXAMINATION
		20	BY MR. NUTTER:
		21	Q. Mr. Deckert, No. 16 is still being used
		22	for disposal, is it?
·····		23	A. Not right now, no, sir.
- second		24	Q. It appears from the tabulation on Exhibit
		25	Number Two that the well was taking water fairly well, a

State of the state

ł

		Page11
4		
1	couple of thousa	and barrels a day, anyway, up until maybe
2	August or Septer	nber, possibly.
3	A	Well, September is when we first had prob-
4	lems with this w	well and it was at that point we went ahead
5	and shut our Dev	vonian wells in,
6	Q	And what zone is disposable in the in
7	the is the No	o. 16 disposing into?
8	A	It's disposing into the Wolfcamp.
•	õ	Lower Wolfcamp?
10	A.	Uh-huh.
11	Q.	You never have disposed into the Devonian
12	here, then?	
13	A.	No.
14	Q.	And now the No. 9 over here in Section 12,
15	it's an old sal	t water disposal well, too, isn't it?
16	А.	It was, yes. It was an old disposal well
17	in the S an Andre	es at one time.
18	Q.	That's a San Andres well?
19	А.	Uh-huh, It's plugged and abandoned now,
20	Q.	Now, this schematic here of your No. 8
21		Exhibit Number Three, shows the uppermost
22		the Wolfcamp to be at 9776, I believe.
23	А.	Uh-huh, to 9816.
24	Q.	Uh-huh.
25		
	Α.	Right.

.

SALLY WALTON BOYD CERTIPED DHINTHAND MEDATER 1010 Phare Bin Not (101) 411 4101 Basis Pa, New Marico 11101

1

•

12 1 And we show 5-1/2 inch pipe was run to Q. 2 13,688 with the top of the cement at 7460. Do you know how 3 that cement top was determined? 4 A. It was from a temperature survey. ß So if, indeed, the cement is to that point 6 you have 2500 feet, or 2400 feet, of cement above the top 7 perforation there. . Yeah, above the top of the Wolfcamp, Wolf-A. 9 camp perfs, right. 10 Now, on Exhibit Number Four, which is the Q. 11 way you would propose to equip the well for disposal, you 12 mentioned some Morrow perfs. Now, what were those perfs 13 again? 14 12,173 to 192. A 15 173 to 12,192, and those perfs have been Q. 16 previously squeezed? 17 A. Yes. 12 And you will resqueezeathem? 19 Well, we're going to re-test -- we're 20 going to pressure test them and determine if they need to 21 be resqueezed, since we do have a Morrow gas well in this. 22 So that interval would be opposite your --Q. 23 or inside of your gross interval that you'd be disposing of, 24 or disposing into, right? 25 Uh-huh. A.

13 Then on your Exhibit Number Six, you men-Ô. 2 tioned some water injection wells in the Wolfcamp for flooding 3 purposes? Yes, those are --Α. Q, Would that be the wells with the triangles on them? Right, Wells 3, 6, and 10. A. So there's three wells on the east side Q there of the pool that you're disposing into -- or injecting 10 into the Wolfcamp? 11 A. Right. 12 And you'd also be injecting into the Q. 13 Wolfcamp in the subject well? 14 A. Right. 95 And then on the next exhibit, Number a 16 Seven, I see three current Devonian wells, is that correct? 17 Well, there are only two current Devonian A. 18 producers, and that's Well No. 1 and 14. 19 What about the Gulf CLA Well up there at Q. 20 the north end? 21 Yes. It is a --A. 22 It's a Devonian producer also? Q. 23 Yes, it is, uh-huh. A. 24 So there's three Devonian wells in this Q. 25 pool?

			Page
	i	А.	Three Devonian wells in this pool, right.
	2	Q	Would you be disposing of Devonian water
	3	only into this we	11?
	4	Α.	Well, it would be combined stream of De-
	5	vonian and Wolfca	mp production.
	6	Q.	Well, how do do you produce more from
	7	the Wolfcamp than	you're injecting into the Wolfcamp on your
	•	flood?	
	•	A	No, no. But the water all comes together
1911	10	and is mixed, so	
	11	Q.	Oh, the Devonian and the Wolfcamp waters
11	12	are mixed?	
4	13	А.	Yes, uh-huh.
\$	14	Q	And you don't need all of the water that's
	15	produced for your	Wolfcamp flood?
	16	Α.	Right.
	17	Q.	So what amount of water will be injected
	18	into the No. 8 who	en you put it on disposal?
	19	А.	I would think something in the order of
	29	1500 barrels a da	y .
	21	Q.	And at what pressure do you expect to put
	22	that water in?	
	2 3 24	А.	I wouldn't see that we would need to go
	ł	above 2000 pounds	•
	25		MR. NUTTER: Are there any further questions

SALLY WALTON BOYD CERTING INCOMENTER CERTING BUILD ROLD IN 1111

....,

م. مميريون

1

,

					Page 1.5
			1	of this witness?	He may be excused.
	,		2		Did you have anything further, Mr. Kellahing
			3		MR. KELLAHIN: That's all I had.
			4		MR. NUTTER: Does anyone have anything
·			5	they wish to offe	r in Case Number 6727?
			•		We'll take the case under advisement.
	<u>.</u> .	ж. -	7		
	÷.		•		(Hearing concluded.)
		~ # #	•		
			10		
	\square	2	11 12		
		317	13		
	•		14		
			15		
			16		
			17		
			18		
			19		
			20		
			21		11 11 12 13 14
			2		
			23		
			24		
			25		
					١.
		1			

h

REPORTER CERTIFICATE

I, SALLY W. BOYD, A Certified Shorthand Reporter, DO HEREBY CERTIFY that the foregoing and attached Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability from my notes taken at the time of the hearing.

Sally W. Boyd C.S.R.

