CASE 6467: GETTY OIL COMPANY FOR POOL CREATION AND SPECIAL POOL RULES, LEA COUNTY, NEW MEXICO

CASE NO.

6467

APPLICATION,

TRANSCRIPTS,

SMALL EXHIBITS,

ETC.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
State Land Office Building
Santa Fe, New Mexico
28 February 1979

EXAMINER HEARING

IN THE MATTER OF:

Application of Getty Oil Company for a dual completion, Lea County, New Mexico. — CASE 6466

and

Application of Getty Oil Company for pool creation and special pool rules, Lea County, New Mexico. — CASE 6467

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: Lynn Teschendorf, Esq.
Legal Counsel for the Division
State Land Office Bldg.
Santa Fe, New Mexico 87503

For the Applicant: William F. Carr, Esq.
CAMPBELL AND BLACK P. A.
Jefferson Plaza
Santa Fe, New Mexico 87501
and
Chester Blodget, Esq.
Getty Oil Company
Tulsa, Oklahoma

I N D E X

MOHAMMED YAMIN MERCHANT

E X H I B I T S

MR. STAMETS: The hearing will please come to order. We'll call at this time Case 6466.

MS. TESCHENDORF: Case 6466. Application of Getty Oil Company for dual completion, Lea County, New Mexico.

MR. CARR: Mr. Examiner, inasmuch as this and the succeeding case both involve the subject well and the testimony will considerably overlap, I would request that these cases be consolidated for the purposes of testimony only.

MR. STAMETS: Let us call Case 6467 and we will consolidate them.

MS. TESCHENDORF: Case 6467. Application of Getty Oil Company for pool creation and special pool rules, Lea County, New Mexico.

MR. CARR: Mr. Examiner, I'm William F. Carr, Campbell and Black, P. A., Santa Fe, appearing on behalf of the Applicant, Getty Oil Company. I have one witness who needs to be sworn.

(Witness sworn.)

MOHAMMED YAMIN MERCHANT

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

Q. Will you state your full name for the record, please?

A. My full name is Mohammed Yamin Merchant.

Q. And where do you reside?

A. I reside in Hobbs, New Mexico.

Q. Mr. Merchant, by whom are you employed and in what position?

A. I'm employed with Getty Oil Company as a petroleum engineer.

Q. Have you previously testified before the Oil Conservation Commission?

A. No, I have not.

Q. Would you briefly summarize for the Examiner your educational background and your work experience?

A. I graduated from high school in Karachi, Pakistan, and got my chemical engineering degree from South Dakota School of Mines and Technology in Rapid City, South Dakota. I went to work for Getty in January of '75 in their International Division, Los Angeles, California; spent two months there, and then I spent three months in Odessa, Texas, in their gas processing operations, and from there I moved to Andrews, Texas, and I was involved in deep drilling and

production all over West Texas.

And as of June, 1977, I'm residing in Hobbs, working out of the Hobbs Office as a petroleum engineer.

Q. Mr. Merchant, are you familiar with the subject matter of these applications and the subject wells?

A. Yes, sir, I am.

MR. CARR: Mr. Examiner, are the witness' qualifications acceptable?

MR. STAMETS: They are.

Q. (Mr. Carr continuing.) Mr. Merchant, will you briefly state what Getty is seeking in these applications?

A. Okay, Getty is seeking to drill, complete, and produce a Morrow-Wolfcamp well in Lea County, New Mexico.

Q. Mr. Merchant, will you refer to what has been marked for identification as Exhibit Number One and explain to the Examiner what it is and what it shows?

A. Okay. Exhibit Number One is Commission Form C-102, which shows the location of the well. Basically that is all, just telling us where the well is located, the legal description.

Q. Will you refer to what has been marked for identification as Exhibit Number Two and explain what it is?

A. Exhibit Number Two is a well sketch of where the casing is set -- casings are set and how they are cemented and what the present setup is in the well, downhole configura-

tion.

We've got two strings of tubing in the hole, 2-3/8ths. We got a dual packer in the hole set at 10,187, and a Model D permanent packer at 12,200. We're producing the Wolfcamp zone from perforations from 10,810 to 10,828 through the short string, and we're producing the Morrow zone from 12,907 to 13,102 through the long string.

Q Will you refer to what has been marked as Exhibit Number Three and summarize the information contained on that?

A Exhibit Number Three basically shows the same information what we just saw in Exhibit Two. It also shows what each zone, Wolfcamp and Morrow, tested as.

The Wolfcamp tested at 600 barrels of oil and 1,153 Mcf of gas on a 2064 choke, and the Morrow zone tested at absolute open flow at 11,107 Mcf a day.

Q What is the gas/oil ratio in the Wolfcamp?

A The gas/oil ratio in the Wolfcamp is 1921-to-1.

Q Will you please refer to what has been marked as Exhibit Number Four and explain to the Examiner what it is?

AExhibit Four again is graphical illustration of what the 4-point looked like on the Morrow zone, which calculated out to be 11,107 Mcf a day.

Q And now I direct your attention to Exhibit Number Five and ask you to explain what this shows.

A Exhibit Five is a Commission Form C-122 and it have all the data which we used to plot the curve which was seen in Exhibit Four, to calculate the absolute open flow potential.

Q Mr. Merchant, what was the initial bottom hole pressure that you encountered in the Wolfcamp?

A The initial bottom hole pressure in the Wolfcamp was 5661. That's right.

Q What other evidence do you have of good permeability in the Wolfcamp that would lead you to believe it could drain 160 acres?

A From all the data that we have right now, the initial bottom hole pressure, initial flowing pressure, and the instant shut-in we had on the well at any time it was shut-in instant build-up, we feel like there is enough permeability, a very good permeability to drain 160 acres of the reservoir.

Q Now admittedly your data is somewhat incomplete at this time.

A At this time we don't -- don't have enough data in the sense it is the first well in that area. We do not have enough production data and hopefully, we will have some more production data and may have another well in the

area at this time to back up what we think.

Q. So you are relying on the bottom hole pressure and the pressure build-up data that you have to conclude that this well will drill 160-acres, is that correct?

A. That's correct.

Q. Will you refer to what has been marked for identification as Exhibit Number Six and explain to the Examiner what it shows?

A. Exhibit Six is a plat showing the subject well and offsets around it.

Q. Okay, will you now look at Exhibit Number Seven and explain what that is?

A. Exhibit Seven if basically the same thing as Exhibit Six, except that it includes more sections around Getty 35 State, the subject well.

Q. Mr. Merchant, how close is the nearest Wolfcamp production to the subject well?

A. The nearest Wolfcamp production we know of is at least in a six to seven mile radius.

Q. Now I would direct your attention to what has been marked for identification as Exhibit Number Eight, and ask you to explain to the Examiner what this is.

A. Exhibit Eight is an open hole log on the subject well. It has the formation tops marked from top to bottom, Wolfcamp, Strawn, Atoka, and the Morrow.

It also shows the perforations in the Wolfcamp zone and the perforations in the Morrow zone.

Q. Will you refer to what has been marked as Exhibit Number Nine and explain to the Examiner what it is?

A. Exhibit Nine is a packer leakage test required by the Commission and it shows that we do not have any kind of communication between the top zone and the bottom zone, the Wolfcamp and the Morrow.

Q. Would you refer to what has been marked as Exhibit Number Ten and explain what it is and note the difference between it and Exhibit Number Six? Exhibit Six was the prior plat.

A. Okay, Exhibit Six is showing the whole section and gave 35 State 640-acre dedicated to a Morrow gas zone.

Exhibit Eleven is showing 160 acres dedicated to the Wolfcamp zone.

Q. Mr. Merchant, is it correct then that the acreage outlined in red on your Exhibit Number Ten is the acreage which you would like to dedicate to the subject well and also like included in the new pool?

A. That's correct.

Q. Will you refer to what has been marked as Exhibit Number Eleven and explain what it is?

A. What exhibit number was it, Number Eleven?

Q. Number Eleven.

A. Exhibit Eleven is a copy of the Form C-107, Application for Multiple Completion, which have the data of where the well is and also shows what zones, tops and bottoms of each zone we're producing from, and also have the list of offset operators to the lease on which this well is located.

Q. Mr. Merchant, why is 160-acre spacing necessary for this well?

A. There are two main reasons why we are asking for 160-acre spacing.

The first one is economics. We don't feel like it's economically profitable to drill 11,000 feet in a 40-acre spacing.

And the second reason is we feel very confident that we can drain 160 acres of the reservoir by one well instead of going to four wells.

There is enough -- from the initial pressure data we feel like there is enough permeability in the reservoir that one well would drain 160-acre spacing.

Q. Mr. Merchant, if special pool rules were adopted which provide for 160-acre spacing, will this, in your opinion, avoid the drilling of unnecessary wells?

A. Yes.

Q. In your opinion would it reduce the risk resulting from the drilling of an excessive number of wells?

A. That's true.

Q. Now, Mr. Merchant, if further development in the pool and the production history of the wells establish that they cannot effectively drain 160 acres, could the pool subsequently be developed on a smaller spacing pattern?

A. That's right, if we have enough reservoir data and the pressure data and production history, and at a later date it proves to be that we need 40-acre spacing to effectively drain the reservoir, we would definitely go for it.

Q. In your opinion will granting the application be in the interest of conservation, the prevention of waste, and the protection of correlative rights?

A. Yes, sir.

Q. Were Exhibits One through Eleven prepared by you or under your supervision and direction?

A. They were prepared by me.

MR. CARR: At this time, Mr. Examiner, we would offer into evidence Exhibits One through Eleven.

MR. STAMETS: These exhibits will be admitted.

MR. CARR: I have nothing further on direct.

CROSS EXAMINATION

BY MR. STAMETS:

Q. Mr. Merchant, have you talked to our Hobbs District Office personnel as to where they have picked the top of the Wolfcamp in this area?

A. No, I have not.

Q. The reason I ask that, is I've got information that they picked the top of the Wolfcamp at 11,285, which is considerably below the 10,828 foot lower perforation in what you've called the Wolfcamp, and also, it's difficult to look at this log without being able to correlate it with some others.

A couple of those sections where you show the top of the Wolfcamp and then again at about 10,900 certainly look a lot like Bone Springs Sand.

A. From all the data we have and all the data our geologist can come up with, we still feel like that we are producing from the Wolfcamp reservoir.

We have tried to determine another way besides, you know, going by the electric logs, of what's what, and the second way we were trying to come up with and trying to see if we are in the Wolfcamp or the Bone Springs is from produced water analysis, and as of this date we have not been able to say, well, it is the Bone Springs production.

Q. Would Getty be willing to get together with our District personnel and clarify with them the actual formation name?

A. I don't see any reason why we can't.

Q. And for purposes of your application, it really doesn't make any difference whether or not this is called Bone Springs or called Wolfcamp, you still seek the creation of a new pool and temporary special pool rules.

A. That's correct.

Q. Okay. Is this well producing now?

A. Yes, sir, the well is producing from both zones.

Q. Okay. How long do you think it will take you to develop the information that you would need to prove that the well is capable of draining at least 160 acres in the upper zone?

A. We feel like that we should -- we need at least six months data; three to six months data. And the pressure, you know, pressure build-up we will run later on, and the production history, and say whether we can drain 160 acre spacing or not.

Q. Okay, how long a period of time would it take you to evaluate the six months production history?

A. Another six months, I would think.

Q. So if you had temporary rules for a period of one year, you should be able to come in at the end of that time and show by evidence that the well is or is not draining 160 acres?

A. That's correct.

Q. I notice your short string of tubing is set on something over 600 feet above the upper perforations. Why is that?

A. As you say, the line of top is 10,389, and lot easier both packerwise and if you're running any kind of logging tools or wireline tools, to get through a 7-inch packer, give you some more room to bore down the hole and do what you want to do rather than go down and have very little room to, well, you know, if you run a correlation log, you need a little bit more room, for example.

If you set it, you really would not have enough room, I would think.

Q. Will you be able to show at the end of that one year that this method of production through tubing is efficient and effective, as well?

A. Yes, I feel like we can. We will.

Q. How long has the Wolfcamp zone been producing?

A. We completed the Wolfcamp zone in November, 1978, and we produced it until November 18. I'll give you the date, if you would like to have the date, when we perforated the Wolfcamp.

Q. No, just an indication.

A. But in about a week's time we shut in the Wolfcamp on November 18th, 1978. And it was shut in until

January 5th, 1979, on account of gas connection.

Q So you really don't have any extensive production history?

A No, sir, we don't.

Q Okay.

MR. STAMETS: Any other questions of this witness? He may be excused.

Oh, one other question. Do you all have a preferred pool name out there?

A We would like to call it Grama Ridge Wolfcamp. Or Grama Ridge Bone Springs, whatever it turns out to be.

MR. STAMETS: Okay, very good.

Any other questions of the witness? He may be excused.

Anything further in this case?

MR. CARR: Nothing further.

MR. STAMETS: We'll take the case under advisement.

We will hold up any action on this case until such time as we have clarification through our District Office as to what the formation is.

A Thank you.

(Hearing concluded.)

REPORTER'S CERTIFICATE

I, SALLY W. BOYD, a court 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, knowledge, and skill, from my notes taken at the time of the hearing.