I do hereby certify that the foregoing is a complete record of the promadiags in the Execution accuration Gaze day, 672 heard by me on how 14 19.79 79. Lusson, Examiner Oll Conservation Division

SALLY WALTON BOYI CERTIFIED SHCATMAND REPOATE 1020 Plaza Biance (605) 471-340 84445 Pa., New Maxico 87501 2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

	Page	1
ENERGY AND D OUL COHSE STATE LA SANTA D	OF NEW MEXICO MINERALS DEPARTMENT RVATION DIVISION ND OFFICE BLDG. FE, NEW MEXICO OVENDOR 1979	
EXAM	INER HEARING	
IN THE MATTER OF:	ליו שני און און און אין אין אין אין אין אין אין אין אין אי	
	noco, Inc. for salt ea County, New Mex-)) CASE) 6727)
DEFORE: Daniel S. Nutter		- ,
	RIPT OF HEARING E A R A N C E S	
A P P 1	E A R A N C E S Ernest L. Padilla	the Divis: Bldg.
APP: For the Oil Conservation Division:	E A R A N C E S Ernest L. Padilla Legal Counsel for State Land Office Santa Fe, New Mex Jason Kellahin, E KELLAHIN & KELLAH 500 Don Gaspar	the Divis Bldg. ico 37503 sq. IN
A P P i For the Oil Conservation	E A R A N C E S Ernest L. Padilla Legal Counsel for State Land Office Santa Fe, New Mex Jason Kellahin, E KELLAHIN & KELLAH	the Divis Bldg. ico 37503 sq. IN
A P P : For the Oil Conservation Division:	E A R A N C E S Ernest L. Padilla Legal Counsel for State Land Office Santa Fe, New Mex Jason Kellahin, E KELLAHIN & KELLAH 500 Don Gaspar	the Divis Bldg. ico 37503 sq. IN
A P P : For the Oil Conservation Division:	E A R A N C E S Ernest L. Padilla Legal Counsel for State Land Office Santa Fe, New Mex Jason Kellahin, E KELLAHIN & KELLAH 500 Don Gaspar	the Divis Bldg. ico 37503 sq. IN

4 .

SALLY WALTON BOYD CENTIFIED SHORTHAND REPORTER 2020 Plate Bhases (545) 411-3452 Bails Pe, New Modice 57501

 $\sum_{i \in \mathcal{I}} e_i$

·___)

ĺ

<u>د</u>

Page

THPRX

<

LOWELL B. DECKERT

ł

the second second

ł

Direct	Examination	n by	r Mr.	Kellahin	**	3
Cross I	Examination	bу	Mr.	Nutter		10

SALLY WALTON BOYD CERTIPRED SHORTHAND REPORTER 2022 Place Blanca (105) 471-1462 Blanca Pa, New Morthon 61201

EXHIBITS

14	Applicant Exhibit One, Plat
15	Applicant Exhibit Two, Tabulation
16	Applicant Exhibit Three, Schematic
17	Applicant Exhibit Four, Schematic
18	Applicant Exhibit Five, Log
19	Applicant Exhibit Six, Structure Map
20	Applicant Exhibit Seven, Structure Map
21	Applicant Exhibit Eight, Water Analysis
22	

				Page
			1	MR. NUTTER: Call Case Number 6727.
			2	MR. PADILLA: Application of Conoco, Inc.
			3	for salt water disposal, Lea County, New Nexico.
			4	MR . KELLANIN: If the Examiner please, I'm
- ^{- 1}		1	5	Jason Kellahin, appearing on behalf of the applicant.
			6	I have one witness.
			7	
			8	(Witness sworn.)
			9	
		OVD PONTER 11-24 65	10	LOWELL B DECKERT
		AND REL AND REL (6.6.1) 41	11	being called as a witness and having been duly sworn upon
		WALT BHOATH Bhase	12	his oath, testified as follows, to-wit:
• • •			13	
en e			14	DIRECT EXAMINATION
			15	BY MR. KELLAHIN:
			16	Q. Would you state your name, please?
			17	A. Lowell B. Deckert.
			18	Q. By whom are you employed and in what posi-
•			19	tion, Mr. Deckert?
			20	A. I'm employed by Conoco, Incorporated, as
			21	a Senice Staff Engineer in Hobbs, New Mexico.
			22	Q And have you testified before the Oil Con-
) 		23	servation Division and had your qualifications made a matter
			24	of record?
÷			25	A. Yes.
			1	

MR. KELLAHIN: Are the witness' qualifica-2 tions acceptable? MR. NUTTER: Yes, they are. Mr. Deckert, are you familiar with the 0. application of Coneco, Incorporated, in Case Number 6727? P. Yes, I am. What does the applicant propose in this case?

Case Number 6727 is the application of A. Conoco for approval to convert our Anderson Ranch Unit Well No. 8 from a shut-in salt water disposal well in the Anderson Ranch Wolfcamp Pool to a salt water disposal in the Anderson Ranch Wolfcamp Undesignated Mississippian and Anderson Ranch Devonian Pools.

Now would you give the Examiner a brief Q. history of this well?

The Anderson Ranch Unit No. 8 Well ñ, Yes. was drilled in May of 1954 to a total depth of 13,689 feet in the Devonian.

The Devonian production test yielded only a small show of oil and gas. The well was temporarily abandoned in June of '54. In July, 1956 an attempt was made to complete in the Pennsylvanian Bend or Morrow Sand. This test resulted in only a show of gas.

In August, 1956 a Mississippian tested

5

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

1 salt water with no hydrocarbons. The subject well was un-2 successfully tested in the Molfcamp formation and was sub-3 sequently converted to a salt water disposal well in the 4 Wolfcamp by authority of Order Number R-2078, dated October 5 9th, 1961, with disposal through Lower Wolfcamp perfs 6 authorized by letter from the Secretary-Director, dated 7 September 5th, 1962.

Q. Now referring to what has been marked the applicant's Exhibit Number One, would you identify that exhibit, please?

A. Okay. Exhibit One is a location plat showing the case well, which is located 1980 feet from the south line, 660 feet from the east line, of Section 11, Township 16 South, Range 32 East, Lea County, New Mexico. This plat also shows all other wells on

the lease with the designation "W" showing the Wolfcamp producers; "D" designating Devenian producers; and "M" designating Morrow producers.

Q. Now, why does Conoco want to convert this salt water disposal well?

A. There are basically two reasons. First of 22 all, all potentially productive horizons have been tested 23 in this well with no commercial quantities of hydrocarbons shown.

Second, the Anderson Ranch Unit Well No. 16

9

10

11

12

13

14

15

16

17

18

19

20

21

24

	Page
1	is currently the only salt water disposal well on this lease.
2	It has recently experienced mechanical problems and it is
3	no longer serviceable.
4	Water disposal requirements are extensive
5	and the two Devonian wells are currently shut-in for this
6	reason.
7	R Now, referring to what has been marked
8	as Exhibit Number Two, would you identify that exhibit, Mr.
•	Deckert?
10	A. Yes. Exhibit Two shows the volume of
- 11	water being disposed of into salt water disposal well No.
12	16.
13	Q. Now, referring to Exhibit Number Three,
14	what is that?
15	A. Exhibit Three is the present wellbore
16	schematic for the Anderson Ranch Well No. 8, and this well
17	is currently shut-in.
18	Q. Now, didn't you previously state that you
19	have the Division's approval to use the well for a Wolfcamp
20	salt water disposal?
21	A. Yes. Yes, we do by Order R-2078.
22	Q But you're not using it, is that correct?
23	A. That's right.
24	Q. And why is that?
25	A. Well No. 8 was initially converted to salt
	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 21 22 23 24

 \bigcirc

water disposal in the Wolfcamp zone through perforations
9776 to 9816. When the well was placed on water disposal
the surface injection pressure increased to 2850 pounds within 10 minutes after injection was started.

The well was then additionally perforated in the Wolfcamp from 9970 to 10,333 feet and used as a disposal well for a period of approximately two years. The last month in which we disposed of water in this well was August, 1964, and at that time the surface injection pressure had increased to 3000 pounds. This increased pressure in No. 8 made it unfit for use as a disposal well.

Mechanical problems in Well No. 9, which is located, by the way, in "D" of Section 12, a San Andres disposal well, made it unfit for disposal, so we converted Well No. 16 to salt water disposal.

Now mechanical problems in No. 16 dictate that we return to No. 8 and open up additional intervals in order to provide adequate produced water disposal for this lease.

As a matter of information, our records show that the Morrow zone was tested at one time for -- from 12,173 to 192 feet. These perforations were cement squeezed. We do not want to inject water into the Morrow, so we plan to pressure test these perforations and then requeeze, if necessary.

LLY W/ILTON BOYD IPED SHORTHAND REPORTER Place Blune (101) 111-2403 Ale Po, Nicy Morton 111-2403 5

8

7

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

9 Now, referring to Exhibit Number Four, would you identify that exhibit, please?

A. Yes. Exhibit Number Four is a downhole schematic, showing how we propose to complete Well No. 8 for a salt water disposal.

The formations open will be the Wolfcamp, Undesignated Mississippian, and the Devonian: There are no producing wells in the Mississippian.

O. Now, referring to what has been marked as Exhibit Number Five, would you identify that exhibit?

A. Exhibit Five is a log section for Anderson Ranch Unit Well No. 3 and shows the intervals that are open and will be open for disposal. For instance, it shows the top of the Sanders lime of the Wolfcamp formation with present perforations, the top of the Mississippian, and the Mississippian perforations, top of the Devonian, and the preposed Devonian perforations.

Q. Now, referring to Exhibits Nos. Six and Seven, would you discuss those exhibits, please?

A. Exhibit Six is a structure map on the top of the Sanders limestone of the Wolfcamp formation and it shows Well No. 8 located along the south edge and structurally low to the other Wolfcamp wells in the unit.

I'd like to point out that the three wells immediately north of Well No. 8 are Wolfcamp waterflood in-

ALLY WALTON BOYD TIPRED SHINITIAND REPORTER FPACE BLANK (641) 111-5445 ADD PO. Now MATCO 172-345 2

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

	Į.								
	1	jection wells.							
	2	Exhibit Number Seven is a structure map							
	3	on the top of the Devenian. It again shows Well No. 8 down							
	4	structure from the closest Devonian Well No. 1 to the north-							
	5	west.							
	6	The four Devonian wells shown on Exhibit							
	7	Seven and four other wells also tested the Devonian, but							
	8	these aren't shown on the exhibit; however, they contibuted							
	•	to the development of this structure map.							
1441	10	Q Now will you refer to Exhibit Number Eight							
	- 11	and explain that?							
1911 19, 1994 MOILEO 21927	12	A. Exhibit Number Eight is a water analysis							
	13	of the water to be disposed of into this well.							
3	14	Is that a corrosive water?							
	15	A. Yes.							
	16	Q. Will you inject through the tubing, in-							
	17	ternally coated tubing?							
	18	A. Yes.							
	19	0. And the casing-tubing annulus will be							
	20	filled with an inert fluid?							
	21	A. An inert fluid, right.							
	22	Q Now what is the volume of oil being pro-							
	23	duced from the lease?							
	24	A. Okay. From the Devonian we've produced							
	25	approximately 22-to 2700 barrels of oil per month, and 3200							

Page

n

SALLY WALTON BGYD Centreud anonthand reponter 3010 Para Bador (101) 111-445 Daria Fe, New Marino 17301

ĺ

 $\widehat{}$

		Pa	<u> </u>	10		
1	to 4000 barrels of oil per month from the Wolfcamp.					
2		I'd like to point out	again that	: the		
3	Devonian wells a	re currently shut-in bed	cause of a	lack of		
4	disposal facilities.					
5	Q	And approval of a disp	osal well	is essen-		
6	tial to get the Devonian wells back on production, is that					
7	correct?					
8	A.	That's right.				
9	Q	Nere Exhibits One three	ough Eight,	inclusive,		
10	prepared by you or under your supervision?					
11	A.	Yes, they were.				
12		MR. KELLAHIN: At this	s time we c	offer Ex-		
13	hibits One through Eight, inclusive.					
14		MR. NUTTER: Exhibits	One through	gh Eight		
15	will be admitted in evidence.					
16		MR. KELLAHIN: That's	all we have	re on this		
17	case, Mr. Nutter.					
18						
19		CROSS EXAMINATION				
20	BY MR. NUTTER:					
21	Q	Mr. Deckert, No. 16 is	s still bei	ing used		
22	for disposal, is	it?				
23	A.	Not right now, no, si				
24	0.	It appears from the ta				
25	Number Two that	the well was taking wate	er fairly v	vell, a		
	ł					

SALLY WALTON BOYD CERTIPHED BHONTHAND NEPONTER 2020 Phate Bhanes (545) 411-448 Banta Pa, Now Maridoo 27591

 $\widehat{}$

با تموريد.

ĺ

4.5

		Page11	
couple	e of thous	and barrels a day, anyway, up until maybe	
August or September, possibly.			
	Λ.	Well, September is when we first had prob-	
lems with this well and it was at that point we went ahead			
and shut our Devonian wells in.			
	Q	And what zone is disposable in the in	
the	is the N	lo, 16 disposing into?	
	Α.	It's disposing into the Wolfcamp.	
	Q.	Lower Wolfcamp?	
	A.	Uh-huh.	
	Ũ	You never have disposed into the Devonian	
here,	then?		
	Α.	No.	
	Q.	And now the No. 9 over here in Section 12	
it's an old salt water disposal well, too, isn't it?			
	Þ.	It was, yes. It was an old disposal well	
in the	San Andr	es, at one time.	
	Ğ	That's a San Andres well?	
	Α.	Uh-huh. It's plugged and abandoned now.	
	Q	Now, this schematic here of your No. 8	
Well, which is Exhibit Number Three, shows the uppermost			
perforations in the Wolfcamp to be at 9776, I believe.			
	٦.	Uh-huh, to 9816.	
	Q.	Uhhuh.	
	ð.	Right.	