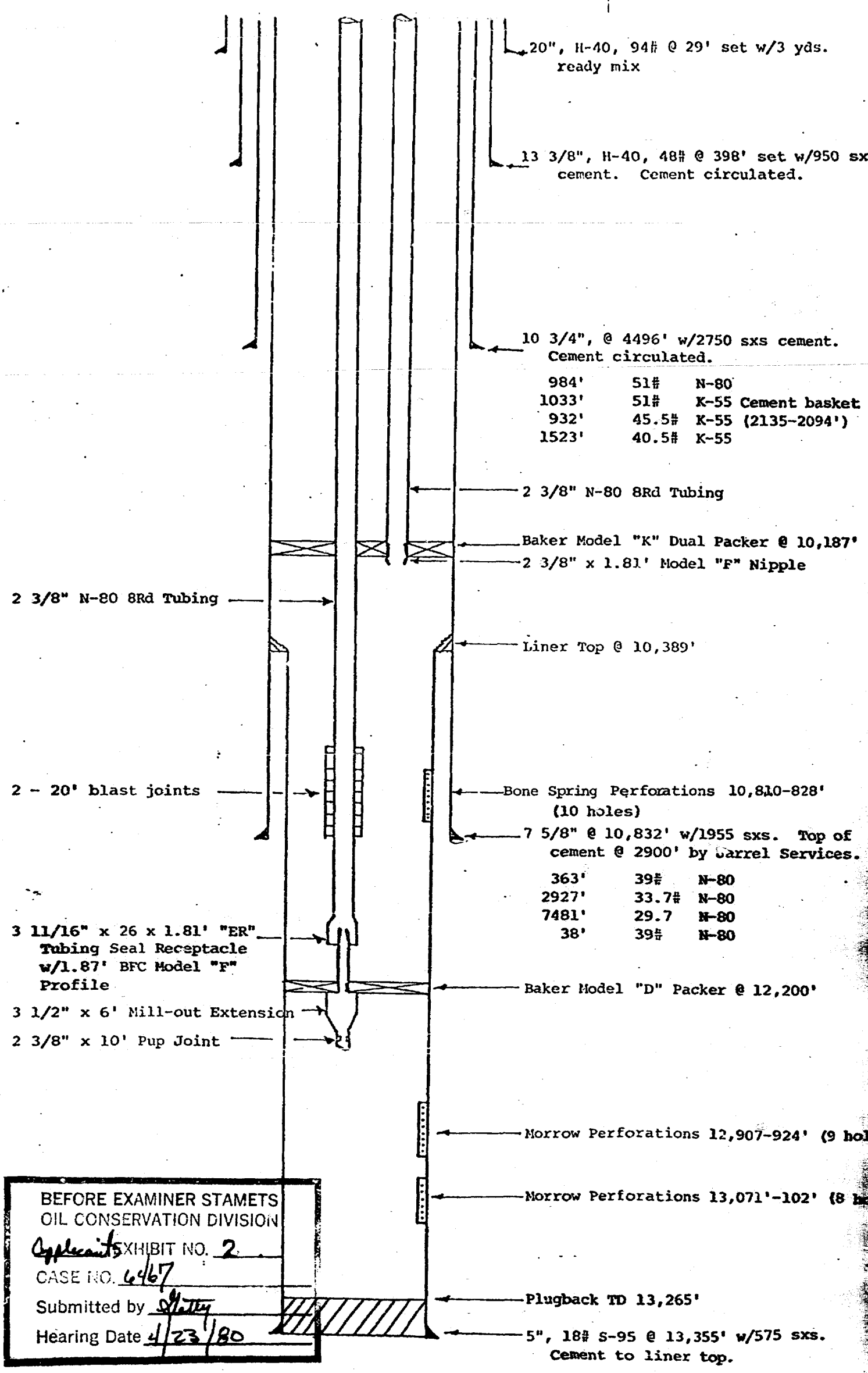
Sally W. Boyd, C.S.R.

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
[illegible]
Santa Fe, New Mexico 87501

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 6466-6467 heard by me on 2-28 1979.

Richard L. Stamets, Examiner
Oil Conservation Division

GETTY "35" STATE WELL NO. 1
MORROW BONE SPRING DUAL COMPLETION



BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
Applicant's EXHIBIT NO. 2
CASE NO. 6467
Submitted by Getty
Hearing Date 4/23/80

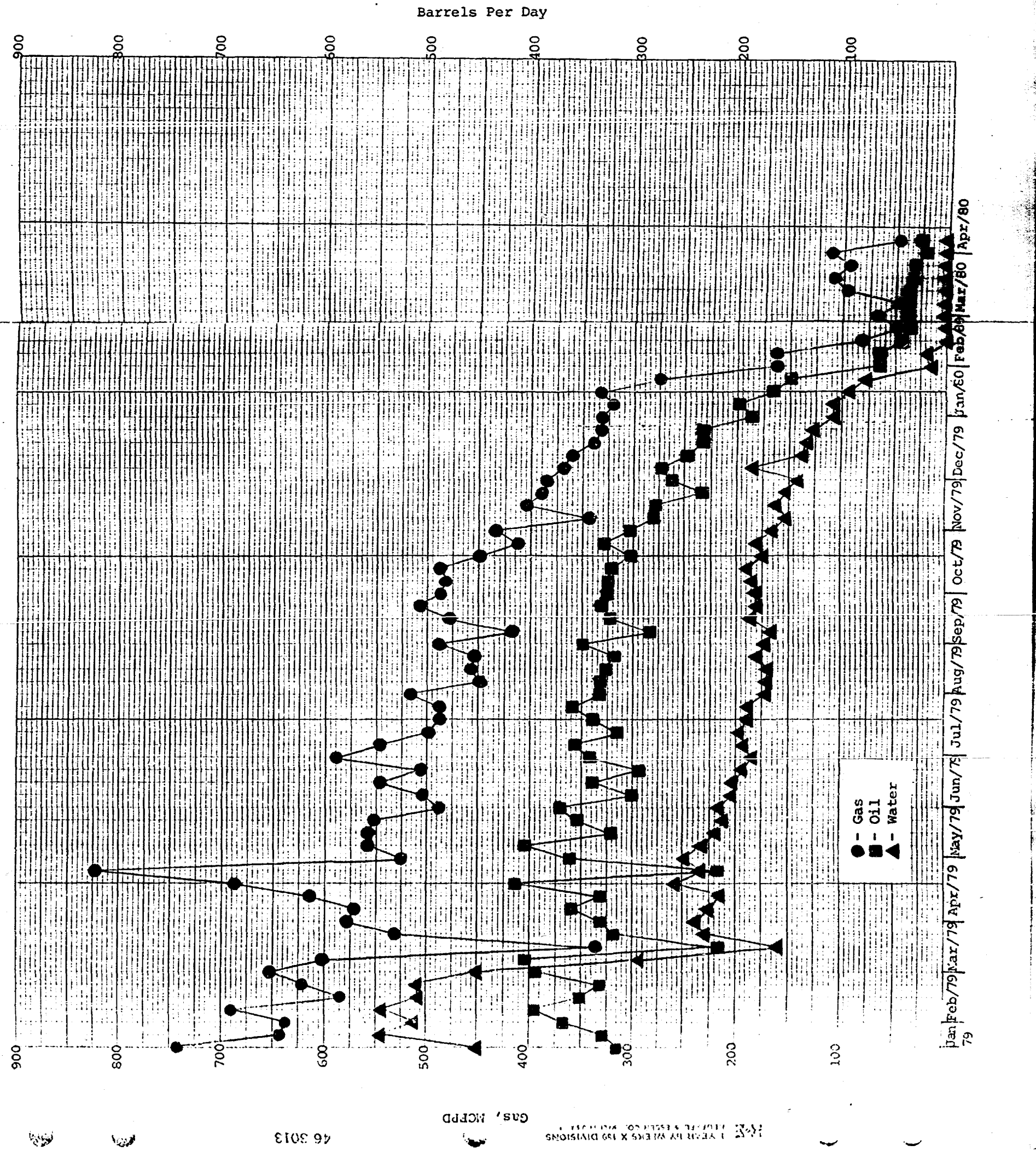
DAILY WELL TESTS

GETTY 35 STATE WELL NO. 1 - BONE SPRING

DATE	CHOKE	GAS, MCFPD	OIL, BPD	WATER, BPD	TBG. PRESSURE
1/1/79	-	-	-	-	-
1/8/79	-	-	-	-	-
1/15/79	-	-	-	-	-
1/22/79	15/64	742	315	450	1550
1/29/79	16/64	642	330	545	1450
2/5/79	16/64	638	368	512	1500
2/12/79	16/64	691	395	544	1500
2/19/79	16/64	586	352	507	1500
2/26/79	16/64	621	333	508	1500
3/5/79	16/64	655	394	450	1475
3/12/79	14/64	604	403	293	1425
3/19/79	11/64	336	218	160	1350
3/26/79	13/64	532	318	229	1400
4/2/79	13/64	579	332	237	1375
4/9/79	13/64	573	360	225	1350
4/16/79	13/64	616	332	215	1300
4/23/79	15/64	690	414	256	1275
4/30/79	14/64	325	360	229	1250
5/7/79	14/64	526	361	248	1225
5/14/79	14/64	558	404	232	1200
5/21/79	14/64	556	322	219	1200
5/28/79	14/64	553	354	212	1125
6/4/79	14/64	488	370	216	1150
6/11/79	14/64	505	300	204	1150
6/18/79	14/64	548	339	202	1100
6/25/79	14/64	507	294	193	1175
7/2/79	14/64	590	343	184	1075
7/9/79	14/64	547	357	192	1050
7/16/79	14/64	497	315	196	1050
7/23/79	14/64	488	339	188	1025
7/30/79	14/64	488	360	188	1015
8/6/79	14/64	516	333	173	1000
8/13/79	14/64	450	332	171	1000
8/20/79	14/64	458	328	170	975
8/27/79	14/64	454	319	179	925
9/3/79	14/64	488	350	172	950
9/10/79	14/64	418	278	166	950
9/17/79	14/64	478	324	186	900
9/24/79	14/64	508	327	181	925
10/1/79	14/64	488	325	180	900
10/8/79	14/64	483	325	184	900
10/15/79	14/64	488	323	188	850
10/22/79	14/64	449	303	173	850

DATE	CHOKE	GAS, MCFPD	OIL, BPD	WATER, BPD	TBG. PRESSURE
10/29/79	14/64	413	329	177	850
11/5/79	14/64	435	304	166	825
11/12/79	14/64	344	281	153	800
11/19/79	14/64	405	279	162	800
11/26/79	14/64	390	233	153	800
12/3/79	14/64	385	262	140	800
12/10/79	14/64	369	272	184	750
12/17/79	14/64	361	247	137	725
12/24/79	14/64	340	234	133	700
12/31/79	14/64	334	232	125	675
1/7/80	14/64	334	186	108	650
1/14/80	14/64	321	198	105	650
1/21/80	14/64	334	166	93	625
1/28/80	14/64	275	150	78	550
2/4/80	28/64	163	65	14	520
2/11/80	32/64	163	66	16	510
2/18/80	32/64	81	44	0	510
2/25/80	32/64	48	35	0	490
3/3/80	32/64	66	39	1	510
3/10/80	32/64	46	36	0	480
3/17/80	32/64	96	36	0	490
3/24/80	32/64	110	33	0	490
3/31/80	32/64	94	33	0	450
4/7/80	32/64	113	22	0	470
4/14/80	32/64	47	25	0	650

GETTY 35 STATE WELL NO. 1 - BONE SPRING
DAILY WELL TESTS



GETTY "35" STATE WELL NO. 1 - BONE SPRING

DATE		Oil	Water	Gas
1979	Jan	8598	0	14217
	Feb	9081	0	14816
	Mar	9972	7750	16399
	Apr	10394	6840	28362
	May	10813	0	16266
	Jun	10040	6840	14487
	Jul	10260	0	14226
	Aug	10220	0	13151
	Sep	9597	6840	12217
	Oct	9407	7068	12145
	Nov	8451	6840	10882
	Dec	7521	7068	9933
1980	Jan	5549	2931	7626
	Feb	1407	195	2207
	Mar	1062	7068	1776
TOTAL		122,372	59,440	188,710

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
Applicants EXHIBIT NO. 5
CASE NO. 6467
Submitted by Getty
Hearing Date 4/23/80

JARREL SERVICES, INC.