•; .

SALLY WALTON BOYD CERTIPED BHORTHAND NEPORTER 1919 Phaza Bhada (541) 411-4465 Banta Pa, Now Marino 57831

 \bigcirc

۱ محمد یا ب

1

12

And we show 5-1/2 inch pipe was run to Q. 2 13,688 with the top of the cement at 7460. Do you know how that cement top was determined? It was from a temperature survey. A. So if, indeed, the cement is to that point Q. you have 2500 feet, or 2400 feet, of cement above the top 7 perforation there. A. Yeah, above the top of the Wolfcamp, Wolfcamp perfs, right. 10 Q. Now, on Exhibit Number Four, which is the 11 way you would propose to equip the well for disposal, you 12 mentioned some Morrow perfs. Now, what were those perfs 13 again? 14 12,173 to 192. Ā. 15 173 to 12,192, and those perfs have been Q. 16 previously squeezed? 17 A. Yes. And you will resqueeze them? Ω 18 A, Well, we're going to re-test -- we're 20 going to pressure test them and determine if they need to 21 be resqueezed, since we do have a Morrow gas well in this. 22 So that interval would be opposite your --Ç. 23 or inside of your gross interval that you'd be disposing of, 24 or disposing into, right? 25 A. Ch-huh.

ALY WALTON BOYE TOTAL WALTON BOYE TOTAL BANK (196) 41144

1 Then on your Exhibit Number Six, you men-Q. 2 tioned some water injection wells in the Wolfcamp for flooding 3 purposes? λ. Yes, those are ---Would that be the wells with the triangles Q. on them? 7 Right, Wells 3, 6, and 10. A. So there's three wells on the east side Q. . there of the pool that you're disposing into -- or injecting 10 into the Wolfcamp? 11 A. Right. 12 And you'd also be injecting into the \$ 13 Wolfcamp in the subject well? 14 Right. A. 16 And then on the next exhibit, Number 0. 16 Seven, I see three current Devonian wells, is that correct? 17 Ā. Well, there are only two current Devonian 18 producers, and that's Well No. 1 and 14. 10 What about the Gulf CLA Well up there at Q. 20 the north end? 21 Yes. It is a -λ. 22 It's a Devonian producer also? Q, 23 Yes, it is, uh-huh. Δ. 24 So there's three Devonian wells in this Q. 25 pool?

13

LY WALTON BOYD ME HHATIMA MPONTER MEN Blann (11) 111-111 Man Blann (11) 111-111

Three Devonian wells in this pool, right. λ. Would you be disposing of Devonian water Q. only into this well? 2 λ Well, it would be combined stream of Devonian and Wolfcamp production. Q. Well, how do -- do you produce more from the Wolfcamp than you're injecting into the Wolfcamp on your flood? No, no. But the water all comes together A. 10 and is mixed, so ---11 Q. Oh, the Devonian and the Wolfcamp waters 12 are mixed? 13 Yes, uh-huh. A. 14 And you don't need all of the water that's Q. produced for your Wolfcamp flood? A. Right. 0. So what amount of water will be injected into the No. 8 when you put it on disposal? A. I would think something in the order of 1500 barrels a day. 21 Q. And at what pressure do you expect to put 22 that water in? 23 A. I wouldn't see that we would need to go 24 above 2000 pounds. 25 MR. NUTTER: Are there any further questions

Y WALTON BOYD B SHORING REPORTS B REAM (101) 111 1110 A Plan (101) 111 1110 A Plan Made 11101

1	of this witness?	He may be excused.
2		Did you have anything further, Mr. Kellahin
ł	l .	MR. KELLAHIN: That's all I had.
. (MR. NUTTER: Doos anyone have anything
	they wish to offer	r in Case Number 6727?
-		We'll take the case under advisement.
7		•
1		(Hearing concluded.)
		· · ·
• 5 ‡ · · · · ·		
17 17		
20		
21		
22		
23		
- A		
25		
		· · ·
4		

REPORTER CERTIFICATE

2

3

4

5

7

10

11

12

13

14

15

16

17

21

21

22

23

24

I, SALLY W. BOYD, A Certified Shorthand Reporter, DO HEREBY CERTIFY that the foregoing and attached Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability from my notes taken at the time of the hearing.

Sally W. Boyd C.S.R.

I do hereby certify that the foregoing Is a complete record of the proceedings in the Examiner hearing of Case No. 672^{-7} , heard by me on $11/14^{-19}$ 19.79. ____, Examiner tun

Cil Conservation Division



BRUCE KING GOVENNOR LARRY KEHDE SECRETARY

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

Novemb

POST DEFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 87501 (505) 827-2434

November 27, 1979

Mr. Jason Kellahin Kellahin & Kellahin Attorneys at Law Post Office Box 1769 Santa Fe, New Mexico ORDER NO. R-6195

Re: CASE NO.

Applicant:

Conoco Inc.

6727

Dear Sir:

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

Pours very truly, T JOE D. RAMEY Director

JDR/fd

Copy of order also sent to:

Hobbs OCD х Artesia OCD х Aztec OCD

Other

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

> CASE NO. 6727 Order No. R-6195

APPLICATION OF CONOCO INC. FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on November 14, 1979, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this <u>216t</u> day of November, 1979, the Division Director, 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 Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Conoco Inc., is the owner and operator of the Anderson Ranch Unit Well No. 8, located in Unit I of Section 11, Township 16 South, Range 32 East, NMPM, Anderson Ranch Field, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the Wolfcamp, Mississippian and Devonian formations, with injection into the overall interval from approximately 9,776 feet to 13,620 feet

(4) That the injection should be accomplished through 2 7/8-inch plastic lined tubing installed in a packer set at approximately 9,700 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge or approved leak detection device should be attached to the annulus in order to determine leakage in the casing, tubing, or packer.
-2-Case No. 6727 Order No. R-6195

(5) That the injection well or system should be equipped with a pressure limiting switch or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 1995 psi.

(6) That the operator should notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(7) 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.

(8) 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, Conoco Inc., is hereby authorized to utilize its Anderson Ranch Unit Well No. 8, located in Unit I of Section 11, Township 16 South, Range 32 East, NMPM, Anderson Ranch Field, Lea County, New Mexico, to dispose of produced salt water into the Wolfcamp, Mississippian, and Devonian formations, injection to be accomplished through 2 7/8-inch tubing installed in a packer set at approximately 9,700 feet, with injection into the overall interval from approximately 9,776 feet to 13,620 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; 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 shall be equipped with an approved leak detection device in order to determine leakage in the casing, tubing, or packer.