POST OFFICE BOX 1834 PHONE 505 393-5398
HOBBS, NEW MEXICO 88240

COMPANY: Getty Oil Company

WELL: Getty 35 State, No. 1 FIELD: Undesignated Wolfcamp

CHRONOLOGICAL PRESSURE DATA

DATE	STATUS OF WELL	TIME	ELASPED TIME HRS.	MIN.	SURFACE PRESSURE TBG	CSG	BHP @ (-7162) 10838'PSIG
1978							
11/10	Shut in 5 hours. Run Tandem Bombs & Set						
	Bombs off @ 10838'	8:30 PM	5	00		PKR	5818
	Shut in	9:30	1	00	-	-	5824
	"	10:30	2	00	-	-	5824
	"	11:30	3	00	-	-	5824
11/11	"	12:30 AM	4	00	-	-	5824
	"	1:30	5	00	-	-	5824
	"	2:30	6	00	-	-	5824
	"	3:30	7	00	-	-	5824
	"	4:30	8	00	-	-	5824
	"	5:30	9	00	-	-	5824
	"	6:30	10	00	-	-	5824
	"	7:30	11	00	-	-	5831
	"	8:30	12	00	-	-	5831
	Opened on 19/64" Choke	9:00 AM	12	30	-	-	5831
	Flowing	10:00	1	00	-	-	5762
	"	11:00	2	00	-	-	5743
	"	12:00 N	3	00	-	-	5762
	Shut in to 17/64" Choke	12:30 PM	3	30	-	-	5774
	Shut in to 14/64" Choke	1:00	0	30	-	-	5781
	Shut in to 12/64" Choke	1:30	0	30	-	-	5787
	Opened to 20/64" Choke	2:00	0	30	-	-	5799
	Shut in to 18/64" Choke	3:00	1	00	-	-	5743
	Opened to 19/64" Choke	4:30	1	30	-	-	5755
	Opened to 20/64" Choke	5:00	0	30	-	-	5724
	Flowing	6:00	1	00	-	-	5718
	"	7:00	2	00	-	-	5718
	"	8:00	3	00	-	-	5724
	"	9:00	4	00	-	-	5724
	"	10:00	5	00	-	-	5718
	"	11:00	6	00	-	-	5712
	"	12:00 MN	7	00	-	-	5712
11/12	"	1:00 AM	8	00	-	-	5712
	"	2:00	9	00	-	-	5699
	"	3:00	10	00	-	-	5699
	"	4:00	11	00	-	-	5699
	"	5:00	12	00	-	-	5699
	"	6:00	13	00	-	-	5699
	"	7:00	14	00	-	-	5693
	"	8:00	15	00.	-	-	5687
	"	9:00	16	00	-	-	5687
	"	10:00	17	00	-	-	5687

WELL: Getty 35 State, No. 1
PAGE: 2

DATE	STATUS OF WELL	TIME	ELASPED TIME HRS.	ELASPED TIME MIN.	SURFACE PRESSURE TBG	SURFACE PRESSURE CSG	BHP @ (-7162) 10838'PSIG
	Flowing	11:00	18	00	-	-	5680
	"	12:00 N	19	00	-	-	5680
	"	1:00 PM	20	00	-	-	5680
	"	2:00	21	00	-	-	5674
	"	3:00	22	00	-	-	5674
	"	4:00	23	00	-	-	5674
	"	5:00	24	00	-	-	5668
	"	6:00	25	00	-	-	5668
	"	7:00	26	00	-	-	5661
	"	8:00	27	00	-	-	5655
	"	9:00	28	00	-	-	5655
	"	10:00	29	00	-	-	5655
	"	11:00	30	00	-	-	5655
	"	12:00 MN	31	00	-	-	5655
11/13	"	1:00 AM	32	00	-	-	5655
	"	2:00	33	00	-	-	5655
	"	3:00	34	00	-	-	5649
	"	4:00	35	00	-	-	5649
	"	5:00	36	00	-	-	5643
	"	6:00	37	00	-	-	5643
	"	7:00	38	00	-	-	5636
	Opened to 24/64" Choke	8:00	39	00	-	-	5636
	Flowing	9:00	1	00	-	-	5580
	"	10:00	2	00	-	-	5561
	"	11:00	3	00	-	-	5542
	"	12:00 N	4	00	-	-	5542
	Shut in to 20/64" Choke	12:30 PM	4	30	-	-	5536
	Flowing	1:00	0	30	-	-	5561
	"	2:00	1	30	-	-	5567
	"	3:00	2	30	-	-	5574
	"	4:00	3	30	-	-	5567
	"	5:00	4	30	-	-	5567
	"	6:00	5	30	-	-	5567
	"	7:00	6	30	-	-	5567
	"	8:00	7	30	-	-	5561
	"	9:00	8	30	-	-	5561
	"	10:00	9	30	-	-	5561
	"	11:00	10	30	-	-	5561
	"	12:00 MN	11	30	-	-	5561
11/14	"	1:00 AM	12	30	-	-	5555
	"	2:00	13	30	-	-	5555
	"	3:00	14	30	-	-	5555
	"	4:00	15	30	-	-	5555
	"	5:00	16	30	-	-	5555
	"	6:00	17	30	-	-	5555
	"	7:00	18	30	-	-	5542
	"	8:00	19	30	-	-	5542
	"	9:00	20	30	-	-	5542
	"	10:00	21	30	-	-	5542
	"	11:00	22	30	-	-	5542
	"	12:00 N	23	30	-	-	5542
	"	1:00 PM	24	30	-	-	5536
	"	2:00	25	30	-	-	5536

WELL: Getty 35 State, No. 1
PAGE: 3

DATE	STATUS OF WELL	TIME	ELASPED TIME HRS.	MIN.	SURFACE PRESSURE TBG	CSG	BHP @ (-7162) 10838 PSIG
	Flowing	3:00	26	30	–	–	5536
	"	4:00	27	30	–	–	5530
	"	5:00	28	30	–	–	5530
	"	6:00	29	30	–	–	5530
	"	7:00	30	30	–	–	5530
	"	8:00	31	30	–	–	5530
	"	9:00	32	30	–	–	5530
	"	10:00	33	30	–	–	5524
	"	11:00	34	30	–	–	5524
	"	12:00 MN	35	30	–	–	5542
11/15	"	1:00 AM	36	30	–	–	5542
	"	2:00	37	30	–	–	5542
	"	3:00	38	30	–	–	5536
	"	4:00	39	30	–	–	5536
	"	5:00	40	30	–	–	5530
	"	6:00	41	30	–	–	5524
	"	7:00	42	30	–	–	5524
	"	8:00	43	30	–	–	5524
	Shut in	9:00	44	30	1710 G	*	5524
	"	9:15	0	15	–	–	5580
	"	9:30	0	30	–	–	5586
	"	10:00	1	00	–	–	5592
	"	11:00	2	00	–	–	5599
	"	12:00 N	3	00	–	–	5605
	"	1:00 PM	4	00	–	–	5618
	"	2:00	5	00	–	–	5624
	"	3:00	6	00	–	–	5630
	"	4:00	7	00	–	–	5636
	"	5:00	8	00	–	–	5636
	"	6:00	9	00	–	–	5636
	"	7:00	10	00	–	–	5643
	"	8:00	11	00	–	–	5643
	"	9:00	12	00	–	–	5643
	"	10:00	13	00	–	–	5643
	"	11:00	14	00	–	–	5643
	"	12:00 MN	15	00	–	–	5643
11/16	"	1:00 AM	16	00	–	–	5649
	"	2:00	17	00	–	–	5649
	"	3:00	18	00	–	–	5649
	"	4:00	19	00	–	–	5655
	"	5:00	20	00	–	–	5655
	"	6:00	21	00	–	–	5655
	"	7:00	22	00	–	–	5655
	"	8:00	23	00	–	–	5655
	"	9:00	24	00	–	–	5661
	"	10:00	25	00	–	–	5661
	"	11:00	26	00	–	–	5661
	"	12:00 N	27	00	–	–	5661
	"	1:00 PM	28	00	–	–	5661
	"	2:00	29	00	–	–	5661
	"	3:00	30	00	–	–	5661
	"	4:00	31	.00	–	–	5661

WELL: Getty 35 State, No. 1
PAGE: 4

DATE	STATUS OF WELL	TIME	ELASPED TIME HRS.	MIN.	SURFACE PRESSURE TBG	CSG	BHP @ (-7162) 10838'PSIG
	Shut in	5:00	32	00	-	-	5661
	"	6:00	33	00	-	-	5661
	"	7:00	34	00	-	-	5661
	"	8:00	35	00	-	-	5661
	"	9:00	36	00	-	-	5661
	"	10:00	37	00	-	-	5661
	"	11:00	38	00	-	-	5661
	"	12:00 MN	39	00	-	-	5661
11/17	"	1:00	40	00	-	-	5661
	"	2:00	41	00	-	-	5661
	"	3:00	42	00	-	-	5661
	"	4:00	43	00	-	-	5661
	"	5:00	44	00	-	-	5661
	"	6:00	45	00	-	-	5661
	"	7:00	46	00	-	-	5661
	"	8:00	47	00	-	-	5661
	"	9:00	48	00	-	-	5661
	"	10:00	49	00	-	-	5661
	"	11:00	50	00	-	-	5661
	Fished Bombs & run Static Gradient	11:30	50	30	2107	-	5661

* Total Oil Produced during 96.0 hrs Test 1535 BBLS
Total Gas Produced during 96.0 hrs Test 6364 MCF
Average Rate of Gas Per Day 1591 MCF/D
Final Hour Flow of Gas 822 MCF/D

GOR = 4146 CuFt Gas/BBL Oil

JARREL SERVICES, INC.

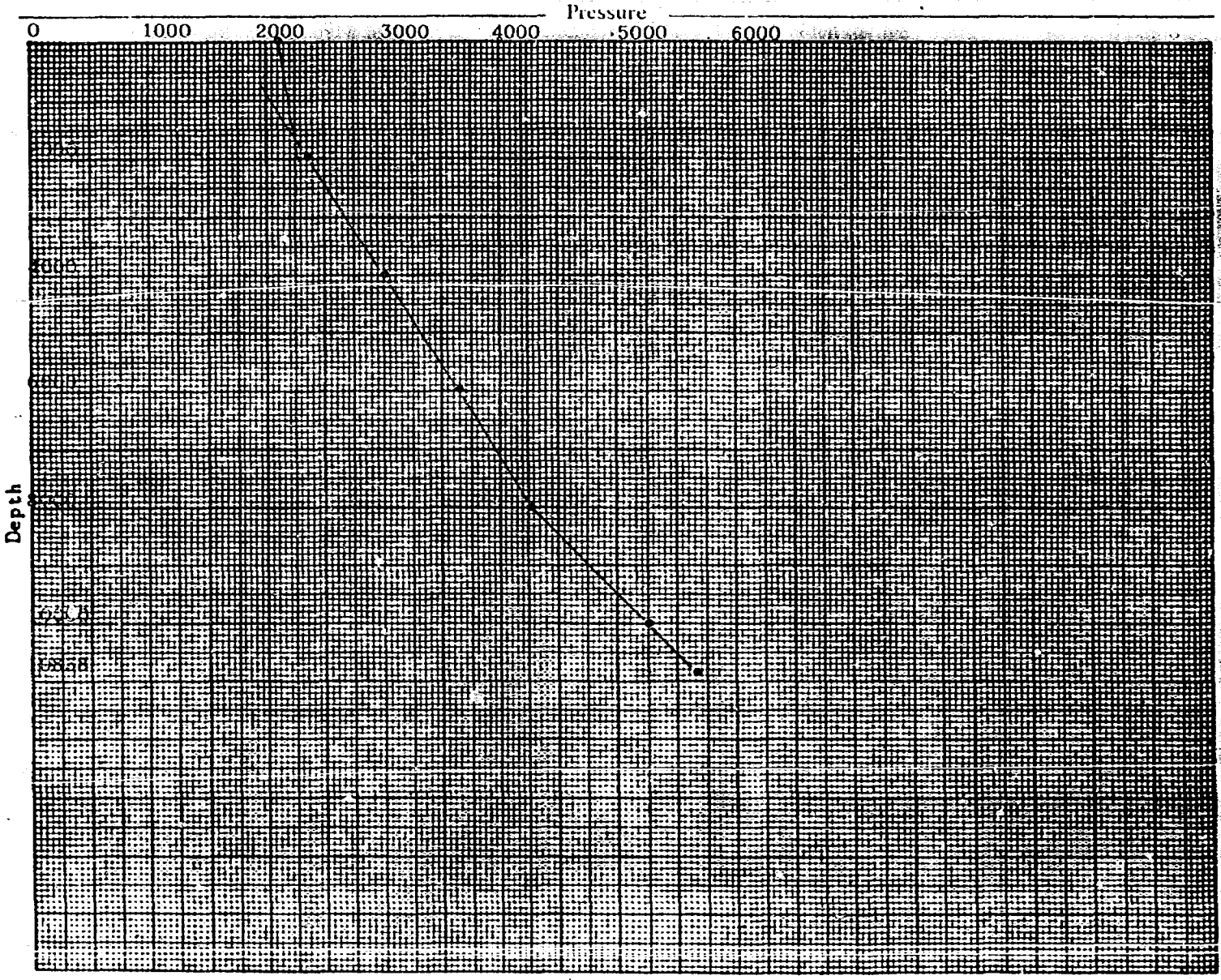
POST OFFICE BOX 1664 PHONE 505 393-5396

HOBBS, NEW MEXICO 88240

OPERATOR Getty Oil Company
FIELD Undesignated
FORMATION Wolfcamp
LEASE Getty 35 State WELL #1
COUNTY Lea STATE New Mexico
DATE November 17, 1978 TIME 11:30 AM
Status Shut in
Test Depth 10838'
Time S. I. 50.5 hrs Last test date 11/11/78
Tub Pres. 2107 BHP last test 5831
Cas. Pres. PKR BHP change 170# Loss
Elev. 3676'Gl. Fluid top 1739'
Datum (-7162) Water top 8000'
Temp. @ 172°F Run by JSI #13
Cal. No. A 18478 N Chart No. 1

BOTTOM HOLE PRESSURE RECORD

Depth	Pressure	Gradient
0	2107	-
2000	2365	.129
4000	3002	.319
6000	3642	.320
8000	4282	.320
10000	5254	.486
10838 (-7162)	5661	.486



K•E SEMI-LOGARITHMIC • 3 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.

46 5493

Semilog Plot
Pressure Buildup 11/7/78
Getty 35 State Well #1 - Bone Spring

BHP @ 10,838 (psig)

5700
5675
5650
5625
5600
5575
5550
5525
5500

(P,1 hr.)

M= 40 psi/cycle

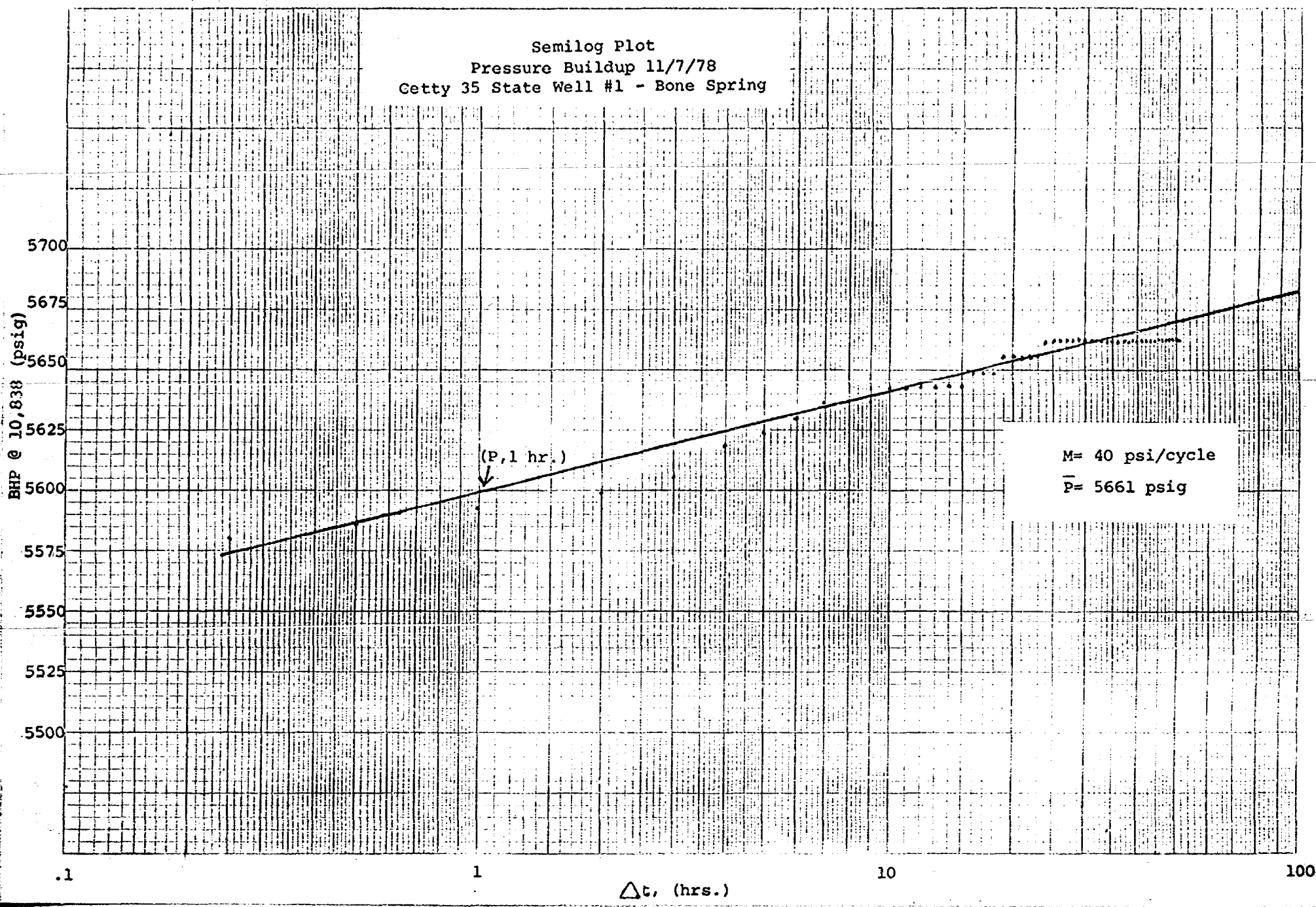
$\bar{P}$= 5661 psig

.1 1 10 100

Δt, (hrs.)

SEMI-LOGARITHMIC 3 CYCLES X [illegible]
KEUFFEL & ESSER CO. [illegible]

Semilog Plot
Pressure Buildup 11/7/78
Getty 35 State Well #1 - Bone Spring



CALCULATION OF Kh (md-ft.) and K (md.)

$$Kh = 162.6 \frac{q\ u\ B}{m} \quad ; \quad K = \frac{Kh}{h}$$

h = 22 ft.
q = 300 B/D

μ = .2cp
B = 2.1
m = 40 psi cycle

$$Kh = 162.6 \frac{(300)(.2)(2.1)}{40} = 512.19 \text{ md-ft.}$$

For h = 22 ft.

$$K = \frac{512.19 \text{ md-ft.}}{22 \text{ ft.}} = 23.28 \text{ md.}$$

SKIN EFFECT

$$s = 1.151 \left[\frac{P\ 1\ hr.-Pwf}{m} - \log \frac{K}{\phi u c r w^2} + 3.23\right]$$

$$s = 1.151 \left[\frac{5600-5524}{40} - \log \frac{23.28(144)}{(.10)(.2)(.000016)\ 22.56} + 3.23\right]$$

s = 1.151 [1.90 - 8.67 + 3.23]

s = 1.151 (-3.54)

s = -4.07

GETTY 35 STATE #1 (BONE SPRING)

I. BHP Bomb Test (11/10/78-11/17/78)

1. 96 hour drawdown
2. 50 hour buildup

II. Best data obtained

1. Pressure depletion = 5824-5661 for production = 1535 STBO

III. Material Balance (above bubble point)

$$N = \frac{Np}{Ce \triangle P} \quad \frac{Bo}{Boi}$$

Np = 1535 STBO (test production)
$\triangle P$ = 163 psi (P = 5824-5661)

$$\frac{Bo}{Boi} = 1 + Co \triangle P = 1 + 10 \times 10^{-6}(163) = 1.00163$$

$$Ce = \frac{1}{So}(SoCo+SwCw+Cf) = \frac{1}{.7}(.7 \times 10 \times .3x3 + 4) \times 10^{-6} = 16 \times 10^{-6}$$

$$N = \frac{(1535)(1.00163)}{(16x10^{-6})(163)} = 590{,}000 \text{ STBO}$$ Original Oil in Place

IV. Approximate Reserves

% Rec. above bubble point = 5% assumed
% Rec. below bubble point = 20% assumed (artificial lift)

Reserves = (0.25)(590,000) = 148,000 STBO

VI. Reservoir Size

Original Oil in Place = OOIP = $\frac{7758\ (Ah)\ \emptyset\ (so)}{Bo}$

$$Ah = \frac{Bo(OOIP)}{7758\ \emptyset\ (So)}$$

$$Ah = \frac{2.1(590{,}000)}{7758(.10)(.7)}$$

Ah = 2281 ac-ft.

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
Applicant's EXHIBIT NO. 8
CASE NO. 6467
Submitted by
Hearing Date 4/23/80

For h = 22 ft.

$$A = \frac{2281 \text{ ac-ft.}}{22 \text{ ft.}}$$

A = 103.71 acres

For h = 11 ft.

$$A = \frac{2281 \text{ ac-ft.}}{11 \text{ ft.}}$$

A = 207.36 acres

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
23 April 1980

EXAMINER HEARING

IN THE MATTER OF:

In the matter of Case 6467 being reopened pursuant to the provisions of Order No. R-5958 which order created th Grama Ridge-Bone Spring Pool in Lea County with temporary special rules therefor providing for 160-acre spacing.

CASE 6467

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the OIl Conservation Division:	Ernest L. Padilla, Esq. Legal Counsel to the Division State Land Office Bldg. Santa Fe, New Mexico 87501
For Getty Oil:	William F. Carr, Esq. CAMPBELL & BLACK P. A. Jefferson Place Santa Fe, New Mexico 87501

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

I N D E X

E X H I B I T S

MR. STAMETS: We'll call next Case 6467.

MR. PADILLA: In the matter of Case 6467 being reopened pursuant to the provisions of Order No. R-5958, which order created the Grama Ridge-Bone Spring Pool in Lea County with temporary special rules therefor providing for 160-acre spacing.

MR. CARR: May it please the Examiner, I am William F. Carr, Campbell and Black, P. A., SantaFe, appearing on behalf of the applicant -- or Getty Oil Company, and I have two witnesses who need to be sworn.

(Witnesses sworn.)

PETER J. BOTES

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

Q Will you state your name and place of residence?

A Peter J. Botes, Hobbs, New Mexico. That is B-O-T-E-S.

Q Mr. Botes, by whom are you employed and in what capacity?

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

A. Getty Oil Company, Petroleum Engineer.

Q. Have you previously testified before this Commission, had your credentials accepted and made a matter of record?

A. No, sir.

Q. Would you briefly summarize your educational background and your work experience for Mr. Stamets?

A. I have a BS degree in petroleum engineering from Mississippi State University. I've been employed with Getty Oil Company approximately four years. The first two years I was involved in drilling and production operations in Illinois and since November of 1978 I've been working in Hobbs in drilling and production operations.

Q. Are you familiar with the application in this case and the general area involved in this matter?

A. Yes, sir, I am.

MR. CARR: Are the witness' qualifications acceptable?

MR. STAMETS: Yes, they are.

Q. Mr. Botes, will you briefly state what Getty is seeking with this at this hearing?

A. We intend to present evidence to show why the Grama Ridge-Bone Spring Pool should not be developed on 40-acre spacing units, but developed on 160-acre spacing, and to get permanent pool rules providing for 160-acre spacing.

Q Could you briefly summarize the events which have led up to this hearing today?

A The Getty 35 State No. 1 was drilled to a depth of 13,355 feet in October of 1978.

November of 1978 the Bone Spring was perforated from 10,810 to 10,828. It was initially tested for 600 barrels of oil per day, 1153 Mcf per day, and 799 barrels of water per day.

The Bone Spring was shutin on November 15th, 1978, and a buildup test was run. The well then remained shutin waiting for a pipeline connection.

In January of 1979 the Morrow zone was completed and both of these zones have been commercially productive.

In April of '79 Getty appeared before the Oil Conservation Division to request permission to dually complete Getty 35 State No. 1 in the Bone Spring and the Morrow zone. Also at the hearing Getty requested special rules for the Bone Spring Pool with provision requesting development for 160-acre spacing. As a result, the Commission issued Order No. R-5958, which provided special rules and regulations for a 1-year period. This allowed Getty the opportunity to collect necessary data to establish that the reservoir can effectively and economically drain 160-acre spacing.

Also the order stated that in April, 1980, the case would be reopened before an Examiner Hearing and at that time Getty would be prepared to show that the Bone Spring should not be developed on 40-acre spacing.

Q. Have you prepared certain exhibits for introduction in this case?

A. Yes.

Q. Will you please refer to what has been marked Applicant's Exhibit Number One and review this exhibit for the Examiner?

A. Yes. This is a plot -- plat of the Grama Ridge East Field, showing the subject well in yellow, Getty 35 State No. 1. The well is located in Unit K, 2310 feet from the south line and 1650 feet from the east line of Section 35, Township 21 South, Range 34 East, Lea County, New Mexico.

The Bone Spring producing interval in the 35 State No. 1 has not been found to be productive in any of the offset wells on this plat.

Q. Will you refer to what has been marked Exhibit Number Two?

A. This is a diagrammatic sketch of the well as it was initially completed and there have been no changes in this diagram. Please note that the Bone Spring perforations are from 10,810 to 10,828.

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

Q And this exhibit was offered in the original case?

A Yes, it was.

Q Mr. Botes, will you now refer to Exhibits Three and Four and explain the information contained thereon?

A Exhibit Number Three is a tabulation of daily well tests from Getty 35 State No. 1 of the Bone Spring. It shows choke size, gas, oil, water, and tubing pressure.

Exhibit Four is a graphical representation of that data and it shows the rates and decline experienced in the well.

The reservoir is in its advanced stages of depletion, and as you'll note, in January of 1980, the production has fallen off and we're at the point where artificial lift will be needed to recover additional reserves.

Q Without artificial lift in this well is that the end of its economic life?

A After --

Q Or in this zone?

A Yes.

Q Will you refer to Exhibit Number Five?

A Yes. This is a monthly tabulation of oil, water, and gas for the well during its life, and the cumulative totals are 122,372 barrels of oil, 59,440 barrels of water, and 188,710 Mcf of gas.

Q. And these figures are as of April 1, 1980?

A. Yes, they are.

Q. Is there another witness who will testify as to pressure buildup and reservoir characteristics?

A. Yes, there is.

Q. Do you have anything further to add to your testimony?

A. No, sir.

Q. Were Exhibits One through Five prepared by you or have you reviewed them and can testify to their accuracy?

A. Yes, I can.

MR. CARR: At this time, Mr. Examiner, we would offer Getty Exhibits One through Five.

MR. STAMETS: These exhibits will be admitted.

MR. CARR: I have nothing further on direct of this witness.

MR. STAMETS: The witness may be excused at this time. It's possible he might be recalled.

MR. CARR: And I would call Mr. Herman Terry.

HERMAN W. TERRY

being called as a witness and having been duly sworn upon his oath, testifies as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

Q. Will you state your full name for the record?

A. My name is Herman W. Terry.

Q. Where do you reside?

A. I reside in Hobbs, New Mexico.

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

A. I'm employed by Getty Oil Company as the Area Engineer of the Hobbs Area.

Q. Have you previously testified before this Commission, had your credentials accepted and made a matter of record?

A. Yes, sir, I have.

Q. Are you familiar with the application and the area which is involved in this case?

A. Yes, I am.

MR. CARR: Are the witness' qualifications acceptable?

MR. STAMETS: They are.

Q. Mr. Terry, would you refer to what has been marked for identification as Getty Exhibit Number Six and review this for Mr Stamets?

A. Yes, sir. Exhibit Number Six is a bottom hole pressure report from Garrald Services, Incorporated, of Hobbs, New Mexico, of our buildup test which was performed in November of '78. It indicates that tandem bombs were run and set at 10,838 on November 10th, 1978. The well was shut-in. The static bottom hole pressure at that time was indicated to be 5824.

The well was opened up, flowed on various choke sizes for a total of 96 hours, and the well was then shutin on November 15th for a 50-hour buildup test. The flowing bottom hole pressure at the time it was shutin was indicated to be 5524.

Final buildup at the end of 50 hours was indicated to be 5661.

A total of 1535 barrels of stock tank oil was produced during this 96-hour flow period. Total gas produced was 6364 Mcf gas.