(2) That the injection well or system shall be equipped with a pressure limiting switch or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 1995 psi.

(3) That the operator shall notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected. -3-Case No. 6727 Order No. R-6195

(4) That the operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

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

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

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



STATE OF NEW MEXICO OIL CONSERVATION DIVISION JOE D. RAMEY Director

dr/

Hugh Jugram 10/24: Walfcamp 9775-10335 Ag morras Mississippian 12525 - 12590 Devonia 13400 - 13620 plastic coated 2%-inch set at 9675 5-6

EXHIBIT NO. 1



ANDERSON RANCH UNIT MONTHLY WATER DISPOSAL REPORT

Well No. 16

Month	Volume	Pressure	Cumulative Ending
<u>1978</u>			
October November December	26,784 47,772 23,353	3 50 580 350	- -
<u>1979</u>			
January February March April May June July August	12,388 18,395 20,112 25,942 1,771 63,539 62,510 45,985	0 250 250 220 200 200 200 200 200	
September	9,808	200	12,066,238

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Conce clac EXHIBIT NO. 2
CASE NO. 6727
AT 2022 A CHIMENE THE PROPERTY AND A CHIMENE A



BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Conneo clone_EXHIBIT NO. 3
CASE NO. 6727

EXHIBIT NO. 4 ANDERSON RANCH UNIT #8 1980' FSL & 660' FEL Sec 11-165-32 E 13 3/8" 48# Casing set at 606'. Cement Circ. 1500 PM 9 5/8" 40# Casing set at 4248'. Cement Circ. Inhibited packer fluid. 2 7/8" tubing and packer at ± 9700 '. 9976' Wolfcamp interval. toted and possibly marraw perfs will be re-squeezed 10,333' 12173 12192 12,258' 12,588' Mississippian interval. 13,400' Devonian interval. 13,620' 5 1/2" 17#, 20#, 23# Casing set at 13,688'. TOC at 7460' PTBD_13,65 PROPOSED 24. 13.

BEFORE EXAMINER NUTTER	
OIL CONSERVATION DIVISION	
Conce cinc. EXHIBIT NO. 4	
CASE NO. 6727	·
CASE NO. 6727	

1

EXHIBIT NO. 6



BEFORE EXAMINER NUTTER OIL CONSERVATION DIVISION

RODUCTION DEPARTMENT - HOBBS DIVISION
ANDERSON RANCH UNIT
LEA COUNTY, NEW MEXICO STRUCTURE MAP
TOP OF SAUNDERS LIMESTONE WOLFCAMP FORMATION CONTOUR INT: 20
SCALE
<u>سے بہ وہی یہ جارہ پر اطباع ہے کہ اور ان کا اور ان کا ا</u>

.

- 10 - ----

-



	BEFORE	EXAMINER	NUTTER
	OIL CON	ISERVATION	DIVISION
or	oco clore	EXHIBIT NO.	_7
- CA	SE NO	727	

	•		
•		۲	

-	NALCO	LABO	RATOR	BY REI	PORT
	NALCO	W	ATER A	NALYSI	S
	• •	IL COMPANY EW MEXICO 5	Ana: Dat	e Printed lysis No. e Sampled e Received	30-Jun-77 .77V1259,B 5-25-77 6-20-77
	Sample Marked: ARU	DISPOSAL DEV	& WC		
	DISSOLVED SOLIDS CATIONS Sodium,Na(calc.)	***WATER ANA mg/1 20200.	MLYSIS*** meq/1 8.77,	RESULTS	AS COMPOUNDS mg/l
	Calcium, Ca Magnesium, Mg Barium, Ba	1520. 389. .0	76.0 32.0 .0	as CaC03 as CaC03 as BaS04	3800. 1600. .0
	Sum of Cations	22100.	985.		~
	ANIONS Chloride,Cl Sulfate,S04 Carbonate,C03 Bicarbonate,HC03	33400. 1690. 590.	940. 35.2 9.7	as NaCl as Na2SO4 as CaCO3 as CaCO3	55000. 2500.
	brearbonaterneus		•		
	Sum of Anions TDS CALCULATED	35700. 57800.	985.		
	Total Iron,Fe Acid to Phen,CO2	1.5 24.6	.1 .6	as Fe as CaC()3	1.5 56.0
••	OTHER PROPERTIES	-	CaC03 STA (Index)		CaS()4 S()LUBILIT (meg/l)
	pH (units) Spec Gravity Turbidity (jtu)	6.8 1.030 1.6	2 .5 1.2	0 70F 0120F 0170F	-33.5 -33.4 -30.5
	Re 3 E. G. QUINN M. G. HARKER	emarks:			
				Velt	Define
	irodemarks of Nalco Chemical Company.	VALCO CHEM			AR LAND, TEXAS 77478

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Conoco clonc. EXHIBIT NO. 8
CASE NO. 6727
ೆ. ನಿಲ್ಲಾರಿ ಮಾಡಲ್ಪಡಿಸಿಕ್ ಕ್ರಿಲಿಷ್ ಪ್ರಮಾನವನ್ನು ಗ್ರೇಪ್ ಮಾಡ್ ಕ್ರೇಮಿಸಿಕ್ಸ್ ಗಡು ಕೊಳ್ಳಲ್ಲಿ ಮಾಡಲಿಸುವುದು ಸಂಗ್ರೆಯ ಕೊರ್ತಿಯಾಗಿ

EXHIBIT NO. 1



BEFORE EXAMINER NUTTER OIL CONSERVATION DIVISION

Conoco Cincexhibit NO. 2 CASE NO. 6727

ANDERSON RANCH UNIT MONTHLY WATER DISPOSAL REPORT

Well No. 16

Month	Volume	Pressure	Cumulative Ending
<u>1978</u>			
October November December	26,784 47,772 23,353	350 580 350	
<u>1979</u>			
January February March April May June July August September	12,388 18,395 20,112 25,942 1,771 63,539 62,510 45,985 9,808	0 250 250 220 200 200 200 200 200 200	12,066,238



PRESENT

BEFORE EXAMINER NUTTER OIL CONSERVATION DIVISION Comoco charexhibit NO. 3 CASE NO. 6727



BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Concellac_EXHIBIT NO. 4
CASE NO. 6727
The second strategy with the second

EXHIBIT NO. 6



.





BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Smaco clarc EXHIBIT NO. 7
CASENO 6727

			EXHIB
		ANA	ytical servic
\	NALCO	LABO	RATORY REPOR
			ATER ANALYSIS
		DIL COMPANY IEW MEXICO -5	Date Printed 30-Jun- Analysis No
-	Sample Marked: ARU	J DISPOSAL DEV	Date Received 6-20-77 WC
		***WATER ANA	
	DISSOLVED SOLIDS CATIONS Sodium.Na(calc.)	mg/1 20200.	RESULTS AS COMP meq/1 m 8.77.
	Calcium,Ca Magnesium,Mg Barium,Ba	1520. 389. .0	76.0 as CaC()3 380 32.0 as CaC()3 160 .0 as BaS()4 160
-	Sum of Cations	22100.	985.
C .	ANIONS Chloride,Cl Sulfate,S04 Carbonate,C03 Bicarbonate,HC03	33400. 1690. 590.	940. as NaC1 5500 35.2 as Na2S04 250 as CaC03 9.7 as CaC03 48
	Sum of Anions	35700.	985.
	TDS CALCULATED	57800.	
	Total Iron,Fe Acid to Phen,CO2	1.5 24.6	.1 as Fe .6 as CaCO3 5
	OTHER PROPERTIES		CaCO3 STABILITY CaSO4 SO (Index) (me
	pH (units) Spec Gravity Turbidity (jtu)	6.8 1.030 1.6	2 @ 70F -3 .5 @120F -3 1.2 @170F -3
	R 3 E. G. QUINN M. G. HARKER	emarks ı	/
			Part D. St.
	trademarks of Nalco Chemical Company.		P. O. BOX 87 • SUGAR LAND, TE
NALCO	2111 E. Dominguez St. Carson, CA 90745	REGIONAL ANALY1 6216 W. 66th Place Chicago, Illinois 60638	CAL LABORATORIES Box 16A Box 87 Paulsboro, NJ 08066 Sugar Land, TX 77478

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Conoco clar EXHIBIT NO. 8
CASE NO. 6727
ana yangan si ang kanangangan na sang kanangan si ang kanangan si sang kanangan si sang kanang kanang kanang ka

EXHIBIT NO. 1



ANDERSON RANCH UNIT MONTHLY WATER DISPOSAL REPORT

Well No. 16

Month	Volume	Pressure	Cumulative Ending
<u>1978</u>			
October November December	26,784 47,772 23,353	3 50 580 350	
1979			
January February March April May June July August September	12,388 18,395 20,112 25,942 1,771 63,539 62,510 45,985 9,808	0 250 250 220 200 200 200 200 200 200	12,066,238

BEFORE EXAMINER NUTTER	
OIL CONSERVATION DIVISION	
Conoco clac EXHIBIT NO 2.	
CASE NO. 6727	
יי היא האמני איני אייידי בענייני בענייני בייניאי אוניייאי אויידי אייידי אייידי אייידי אייידי אייידי אייידי אייידי	



BEFORE EXAMINER NUTTER	
OIL CONSERVATION DIVISION	
Conoce charce EXHIBIT NO. 3	
CASE NO. 6727	
ಾಲ್ ಅವರಿ ಕಾರ್ಯಕ್ರಮ ಮಾಡಿದ್ದ ಮಾಡಿದ್ದ ಮಾಡಿದ್ದ ಮಾಡಿದ್ದ ಮಾಡಿದ್ದ ಮಾಡಿದ್ದಾರೆ. ಇದು ಮಾಡಿದ್ದ ಮಾಡಿದ್ದ ಮಾಡಿದ್ದ ಮಾಡಿದ್ದ ಮಾಡ	



BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Conce, elne, EXHIBIT NO. 4
CASENO. 6727

EXHIBIT NO. 6





•

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
onoco clar EXHIBIT NO. 7
CASE NO. 6727

					EXHIBIT NO. 8
			LYTICA	L SEF	RVICE
			_อ /งระกอโอ	BY RE	ಾಗರ್ಶ
	NALCO		مالك الكمائم	اکانی ۲ ن	
			ATER A	NALYSI	S
		OIL COMPANY NEW MEXICO -5	Ana. Dat	e Printed lysis No. e Sampled	30-Jun-77 .77V1259, B 5-25-77
	Sample Marked: AR	U DISPOSAL DEV		e Received	6-20-77
	DISSOLVED SOLIDS	***WATER ANA	LYSIS***		AS COMPOUNDS
	CATIONS Sodium, Na(calc.)	mg/1 20200.	meq/1 877.	REJUCIO	mg/l
	Calcium, Ca	1520.	76.0 32.0	as CaC()3 as CaC()3	3800. 1600.
	Magnesium,Mg Barium,Ba	.0	.0	as BaS()4	.0
	Sum of Cations	22100.	985.		
$\left(\right)$	ANIONS	22400	640	NoCl	55.000
	Chloride,Cl Sulfate,S04	33400. 1690.	940. 35.2	as NaCl as Na2S04	55000. 2500.
	Ca rbonate,CO3 Bicarbonate,HCO3	590.	9.7	as CaCO3 as CaCO3	484.
	Sum of Anions	35700.	985.		
	TDS CALCULATED	57800.			
	Total Iron, Fe	1.5	•1	as Fe	1.5
	Acid to Phen,CO2	24.6	•6	as CaCO3	56.0
	OTHER PROPERTIES		CaC()3 STA (Index)		CaSO4 SOLUBILI (meg/l)
	pH (units) Spac Gravity	6.8 1.030	2 .5	@ 70F @120F	-33.5 -33.4
	Spec Gravity Turbidity (jtu)	1.6	1.2	@170F	-30.5
	3 E. G. QUINN M. G. HARKER	emarks:			
				RA	Deline
			q	0. 80X 87 • SUG	AR LAND, TEXAS 77478
NALCO	trademarks of Nalco Chemical Company.	NALCO CHEMI REGIONAL ANALYT			
	2111 E. Dominguez St. Carson, CA 90745	6216 W. 66th Place	Box 16A	Box 87	nd, TX 77478

•

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Conoco clar EXHIBIT NO. 8
CASE NO. 6727

Page 2 of 3

Examiner Hearing - Wednesday - November 14, 1979

CASE 6721: Application of Aminoil USA, Inc. for compulsory pooling, Eddy County, New Mexico.

Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp-Pennsylvanian formations underlying the N/2 of Section 10, Township 24 South, Range 28 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 6684: (Continued from October 31, 1979, Examiner Hearing)

Application of CO₂-In-Action, Inc. for creation of a new carbon dioxide gas pool and special pool rules, Harding County, New Mexico. Applicant, in the above-styled cause, seeks the creation of the North Bueyeros-Santa Rosa CO₂ Gas Pool and the promulgation of special pool rules therefor, including a provision for 40-acre spacing and proration units. Said pool would comprise all or parts of Sections 1 thru 4, Township 20 North, Range 30 East, and Sections 8, 9, 10, 15, 16, 17, 20, 21, 22, 27, 28, 32, 33 and 34, Township 21 North, Range 30 East.

CASE 6722: Application of Lloyd Davidson for an unorthodox oil well location, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of his Santa Fe Pucific Well No. 1, a Gallup-Entrada-Dakota test 960 feet from the South line and 1230 feet from the East line of Section 29, Township 16 North, Range 6 West, the SE/4 SE/4 of said Section 29 to be dedicated to the well.

CASE 6723: Application of Merrion & Bayless for compulsory pooling, Rio Arriba County, New Mexico.

Applicant, in the above-styled cause, seeks an order pooling, all mineral interests in the Pictured Cliffs formation underlying the SW/4 of Section 27, Township 24 North, Range 2 West, South Blanco-Pictured Cliffs Pool, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 6713: (Continued from October 31, 1979, Examiner Hearing)

Application of Depco Inc. for a unit agreement, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval for the White Ranch Unit Area, comprising 18,962 acres, more or less, of State, Federal, and fee lands in Townships 12 and 13 South, Ranges 29 and 30 East.

- CASE 6724: Application of Coquina Oil Corporation for a non-standard gas provation unit and an unorthodox location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a well to be drilled 660 feet from the South line and 1650 feet from the East line of Section 7, Township 19 South, Range 32 East, Lusk-Norrow Gas Pool, the S/2 of said Section 7 to be dedicated to the well as a non-standard 320-acre provation unit.
- CASE 6725: Application of Tenneco Oil Company for three non-standard gas proration units, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 291.23-acre non-standard gas proration unit comprising the W/2 of Section 6 and the NW/4 of Section 7, a 347.58-acre unit comprising the W/2 of Section 19 and the NW/4 of Section 30, and a 375.17-acre unit comprising the SW/4 of Section 30 and the W/2 of Section 31, all in Township 29 North, Range 8 West, Basin-Dakota Pool, each unit to be dedicated to a well to be drilled at a standard location thereon.
- CASE 6726: Application of Tesoro Petroleum Corporation for a waterflood project, McKinley County, New Mexico Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the South Hospah-Upper Sand Oil Pool by the injection of water into the Upper Hospah Sands through three wells located in Units E and M of Section 5 and Unit I of Section 8, Township 17 North, Range 8 West. Applicant further seeks an administrative procedure for expansion of said project.
- CASE 6727: Application of Conoco Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the abovestyled cause, seeks authority to dispose of produced salt water in its Anderson Ranch Unit Well No. 8 Tocated in Unit I of Section 11, Township 16 South, Range 32 East, Anderson Ranch Field. Applicant would dispose into the Wolfcamp, Mississippian, and Devonian formations in the overall interval from 9775 feet to 13,620 feet through selective perforations.

CASE 6728: Application of Conoco Inc. for pressure maintenance expansion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the expansion of its Scarborough Eaves PM Project by the conversion of its Eaves "A" Well No. 7 located in Unit J of Section 19, Township 26 South, Bange 37 East, to water injection in the Yates Seven Rivers formations.

BEFORE THE OIL CONSERVATION DIVISION ENERGY AND MINERALS DEPARTMENT OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF CONOCO INC., FOR APPROVAL TO CONVERT ITS ANDERSON RANCH UNIT WELL NO. 8 FROM SHUT-IN SALT WATER DISPOSAL WELL IN ANDERSON RANCH WOLFCAMP POOL TO SALT WATER DISPOSAL WELL IN ANDERSON RANCH WOLFCAMP, ANDERSON RANCH MORROW GAS AND ANDERSON RANCH DEVONIAN POOLS, LOCATED IN UNIT I, SECTION 11, T-16S, R-32E, LEA COUNTY, NEW MEXICO

0!L CC -MATION DIVISION NTA JE

Juse 6727

APPLICATION

Applicant, CONOCO INC., respectfully requests authority to convert from a shut-in salt water disposal well in the Anderson Ranch Wolfcamp Pool to an active salt water disposal well in the Anderson Ranch Wolfcamp, Anderson Ranch Morrow Gas, and Anderson Ranch Devonian Pools, its Anderson Ranch Unit Well No. 8, located 1980' FSL and 660' FEL of Section 11, T-16S, R-32E, Lea County, New Mexico, and in support thereof will show:

1. Applicant is operator and co-owner of the Anderson Ranch Unit consisting of SW/4 Section 1, S/2 Section 2, all Section 11, W/2 Section 12, W/2 NW/4 Section 13, and N/2 Section 14, T-16S, R-32E, Lea County, New Mexico.

2. Applicant wishes to dispose of produced water from the Anderson Ranch Unit into Anderson Ranch Unit Well No. 8, which has been shut-in since November 1969.

3. That heretotore, surplus produced water from the Anderson Ranch Unit has been disposed of into Well No. 16, and that due to mechanical problems in Well No. 16, it is no longer fit for disposal purposes.

4. That the proposed conversion is in the best interest of conservation prevention of waste.

5. That granting this application will not impair correlative rights of any party.

WHEREFORE, applicant respectfully requests this application be set for hearing before the Division's duly appointed Examiner and, upon hearing an order be entered authorizing the conversion of the Anderson Ranch Unit

R2078 disposal

Application Anderson Ranch Well No. 8 October 19, 1979

Well No. 8 to salt water disposal well in Anderson Ranch Wolfcamp, Anderson Ranch Morrow Gas and Anderson Ranch Devonian pools.

Respectfully submitted,

CONOCO INC.

By JOHN R. KEMP

Assistant Division Manager of Production Hobbs Division **,**

the the second





BEFORE THE OIL CONSERVATION DIVISION ENERGY AND MINERALS DEPARTMENT OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF CONOCO INC., FOR APPROVAL TO CONVERT ITS ANDERSON RANCH UNIT WELL NO. 8 FROM SHUT-IN SALT WATER DISPOSAL WELL IN ANDERSON RANCH WOLFCAMP POOL TO SALT WATER DISPOSAL WELL IN ANDERSON RANCH WOLFCAMP, ANDERSON RANCH MORROW GAS AND ANDERSON RANCH DEVONIAN POOLS, LOCATED IN UNIT I, SECTION 11, T-16S, R-32E, LEA COUNTY, NEW MEXICO

ntich enteidh C > CCONTA AL

Case 6727

APPLICATION

Applicant, CONOCO INC., respectfully requests authority to convert from a shut-in salt water disposal well in the Anderson Ranch Wolfcamp Pool to an active salt water disposal well in the Anderson Ranch Wolfcamp, Anderson Ranch Morrow Gas, and Anderson Ranch Devonian Pools, its Anderson Ranch Unit Well No. 8, located 1980' FSL and 660' FEL of Section 11, T-16S, R-32E, Lea County, New Mexico, and in support thereof will show:

 Applicant is operator and co-owner of the Anderson Ranch Unit consisting of SW/4 Section 1, S/2 Section 2, all Section 11, W/2 Section 12, W/2 NW/4 Section 13, and N/2 Section 14, T-16S, R-32E, Lea County, New Mexico.