There was a difference noted in the original i-itial static bottom hole pressure and the final static bottom hole pressure of 163 pounds.

The last page of this exhibit is the static pressure gradients made by Garrald Wireline Services

when they were coming out of the hole.

Q Will you not refer to what has been marked Exhibit Number Seven and review this for Mr. Stamets?

A Exhibit Number Seven is a simulog plot of the pressure buildup data from the Gerrald Wireline Survey. This data has been plotted. A straight line has been drawn. M has been determined to be 40 psi per cycle, and as you can see, the average reservoir pressure at the end of the build-up was 5661 pounds.

Page two of the exhibit is calculations of transmissibility, or kh. Kh was calculated to be 512.19 millidarcy feet for an h of 22 feet, which was the net pay present in this well. K was determined to be 23.28 millidarcies.

Furthermore, the skin effect was calculated. S was found to be a minus 4.07, which indicates stimulation as a result of our well being acidized prior to being put on production.

Q What kind of porosity did you encounter in this well?

A A porosity of 10 percent was used for the in the calculation for the skin effect, and this porosity was taken from our neutron density log. This log was presented in the previous case.

Q Mr. Terry, will you refer to what has

been marked Exhibit Number Eight, and summarize the data contained thereon?

A. Yes, sir. Exhibit Number Eight is some additional calculations that we made on this well. We took the data from the 96-hour drawdown and the 50-hour buildup and, as pointed out previously, we observed a pressure depletion of 163 pounds. The static bottom hole pressure reduced from 5824 to 5661 with a production of 1535 stock tank barrels of oil.

Using this data we made material balance calculation for the reservoir and it was determined from these calculations that the original oil in place was 590,000 stock tank barrels of oil.

Assuming a 25 percent recovery factor, it was estimated that the recoverable reserves from this well would be 148,000 stock tank barrels of oil. This compares very favorably with our cumulative production as of April 1st, 1980; as of that date we'd recovered approximately 84 percent of the recoverable reserves as estimated by this calculation.

We further calculated the reservoir size. AH was calculated to be 2281 acre feet. Assuming a 22 feet of net pay which was present in this well, it would indicate that the reservoir is 103 -- slightly over 103 acres in areal extent.

Assuming an average reservoir thickness of only 11 feet, it would indicate that the areal extent of the reservoir is only 207 acres.

Q. Do you have a recommendation to make to the Examiner concerning the rules which will result from this hearing?

A. Yes, sir. Based upon the permeability and the porosity data which we have and the well's performance, we would recommend that the permanent rules be established providing for 160-acre spacing for the Grama Ridge-Bone Spring Pool.

Q. Can you testify as to the accuracy of Applicant's Exhibits Six through Eight?

A. Yes, sir, I can.

MR. CARR: At this time, Mr. Examiner, we would offer Getty Exhibits Six through Eight.

MR. STAMETS: These exhibits will be admitted.

MR. CARR: I have nothing further on direct.

CROSS EXAMINATION

BY MR. STAMETS:

Q. Mr. Terry, does the review of all of these exhibits indicate that -- to you that this pool has

been totally developed by the one well?

A. Yes, sir, it would appear that the one well has totally developed the pool. As shown on Exhibit One, none of the offset wells found this particular interval productive in any of the offset wells, and based upon our reservoir size calculations, it would appear that this is the only well presently in the pool or that will ever be in the pool.

Q. That, however, would not preclude your -- you from discovering other Bone Spring intervals that might be productive in the area.

A. No, sir, it would not.

Q. What part of the Bone Spring is this well producing from?

A. It's towards the lower part of the gross interval, I believe.

Q. Is it out of the third lime section or third sand section?

A. I'm not completely sure just exactly which section it is.

Q. It is some concern to me that we create 160-acre pool here for the entire Bone Spring section and we're only dealing with a very small interval. I would like to see a recommendation from Getty, both to the Examiner and to our District Office, for an amendment of the vertical

limits of this pool to include the basic interval that we're looking at here.

A. Okay. All right.

MR. STAMETS: Any other questions of the witness? He may be excused.

Anything further in this case?

MR. CARR: Nothing further.

MR. STAMETS: The case will be taken under advisement.

(Hearing concluded.)

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

REPORTER'S CERTIFICATE

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY THAT the foregoing 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.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. ____, heard by me on _____ 19__.

_____, Examiner
Oil Conservation Division

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

Getty

Getty Oil Company

P.O. Box 730, Hobbs, NM 88240

Central Exploration and Production Division

April 29, 1980

Referred to Hobbs OCD 5/2/80

Mr. Richard L. Stamets
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: In the matter of Case #6467
of Getty Oil Company regarding
permanent pool rules for the
Grama Ridge - Bone Spring Pool.

Dear Sir:

Getty Oil Company would like to recommend that the vertical limits of the Grama Ridge-Bone Spring Pool be the interval from 10,472' to 10,900'. These depths are taken from the Compensated Neutron-Formation Density Log of the Getty 35 State Well No. 1. This interval is the lower carbonate section of the Bone Spring formation in the Getty 35 State Well No. 1.

If there are further questions please notify the Hobbs Area Office.

Yours very truly,
Getty Oil Company

H. W. Terry
Area Engineer

PJB/ed

cc: Mr. J. E. Eakin-Midland

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

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

May 14, 1980

Mr. William F. Carr
Campbell and Black
Attorneys at Law
Post Office Box 2208
Santa Fe, New Mexico

Re: CASE NO. 6467
ORDER NO. ~~R-5958-A~~

Applicant:

OCD (Getty Oil Company)

Dear Sir:

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

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD x
Artesia OCD x
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. 6467
Order No. R-5958-A

IN THE MATTER OF CASE 6467 BEING REOPENED PURSUANT TO THE PROVISIONS OF ORDER NO. R-5958, WHICH ORDER ESTABLISHED SPECIAL RULES AND REGULATIONS FOR THE GRAMA RIDGE-BONE SPRING POOL, LEA COUNTY, NEW MEXICO, INCLUDING A PROVISION FOR 160-ACRE PRORATION UNITS.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on April 23, 1980, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 13th day of May, 1980, 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 by Order No. R-5958, dated March 30, 1979, temporary special rules and regulations were promulgated for the Grama Ridge-Bone Spring Pool, Lea County, New Mexico, establishing temporary 160-acre spacing units.

(3) That pursuant to the provisions of Order No. R-5958, this case was reopened to allow the operators in the subject pool to appear and show cause why the Grama Ridge-Bone Spring Pool should not be developed on 40-acre spacing units.

(4) That the evidence establishes that one well in the Grama Ridge-Bone Spring Pool can efficiently and economically drain and develop 160 acres.

(5) That the Special Rules and Regulations promulgated by Order No. R-5958 have afforded and will afford to the owner of each property in the pool the opportunity to produce his just and equitable share of the oil in the pool.

(6) That in order to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, the Special Rules and Regulations promulgated by Order No. R-5958 should be continued in full force and effect until further order of the Division.

IT IS THEREFORE ORDERED:

(1) That the Special Rules and Regulations governing the Grama Ridge-Bone Spring Pool, Lea County, New Mexico, promulgated by Order No. R-5958, are hereby continued in full force and effect until further order of the Division.

(2) 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.

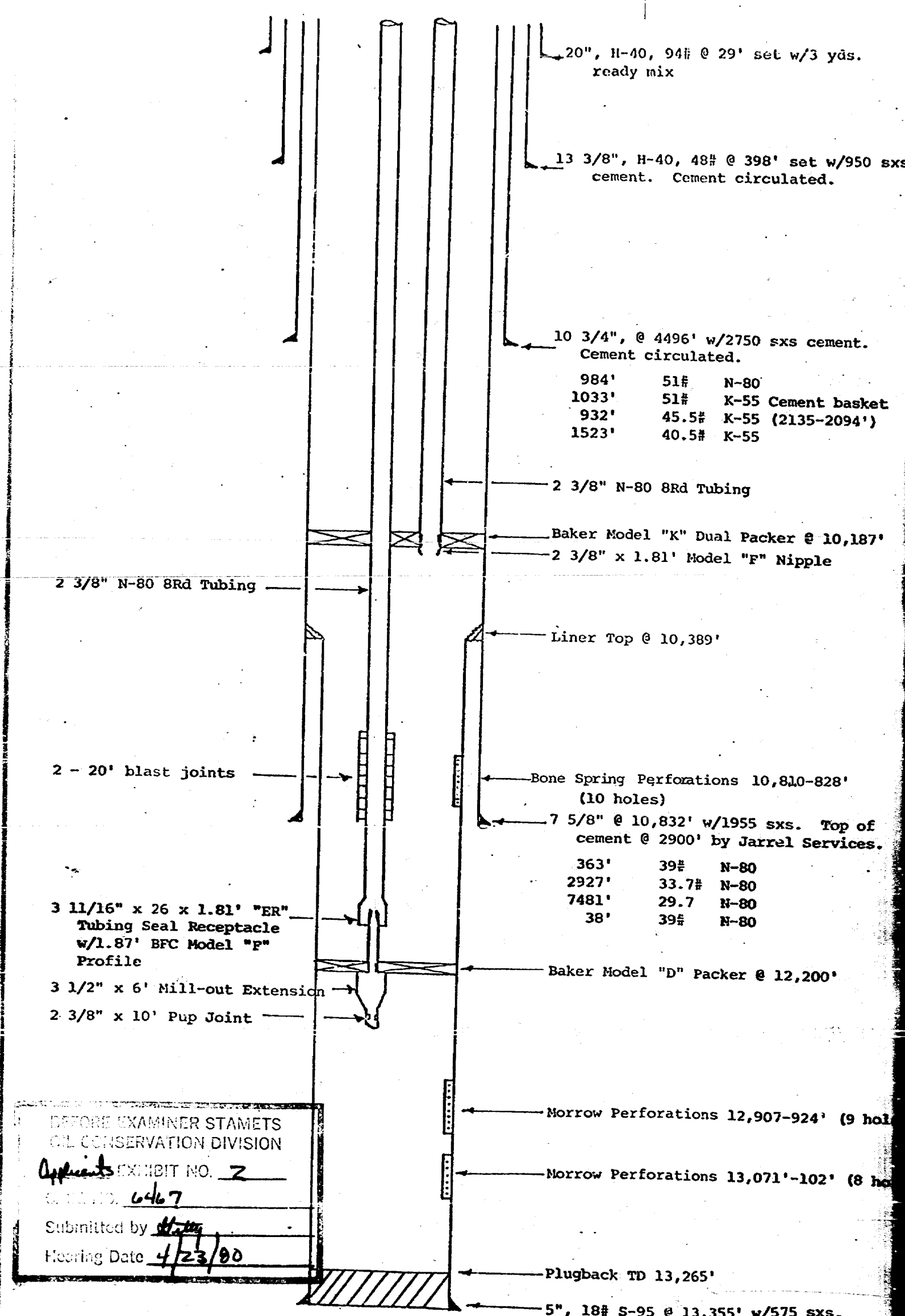
STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY
Director

S E A L

fd/

GETTY "35" STATE WELL NO. 1
MORROW-BONE SPRING DUAL COMPLETION



BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
Applicants EXHIBIT NO. 2
CASE NO. 6467
Submitted by
Hearing Date 4/23/90

DAILY WELL TESTS

GETTY 35 STATE WELL NO. 1 - BONE SPRING

DATE	CHOKE	GAS, MCFPD	OIL, BPD	WATER, BPD	TBG. PRESSURE
1/1/79	-	-	-	-	-
1/8/79	-	-	-	-	-
1/15/79	-	-	-	-	-
1/22/79	15/64	742	315	450	1550
1/29/79	16/64	642	330	545	1450
2/5/79	16/64	638	368	512	1500
2/12/79	16/64	691	395	544	1500
2/19/79	16/64	586	352	507	1500
2/26/79	16/64	621	333	508	1500
3/5/79	16/64	655	394	450	1475
3/12/79	14/64	604	403	293	1425
3/19/79	11/64	336	218	160	1350
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4/2/79	13/64	579	332	237	1375
4/9/79	13/64	573	360	225	1350
4/16/79	13/64	616	332	215	1300
4/23/79	15/64	690	414	256	1275
4/30/79	14/64	325	360	229	1250
5/7/79	14/64	526	361	248	1225
5/14/79	14/64	558	404	232	1200
5/21/79	14/64	556	322	219	1200
5/28/79	14/64	553	354	212	1125
6/4/79	14/64	488	370	216	1150
6/11/79	14/64	505	300	204	1150
6/18/79	14/64	548	339	202	1100
6/25/79	14/64	507	294	193	1175
7/2/79	14/64	590	343	184	1075
7/9/79	14/64	547	357	192	1050
7/16/79	14/64	497	315	196	1050
7/23/79	14/64	488	339	188	1025
7/30/79	14/64	488	360	188	1015
8/6/79	14/64	516	333	173	1000
8/13/79	14/64	450	332	171	1000
8/20/79	14/64	458	328	170	975
8/27/79	14/64	454	319	179	925
9/3/79	14/64	488	350	172	950
9/10/79	14/64	418	278	166	950
9/17/79	14/64	478	324	186	900
9/24/79	14/64	508	327	181	925
10/1/79	14/64	488	325	180	900
10/8/79	14/64	483	325	184	900
10/15/79	14/64	488	323	188	850
10/22/79	14/64	449	303	173	850

DATE	CHOKE	GAS, MCFPD	OIL, BPD	WATER, BPD	TBG. PRESSURE
10/29/79	14/64	413	329	177	850
11/5/79	14/64	435	304	166	825
11/12/79	14/64	344	281	153	800
11/19/79	14/64	405	279	162	800
11/26/79	14/64	390	233	153	800
12/3/79	14/64	385	262	140	800
12/10/79	14/64	369	272	184	750
12/17/79	14/64	361	247	137	725
12/24/79	14/64	340	234	133	700
12/31/79	14/64	334	232	125	675
1/7/80	14/64	334	186	108	650
1/14/80	14/64	321	198	105	650
1/21/80	14/64	334	166	93	625
1/28/80	14/64	275	150	78	550
2/4/80	28/64	163	65	14	520
2/11/80	32/64	163	66	16	510
2/18/80	32/64	81	44	0	510
2/25/80	32/64	48	35	0	490
3/3/80	32/64	66	39	1	510
3/10/80	32/64	46	36	0	480
3/17/80	32/64	96	36	0	490
3/24/80	32/64	110	33	0	490
3/31/80	32/64	94	33	0	450
4/7/80	32/64	113	22	0	470
4/14/80	32/64	47	25	0	650

GETTY "35" STATE WELL NO. 1 - BONE SPRING

DATE		Oil	Water	Gas
1979	Jan	8598	0	14217
	Feb	9081	0	14816
	Mar	9972	7750	16399
	Apr	10394	6840	28362
	May	10813	0	16266
	Jun	10040	6840	14487
	Jul	10260	0	14226
	Aug	10220	0	13151
	Sep	9597	6840	12217
	Oct	9407	7068	12145
	Nov	8451	6840	10882
	Dec	7521	7068	9933
1980	Jan	5549	2931	7626
	Feb	1407	195	2207
	Mar	1062	7068	1776
TOTAL		122,372	59,440	188,710

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
Applicant's EXHIBIT NO. 5
CASE NO. 6467
Submitted by Getty
Hearing Date 4/23/80

JARREL SERVICES, INC.

POST OFFICE BOX 1654 PHONE 505 393-5396
HOBBS, NEW MEXICO 88240

COMPANY: Getty Oil Company

WELL: Getty 35 State, No. 1 FIELD: Undesignated Wolfcamp

CHRONOLOGICAL PRESSURE DATA

DATE	STATUS OF WELL	TIME	ELASPED TIME HRS.	ELASPED TIME MIN.	SURFACE PRESSURE TBG	SURFACE PRESSURE CSG	BHP @ (-7162 .) 10838'PSIG
1978							
11/10	Shut in 5 hours. Run Tandem Bombs & Set						
	Bombs off @ 10838'	8:30 PM	5	00		PKR	5818
	Shut in	9:30	1	00	–	–	5824
	"	10:30	2	00	–	–	5824
	"	11:30	3	00	–	–	5824
11/11	"	12:30 AM	4	00	–	–	5824
	"	1:30	5	00	–	–	5824
	"	2:30	6	00	–	–	5824
	"	3:30	7	00	–	–	5824
	"	4:30	8	00	–	–	5824
	"	5:30	9	00	–	–	5824
	"	6:30	10	00	–	–	5824
	"	7:30	11	00	–	–	5831
	"	8:30	12	00	–	–	5831
	Opened on 19/64" Choke	9:00 AM	12	30	–	–	5831
	Flowing	10:00	1	00	–	–	5762
	"	11:00	2	00	–	–	5743
	"	12:00 N	3	00	–	–	5762
	Shut in to 17/64" Choke	12:30 PM	3	30	–	–	5774
	Shut in to 14/64" Choke	1:00	0	30	–	–	5781
	Shut in to 12/64" Choke	1:30	0	30	–	–	5787
	Opened to 20/64" Choke	2:00	0	30	–	–	5799
	Shut in to 18/64" Choke	3:00	1	00	–	–	5743
	Opened to 19/64" Choke	4:30	1	30	–	–	5755
	Opened to 20/64" Choke	5:00	0	30	–	–	5724
	Flowing	6:00	1	00	–	–	5718
	"	7:00	2	00	–	–	5718
	"	8:00	3	00	–	–	5724
	"	9:00	4	00	–	–	5724
	"	10:00	5	00	–	–	5718
	"	11:00	6	00	–	–	5712
	"	12:00 MN	7	00	–	–	5712
11/12	"	1:00 AM	8	00	–	–	5712
	"	2:00	9	00	–	–	5699
	"	3:00	10	00	–	–	5699
	"	4:00	11	00	–	–	5699
	"	5:00	12	00	–	–	5699
	"	6:00	13	00	–	–	5699
	"	7:00	14	00	–	–	5693
	"	8:00	15	00	–	–	5687
	"	9:00	16	00	–	–	5687
	"	10:00	17	00	–	–	5687

WELL: Getty 35 State, No. 1
PAGE: 2

DATE	STATUS OF WELL	TIME	ELASPED TIME HRS.	ELASPED TIME MIN.	SURFACE PRESSURE TBG	SURFACE PRESSURE CSG	BHP @ (-7162) 10838'PSIG
	Flowing	11:00	18	00	-	-	5680
	"	12:00 N	19	00	-	-	5680
	"	1:00 PM	20	00	-	-	5680
	"	2:00	21	00	-	-	5674
	"	3:00	22	00	-	-	5674
	"	4:00	23	00	-	-	5674
	"	5:00	24	00	-	-	5668
	"	6:00	25	00	-	-	5668
	"	7:00	26	00	-	-	5661
	"	8:00	27	00	-	-	5655
	"	9:00	28	00	-	-	5655
	"	10:00	29	00	-	-	5655
	"	11:00	30	00	-	-	5655
	"	12:00 MN	31	00	-	-	5655
11/13	"	1:00 AM	32	00	-	-	5655
	"	2:00	33	00	-	-	5655
	"	3:00	34	00	-	-	5649
	"	4:00	35	00	-	-	5649
	"	5:00	36	00	-	-	5643
	"	6:00	37	00	-	-	5643
	"	7:00	38	00	-	-	5636
	Opened to 24/64" Choke	8:00	39	00	-	-	5636
	Flowing	9:00	1	00	-	-	5580
	"	10:00	2	00	-	-	5561
	"	11:00	3	00	-	-	5542
	"	12:00 N	4	00	-	-	5542
	Shut in to 20/64" Choke	12:30 PM	4	30	-	-	5536
	Flowing	1:00	0	30	-	-	5561
	"	2:00	1	30	-	-	5567
	"	3:00	2	30	-	-	5574
	"	4:00	3	30	-	-	5567
	"	5:00	4	30	-	-	5567
	"	6:00	5	30	-	-	5567
	"	7:00	6	30	-	-	5567
	"	8:00	7	30	-	-	5561
	"	9:00	8	30	-	-	5561
	"	10:00	9	30	-	-	5561
	"	11:00	10	30	-	-	5561
	"	12:00 MN	11	30	-	-	5561
11/14	"	1:00 AM	12	30	-	-	5555
	"	2:00	13	30	-	-	5555
	"	3:00	14	30	-	-	5555
	"	4:00	15	30	-	-	5555
	"	5:00	16	30	-	-	5555
	"	6:00	17	30	-	-	5555
	"	7:00	18	30	-	-	5542
	"	8:00	19	30	-	-	5542
	"	9:00	20	30	-	-	5542
	"	10:00	21	30	-	-	5542
	"	11:00	22	30	-	-	5542
	"	12:00 N	23	30	-	-	5542
	"	1:00 PM	24	30	-	-	5536
	"	2:00	25	30	-	-	5536

WELL: Getty 35 State, No. 1
PAGE: 3

DATE	STATUS OF WELL	TIME	ELASPED TIME HRS.	MIN.	SURFACE PRESSURE TBG	CSG	BHP @ (-7162) 10838' PSIG
	Flowing	3:00	26	30	-	-	5536
	"	4:00	27	30	-	-	5530
	"	5:00	28	30	-	-	5530
	"	6:00	29	30	-	-	5530
	"	7:00	30	30	-	-	5530
	"	8:00	31	30	-	-	5530
	"	9:00	32	30	-	-	5530
	"	10:00	33	30	-	-	5524
	"	11:00	34	30	-	-	5524
	"	12:00 MN	35	30	-	-	5542
11/15	"	1:00 AM	36	30	-	-	5542
	"	2:00	37	30	-	-	5542
	"	3:00	38	30	-	-	5536
	"	4:00	39	30	-	-	5536
	"	5:00	40	30	-	-	5530
	"	6:00	41	30	-	-	5524
	"	7:00	42	30	-	-	5524
	"	8:00	43	30	-	-	5524
	Shut in	9:00	44	30	1710 G	*	5524
	"	9:15	0	15	-	-	5580
	"	9:30	0	30	-	-	5586
	"	10:00	1	00	-	-	5592
	"	11:00	2	00	-	-	5599
	"	12:00 N	3	00	-	-	5605
	"	1:00 PM	4	00	-	-	5618
	"	2:00	5	00	-	-	5624
	"	3:00	6	00	-	-	5630
	"	4:00	7	00	-	-	5636
	"	5:00	8	00	-	-	5636
	"	6:00	9	00	-	-	5636
	"	7:00	10	00	-	-	5643
	"	8:00	11	00	-	-	5643
	"	9:00	12	00	-	-	5643
	"	10:00	13	00	-	-	5643
	"	11:00	14	00	-	-	5643
	"	12:00 MN	15	00	-	-	5643
11/16	"	1:00 AM	16	00	-	-	5649
	"	2:00	17	00	-	-	5649
	"	3:00	18	00	-	-	5649
	"	4:00	19	00	-	-	5655
	"	5:00	20	00	-	-	5655
	"	6:00	21	00	-	-	5655
	"	7:00	22	00	-	-	5655
	"	8:00	23	00	-	-	5655
	"	9:00	24	00	-	-	5661
	"	10:00	25	00	-	-	5661
	"	11:00	26	00	-	-	5661
	"	12:00 N	27	00	-	-	5661
	"	1:00 PM	28	00	-	-	5661
	"	2:00	29	00	-	-	5661
	"	3:00	30	00	-	-	5661
	"	4:00	31	00	-	-	5661

WELL: Getty 35 State, No. 1
PAGE: 4

DATE	STATUS OF WELL	TIME	ELASPED TIME HRS.	MIN.	SURFACE PRESSURE TBG	CSG	BHP @ (-7162) 10838'PSIG
	Shut in	5:00	32	00	-	-	5661
	"	6:00	33	00	-	-	5661
	"	7:00	34	00	-	-	5661
	"	8:00	35	00	-	-	5661
	"	9:00	36	00	-	-	5661
	"	10:00	37	00	-	-	5661
	"	11:00	38	00	-	-	5661
	"	12:00 MN	39	00	-	-	5661
11/17	"	1:00	40	00	-	-	5661
	"	2:00	41	00	-	-	5661
	"	3:00	42	00	-	-	5661
	"	4:00	43	00	-	-	5661
	"	5:00	44	00	-	-	5661
	"	6:00	45	00	-	-	5661
	"	7:00	46	00	-	-	5661
	"	8:00	47	00	-	-	5661
	"	9:00	48	00	-	-	5661
	"	10:00	49	00	-	-	5661
	"	11:00	50	00	-	-	5661
	Fished Bombs & run Static Gradient	11:30	50	30	2107	-	5661

* Total Oil Produced during 96.0 hrs Test 1535 BBLS
Total Gas Produced during 96.0 hrs Test 6364 MCF
Average Rate of Gas Per Day 1591 MCF/D
Final Hour Flow of Gas 822 MCF/D

GOR = 4146 CuFt Gas/BBL Oil

JARREL SERVICES, INC.