2. Applicant wishes to dispose of produced water from the Anderson Ranch Unit into Anderson Ranch Unit Well No. 8, which has been shut-in since November 1969.

3. That heretofore, surplus produced water from the Anderson Ranch Unit has been disposed of into Well No. 16, and that due to mechanical problems in Well No. 16, it is no longer fit for disposal purposes.

4. That the proposed conversion is in the best interest of conservation prevention of waste.

5. That granting this application will not impair correlative rights of any party.

WHEREFORE, applicant respectfully requests this application be set for hearing before the Division's duly appointed Examiner and, upon hearing an order be entered authorizing the conversion of the Anderson Ranch Unit Application Anderson Ranch Well No. 8 October 19, 1979

Well No. 8 to salt water disposal well in Anderson Ranch Wolfcamp, Anderson Ranch Morrow Gas and Anderson Ranch Devonian pools.

Respectfully submitted,

CONOCO INC.

By

JOHN R. KEMP Assistant Division Manager of Production Hobbs Division

· · · ·





BEFORE THE OIL CONSERVATION DIVISION ENERGY AND MINERALS DEPARTMENT OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF CONOCO INC., FOR APPROVAL TO CONVERT ITS ANDERSON RANCH UNIT WELL NO. 8 FROM SHUT-IN SALT WATER DISPOSAL WELL IN ANDERSON RANCH WOLFCAMP POOL TO SALT WATER DISPOSAL WELL IN ANDERSON RANCH WOLFCAMP, ANDERSON RANCH MORROW GAS AND ANDERSON RANCH DEVONIAN POOLS, LOCATED IN UNIT I, SECTION 11, T-16S, R-32E, LEA COUNTY, NEW MEXICO

C.1. CO:::: TWATCH DAMSION ATA EL

Case 6727.

APPLICATION

Applicant, CONOCO INC., respectfully requests authority to convert from a shut-in salt water disposal well in the Anderson Ranch Wolfcamp Pool to an active salt water disposal well in the Anderson Ranch Wolfcamp, Anderson Ranch Morrow Gas, and Anderson Ranch Devonian Pools, its Anderson Ranch Unit Well No. 8, located 1980' FSL and 660' FEL of Section 11, T-16S, R-32E, Lea County, New Mexico, and in support thereof will show:

 Applicant is operator and co-owner of the Anderson Ranch Unit consisting of SW/4 Section 1, S/2 Section 2, all Section 11, N/2 Section 12, W/2 NW/4 Section 13, and N/2 Section 14, T-16S, R-32E, Lea County, New Mexico.

2. Applicant wishes to dispose of produced water from the Anderson Ranch Unit into Anderson Ranch Unit Well No. 8, which has been shut-in since November 1969.

3. That heretofore, surplus produced water from the Anderson Ranch Unit has been disposed of into Well No. 16, and that due to mechanical problems in Well No. 16, it is no longer fit for disposel purposes.

4. That the proposed conversion is in the best interest of conservation prevention of waste.

5. That granting this application will not impair correlative rights of any party.

WHEREFORE, applicant respectfully requests this application be set for hearing before the Division's duly appointed Examiner and, upon hearing an order be entered authorizing the conversion of the Anderson Ranch Unit Application Anderson Ranch Well No. 8 October 19, 1979

Well No. 8 to salt water disposal well in Anderson Ranch Wolfcamp, Anderson Ranch Morrow Gas and Anderson Ranch Devonian pools.

Respectfully submitted,

CONOCO INC.

By JOHN R. KEMP

Assistant Division Manager of Production Hobbs Division







ROUGH

dr/

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

September one 5]

CASE NO. 6727

Order No. R- 6196 6195

APPLICATION OF CONOCO INC. FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on <u>November 14</u> 19<u>79</u>, at Santa Fe, New Mexico, before Examiner <u>Daniel S. Nutter</u> NOW, on this <u>day of November</u>, 19<u>79</u>, the Division Director, 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 Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, <u>Conoco Inc.</u>
is the owner and operator of the <u>Anderson Ranch Unit Well No. 8</u>
located in Unit <u>I</u> of Section <u>11</u>, Township <u>16 South</u>
Range <u>32 East</u>, NMPM, <u>Anderson Ranch Field</u>
Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the <u>Wolfcamp</u>, Mississippian and formations, with injection into the <u>overall</u> interval from approximately 9776 feet to 13,620 feet.

(4) That the injection should be accomplished through $\frac{28}{2}$ -inch plastic lined tubing installed in a packer set at approximately $\frac{9700}{100}$ feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge or approved leak detection device should be attached to the annulus in order

. Devonian

to determine leakage in the casing, tubing, or packer.

(5) That the injection well or system should be equipped pressure /imiting switch with a pop-off value or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 1995 psi.

(6) That the operator should notify the supervisor of the <u>Hobbs</u> district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(7) 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.

(8) 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, Conoco Inc. is hereby authorized to utilize its Anderson Ranch Unit Well No. 8 located in Unit I of Section 11 , Township 16 South Range 32 East , NMPM, Anderson Ranch Field Lea County, New Mexico, to dispose of produced salt water Devonian into the Wolfcamp, Mississippian, and formation, injection to be accomplished through $2^{1/8}$ -inch tubing installed in a packer set at approximately 9700 feet, with injection into the overall interval from approximately 9,776 feet to 13,620 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; 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 shall be equipped with an approved leak detection device in order to determine leakage in the casing, tubing, or packer.

(2) That the injection well or system shall be equipped pressure limiting switch.
 with a pop-off value or acceptable substitute which will
 limit the wellhead pressure on the injection well to no more than MD psi.

(3) That the operator shall notify the supervisor of the <u>Hobbs</u> district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(4) That the operator shall immediately notify the supervisor of the Division's <u>Hobbs</u> district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

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

(6) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary. DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.