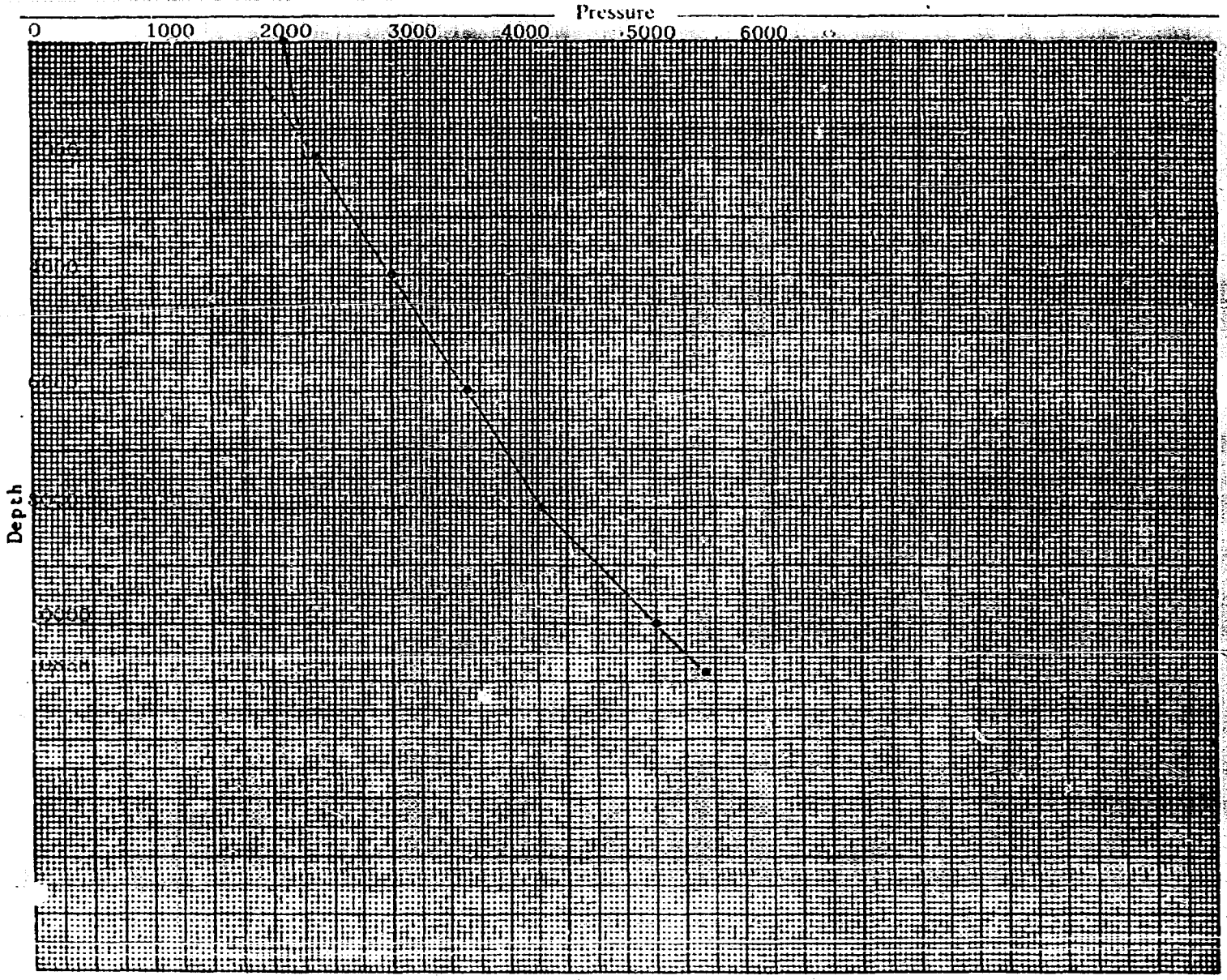
POST OFFICE BOX 1654 PHONE 505 393-5396

HOBBS, NEW MEXICO 88240

OPERATOR Getty Oil Company
FIELD Undesignated
FORMATION Wolfcamp
LEASE Getty 35 State WELL #1
COUNTY Lea STATE New Mexico
DATE November 17, 1978 TIME 11:30 AM
Status Shut in
Test Depth 10838'
Time S. I. 50.5 hrs Last test date 11/11/78
Tub Pres. 2107 BHP last test 5831
Cas. Pres. PKR BHP change 170# Loss
Elev. 3676'GL Fluid top 1739'
Datum (-7162) Water top 8000'
Temp. @ 172°F Run by JSI #13
Cal. No. A 18478 N Chart No. 1

BOTTOM HOLE PRESSURE RECORD

Depth	Pressure	Gradient
0	2107	--
2000	2365	.129
4000	3002	.319
6000	3642	.320
8000	4282	.320
10000	5254	.486
10838 (-7162)	5661	.486



Semilog Plot
Pressure Buildup 11/7/78
Getty 35 State Well #1 - Bone Spring

BHP @ 10,838 (psig)

5700
5675
5650
5625
5600
5575
5550
5525
5500

(P,1 hr.)

M= 40 psi/cycle
$\bar{P}$= 5661 psig

.1
1
10
100

Δt, (hrs.)

CALCULATION OF Kh (md-ft.) and K (md.)

$$Kh = 162.6 \frac{q\ u\ B}{m} \quad ; \quad K = \frac{Kh}{h}$$

h = 22 ft.
q = 300 B/D
μ = .2cp
B = 2.1
m = 40 psi cycle

$$Kh = 162.6 \frac{(300)(.2)(2.1)}{40} = 512.19 \text{ md-ft.}$$

For h = 22 ft.

$$K = \frac{512.19 \text{ md-ft.}}{22 \text{ ft.}} = 23.28 \text{ md.}$$

SKIN EFFECT

$$s = 1.151 \left[\frac{P\ 1\ hr.-Pwf}{m} - \log \frac{K}{\phi u c r_w^2} + 3.23\right]$$

$$s = 1.151 \left[\frac{5600-5524}{40} - \log \frac{23.28(144)}{(.10)(.2)(.000016)\ 22.56} + 3.23\right]$$

$$s = 1.151\ [1.90 - 8.67 + 3.23]$$

$$s = 1.151\ (-3.54)$$

$$s = -4.07$$

GETTY 35 STATE #1 (BONE SPRING)

I. BHP Bomb Test (11/10/78-11/17/78)

1. 96 hour drawdown
2. 50 hour buildup

II. Best data obtained

1. Pressure depletion = 5824-5661 for production = 1535 STBO

III. Material Balance (above bubble point)

$$N = \frac{Np}{Ce\triangle P} \quad \frac{Bo}{Boi}$$

Np = 1535 STBO (test production)
$\triangle P$ = 163 psi (P = 5824-5661)

$$\frac{Bo}{Boi} = 1 + Co\triangle P = 1 + 10 \times 10^{-6}(163) = 1.00163$$

$$Ce = \frac{1}{So}(SoCo+SwCw+Cf) = \frac{1}{.7}(.7 \times 10 \times .3x3 + 4) \times 10^{-6} = 16 \times 10^{-6}$$

$$N = \frac{(1535)(1.00163)}{(16x10^{-6})(163)} = 590{,}000 \text{ STBO}$$ Original Oil in Place

IV. Approximate Reserves

% Rec. above bubble point = 5% assumed
% Rec. below bubble point = 20% assumed (artificial lift)

Reserves = (0.25)(590,000) = 148,000 STBO

VI. Reservoir Size

Original Oil in Place = OOIP = $\frac{7758\ (Ah)\ \emptyset\ (so)}{Bo}$

$$Ah = \frac{Bo(OOIP)}{7758\ \emptyset\ (So)}$$

$$Ah = \frac{2.1(590{,}000)}{7758(.10)(.7)}$$

Ah = 2281 ac-ft.

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
Applicant EXHIBIT NO. 8
CASE NO. 6467
Submitted by Getty
Hearing Date 4/23/80

For h = 22 ft.

$$A = \frac{2281 \text{ ac-ft.}}{22 \text{ ft.}}$$

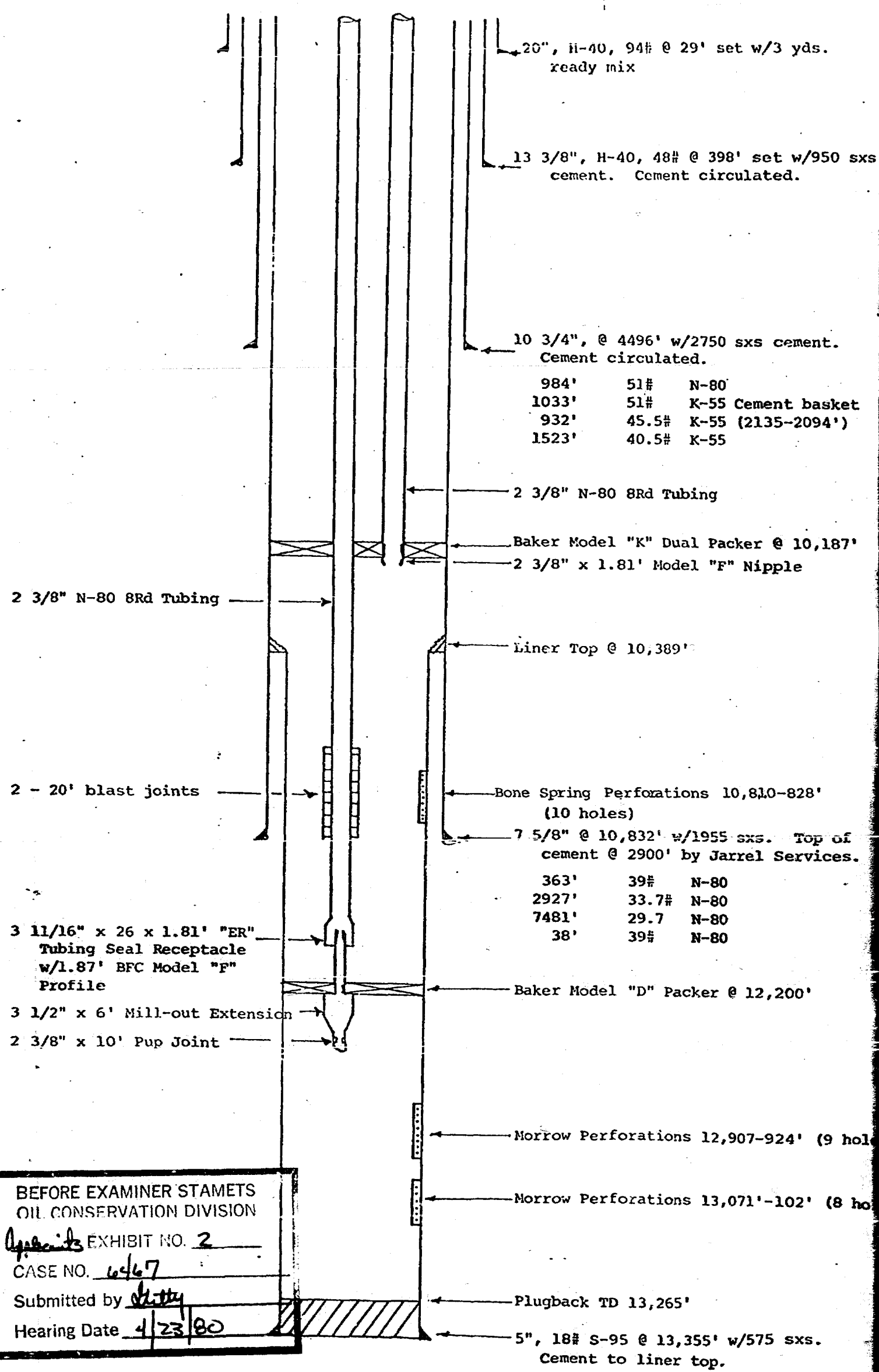
A = 103.71 acres

For h = 11 ft.

$$A = \frac{2281 \text{ ac-ft.}}{11 \text{ ft.}}$$

A = 207.36 acres

GETTY "35" STATE WELL NO. 1
MORROW-BONE SPRING DUAL COMPLETION



BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
Applicants EXHIBIT NO. 2
CASE NO. 6467
Submitted by Getty
Hearing Date 4/23/80

DAILY WELL TESTS

GETTY 35 STATE WELL NO. 1 - BONE SPRING

DATE	CHOKE	GAS, MCFPD	OIL, BPD	WATER, BPD	TBG. PRESSURE
1/1/79	-	-	-	-	-
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5/28/79	14/64	553	354	212	1125
6/4/79	14/64	488	370	216	1150
6/11/79	14/64	505	300	204	1150
6/18/79	14/64	548	339	202	1100
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7/9/79	14/64	547	357	192	1050
7/16/79	14/64	497	315	196	1050
7/23/79	14/64	488	339	188	1025
7/30/79	14/64	488	360	188	1015
8/6/79	14/64	516	333	173	1000
8/13/79	14/64	450	332	171	1000
8/20/79	14/64	458	328	170	975
8/27/79	14/64	454	319	179	925
9/3/79	14/64	488	350	172	950
9/10/79	14/64	418	278	166	950
9/17/79	14/64	478	324	186	900
9/24/79	14/64	508	327	181	925
10/1/79	14/64	488	325	180	900
10/8/79	14/64	483	325	184	900
10/15/79	14/64	488	323	188	850
10/22/79	14/64	449	303	173	850

DATE	CHOKE	GAS, MCFPD	OIL, BPD	WATER, BPD	TBG. PRESSURE
10/29/79	14/64	413	329	177	850
11/5/79	14/64	435	304	166	825
11/12/79	14/64	344	281	153	800
11/19/79	14/64	405	279	162	800
11/26/79	14/64	390	233	153	800
12/3/79	14/64	385	262	140	800
12/10/79	14/64	369	272	184	750
12/17/79	14/64	361	247	137	725
12/24/79	14/64	340	234	133	700
12/31/79	14/64	334	232	125	675
1/7/80	14/64	334	186	108	650
1/14/80	14/64	321	198	105	650
1/21/80	14/64	334	166	93	625
1/28/80	14/64	275	150	78	550
2/4/80	28/64	163	65	14	520
2/11/80	32/64	163	66	16	510
2/18/80	32/64	81	44	0	510
2/25/80	32/64	48	35	0	490
3/3/80	32/64	66	39	1	510
3/10/80	32/64	46	36	0	480
3/17/80	32/64	96	36	0	490
3/24/80	32/64	110	33	0	490
3/31/80	32/64	94	33	0	450
4/7/80	32/64	113	22	0	470
4/14/80	32/64	47	25	0	650

GETTY "35" STATE WELL NO. 1 - BONE SPRING

DATE		Oil	Water	Gas
1979	Jan	8598	0	14217
	Feb	9081	0	14816
	Mar	9972	7750	16399
	Apr	10394	6840	28362
	May	10813	0	16266
	Jun	10040	6840	14487
	Jul	10260	0	14226
	Aug	10220	0	13151
	Sep	9597	6840	12217
	Oct	9407	7068	12145
	Nov	8451	6840	10882
	Dec	7521	7068	9933
1980	Jan	5549	2931	7626
	Feb	1407	195	2207
	Mar	1062	7068	1776
TOTAL		122,372	59,440	188,710

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
Applicant's EXHIBIT NO. 5
CASE NO. 6467
Submitted by Getty
Hearing Date 4/23/80

JARREL SERVICES, INC.

POST OFFICE BOX 1654 PHONE 505 393-5396
HOBBS, NEW MEXICO 88240

COMPANY: Getty Oil Company

WELL: Getty 35 State, No. 1 FIELD: Undesignated Wolfcamp

CHRONOLOGICAL PRESSURE DATA

DATE	STATUS OF WELL	TIME	ELASPED TIME HRS.	MIN.	SURFACE PRESSURE TBG	CSG	BHP @ (-7162) 10838'PSIG
1978							
11/10	Shut in 5 hours. Run Tandem Bombs & Set						
	Bombs off @ 10838'	8:30 PM	5	00		PKR	5818
	Shut in	9:30	1	00	–	–	5824
	"	10:30	2	00	–	–	5824
	"	11:30	3	00	–	–	5824
11/11	"	12:30 AM	4	00	–	–	5824
	"	1:30	5	00	–	–	5824
	"	2:30	6	00	–	–	5824
	"	3:30	7	00	–	–	5824
	"	4:30	8	00	–	–	5824
	"	5:30	9	00	–	–	5824
	"	6:30	10	00	–	–	5824
	"	7:30	11	00	–	–	5831
	"	8:30	12	00	–	–	5831
	Opened on 19/64" Choke	9:00 AM	12	30	–	–	5831
	Flowing	10:00	1	00	–	–	5762
	"	11:00	2	00	–	–	5743
	"	12:00 N	3	00	–	–	5762
	Shut in to 17/64" Choke	12:30 PM	3	30	–	–	5774
	Shut in to 14/64" Choke	1:00	0	30	–	–	5781
	Shut in to 12/64" Choke	1:30	0	30	–	–	5787
	Opened to 20/64" Choke	2:00	0	30	–	–	5799
	Shut in to 18/64" Choke	3:00	1	00	–	–	5743
	Opened to 19/64" Choke	4:30	1	30	–	–	5755
	Opened to 20/64" Choke	5:00	0	30	–	–	5724
	Flowing	6:00	1	00	–	–	5718
	"	7:00	2	00	–	–	5718
	"	8:00	3	00	–	–	5724
	"	9:00	4	00	–	–	5724
	"	10:00	5	00	–	–	5718
	"	11:00	6	00	–	–	5712
	"	12:00 MN	7	00	–	–	5712
11/12	"	1:00 AM	8	00	–	–	5712
	"	2:00	9	00	–	–	5699
	"	3:00	10	00	–	–	5699
	"	4:00	11	00	–	–	5699
	"	5:00	12	00	–	–	5699
	"	6:00	13	00	–	–	5699
	"	7:00	14	00	–	–	5693
	"	8:00	15	00	–	–	5687
	"	9:00	16	00	–	–	5687
	"	10:00	17	00	–	–	5687

WELL: Getty 35 State, No. 1
PAGE: 2

DATE	STATUS OF WELL	TIME	ELASPED TIME HRS.	ELASPED TIME MIN.	SURFACE PRESSURE TBG	SURFACE PRESSURE CSG	BHP @ (-7162) 10838'PSIG
	Flowing	11:00	18	00	-	-	5680
	"	12:00 N	19	00	-	-	5680
	"	1:00 PM	20	00	-	-	5680
	"	2:00	21	00	-	-	5674
	"	3:00	22	00	-	-	5674
	"	4:00	23	00	-	-	5674
	"	5:00	24	00	-	-	5668
	"	6:00	25	00	-	-	5668
	"	7:00	26	00	-	-	5661
	"	8:00	27	00	-	-	5655
	"	9:00	28	00	-	-	5655
	"	10:00	29	00	-	-	5655
	"	11:00	30	00	-	-	5655
	"	12:00 MN	31	00	-	-	5655
11/13	"	1:00 AM	32	00	-	-	5655
	"	2:00	33	00	-	-	5655
	"	3:00	34	00	-	-	5649
	"	4:00	35	00	-	-	5649
	"	5:00	36	00	-	-	5643
	"	6:00	37	00	-	-	5643
	"	7:00	38	00	-	-	5636
	Opened to 24/64" Choke	8:00	39	00	-	-	5636
	Flowing	9:00	1	00	-	-	5580
	"	10:00	2	00	-	-	5561
	"	11:00	3	00	-	-	5542
	"	12:00 N	4	00	-	-	5542
	Shut in to 20/64" Choke	12:30 PM	4	30	-	-	5536
	Flowing	1:00	0	30	-	-	5561
	"	2:00	1	30	-	-	5567
	"	3:00	2	30	-	-	5574
	"	4:00	3	30	-	-	5567
	"	5:00	4	30	-	-	5567
	"	6:00	5	30	-	-	5567
	"	7:00	6	30	-	-	5567
	"	8:00	7	30	-	-	5561
	"	9:00	8	30	-	-	5561
	"	10:00	9	30	-	-	5561
	"	11:00	10	30	-	-	5561
	"	12:00 MN	11	30	-	-	5561
11/14	"	1:00 AM	12	30	-	-	5555
	"	2:00	13	30	-	-	5555
	"	3:00	14	30	-	-	5555
	"	4:00	15	30	-	-	5555
	"	5:00	16	30	-	-	5555
	"	6:00	17	30	-	-	5555
	"	7:00	18	30	-	-	5542
	"	8:00	19	30	-	-	5542
	"	9:00	20	30	-	-	5542
	"	10:00	21	30	-	-	5542
	"	11:00	22	30	-	-	5542
	"	12:00 N	23	30	-	-	5542
	"	1:00 PM	24	30	-	-	5536
	"	2:00	25	30	-	-	5536

WELL: Getty 35 State, No. 1
PAGE: 3

DATE	STATUS OF WELL	TIME	ELASPED TIME HRS.	ELASPED TIME MIN.	SURFACE PRESSURE TBG	SURFACE PRESSURE CSG	BHP @ (-7162) 10838'PSIG
	Flowing	3:00	26	30	-	-	5536
	"	4:00	27	30	-	-	5530
	"	5:00	28	30	-	-	5530
	"	6:00	29	30	-	-	5530
	"	7:00	30	30	-	-	5530
	"	8:00	31	30	-	-	5530
	"	9:00	32	30	-	-	5530
	"	10:00	33	30	-	-	5524
	"	11:00	34	30	-	-	5524
	"	12:00 MN	35	30	-	-	5542
11/15	"	1:00 AM	36	30	-	-	5542
	"	2:00	37	30	-	-	5542
	"	3:00	38	30	-	-	5536
	"	4:00	39	30	-	-	5536
	"	5:00	40	30	-	-	5530
	"	6:00	41	30	-	-	5524
	"	7:00	42	30	-	-	5524
	"	8:00	43	30	-	-	5524
	Shut in	9:00	44	30	1710 G	*	5524
	"	9:15	0	15	-	-	5580
	"	9:30	0	30	-	-	5586
	"	10:00	1	00	-	-	5592
	"	11:00	2	00	-	-	5599
	"	12:00 N	3	00	-	-	5605
	"	1:00 PM	4	00	-	-	5618
	"	2:00	5	00	-	-	5624
	"	3:00	6	00	-	-	5630
	"	4:00	7	00	-	-	5636
	"	5:00	8	00	-	-	5636
	"	6:00	9	00	-	-	5636
	"	7:00	10	00	-	-	5643
	"	8:00	11	00	-	-	5643
	"	9:00	12	00	-	-	5643
	"	10:00	13	00	-	-	5643
	"	11:00	14	00	-	-	5643
	"	12:00 MN	15	00	-	-	5643
11/16	"	1:00 AM	16	00	-	-	5649
	"	2:00	17	00	-	-	5649
	"	3:00	18	00	-	-	5649
	"	4:00	19	00	-	-	5655
	"	5:00	20	00	-	-	5655
	"	6:00	21	00	-	-	5655
	"	7:00	22	00	-	-	5655
	"	8:00	23	00	-	-	5655
	"	9:00	24	00	-	-	5661
	"	10:00	25	00	-	-	5661
	"	11:00	26	00	-	-	5661
	"	12:00 N	27	00	-	-	5661
	"	1:00 PM	28	00	-	-	5661
	"	2:00	29	00	-	-	5661
	"	3:00	30	00	-	-	5661
	"	4:00	31	00	-	-	5661

WELL: Getty 35 State, No. 1
PAGE: 4

DATE	STATUS OF WELL	TIME	ELASPED TIME HRS.	MIN.	SURFACE PRESSURE TBG	CSG	BHP @ (-7162) 10838'PSIG
	Shut in	5:00	32	00	-	-	5661
	"	6:00	33	00	-	-	5661
	"	7:00	34	00	-	-	5661
	"	8:00	35	00	-	-	5661
	"	9:00	36	00	-	-	5661
	"	10:00	37	00	-	-	5661
	"	11:00	38	00	-	-	5661
	"	12:00 MN	39	00	-	-	5661
11/17	"	1:00	40	00	-	-	5661
	"	2:00	41	00	-	-	5661
	"	3:00	42	00	-	-	5661
	"	4:00	43	00	-	-	5661
	"	5:00	44	00	-	-	5661
	"	6:00	45	00	-	-	5661
	"	7:00	46	00	-	-	5661
	"	8:00	47	00	-	-	5661
	"	9:00	48	00	-	-	5661
	"	10:00	49	00	-	-	5661
	"	11:00	50	00	-	-	5661
	Fished Bombs & run Static Gradient	11:30	50	30	2107	-	5661

* Total Oil Produced during 96.0 hrs Test 1535 BBLS
Total Gas Produced during 96.0 hrs Test 6364 MCF
Average Rate of Gas Per Day 1591 MCF/D
Final Hour Flow of Gas 822 MCF/D

GOR = 4146 CuFt Gas/BBL Oil

JARREL SERVICES, INC.

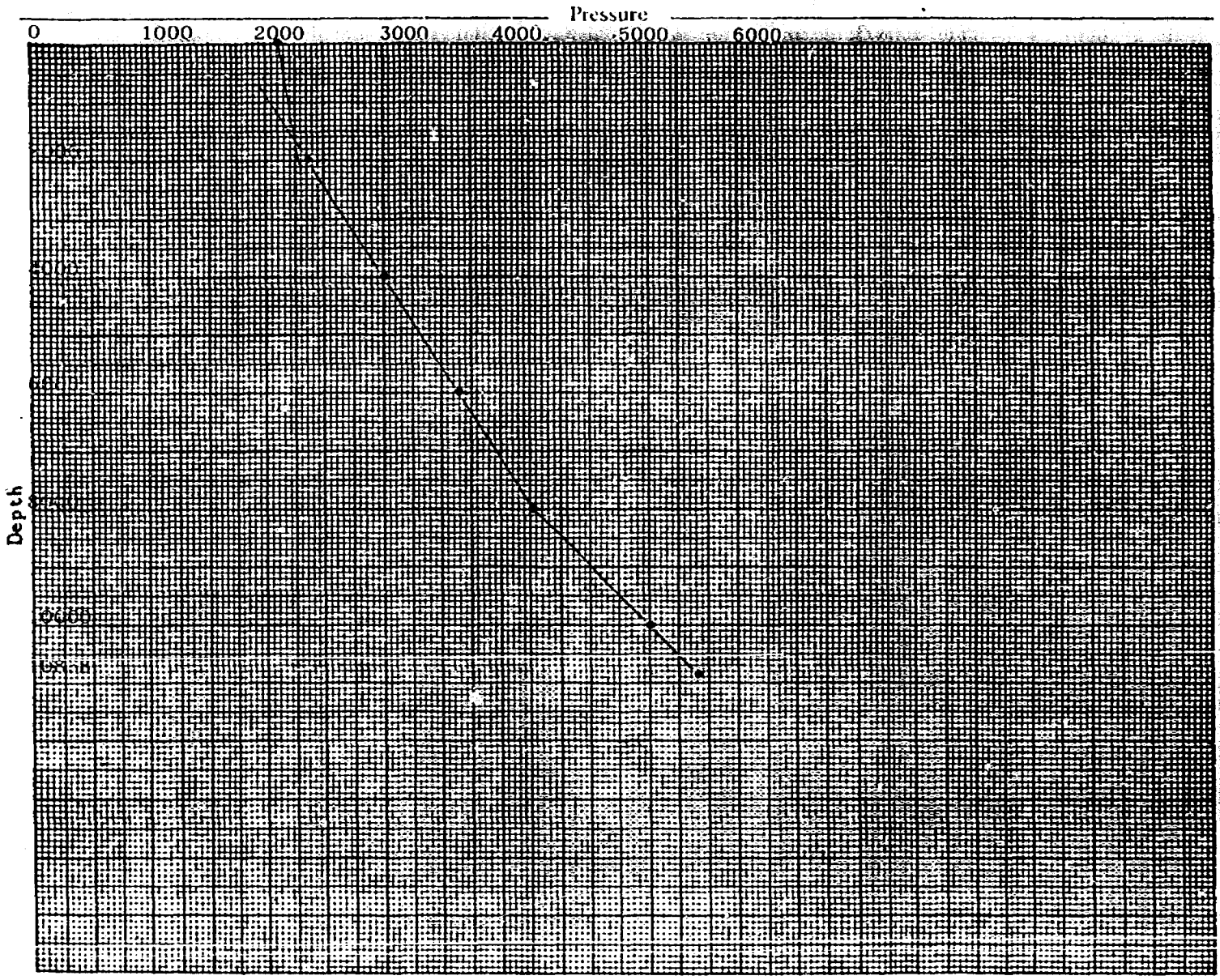
POST OFFICE BOX 1654 PHONE 505 393-5396

HOBBS, NEW MEXICO 88240

OPERATOR Getty Oil Company
FIELD Undesignated
FORMATION Wolfcamp
LEASE Getty 35 State WELL #1
COUNTY Lea STATE New Mexico
DATE November 17, 1978 TIME 11:30 AM
Status Shut in
Test Depth 10838'
Time S. I. 50.5 hrs Last test date 11/11/78
Tub Pres. 2107 BHP last test 5831
Cas. Pres. PKR BHP change 170# Loss
Elev. 3676'GL Fluid top 1739'
Datum (-7162) Water top 8000'
Temp. @ 172°F Run by JSI #13
Cal. No. A 18478 N Chart No. 1

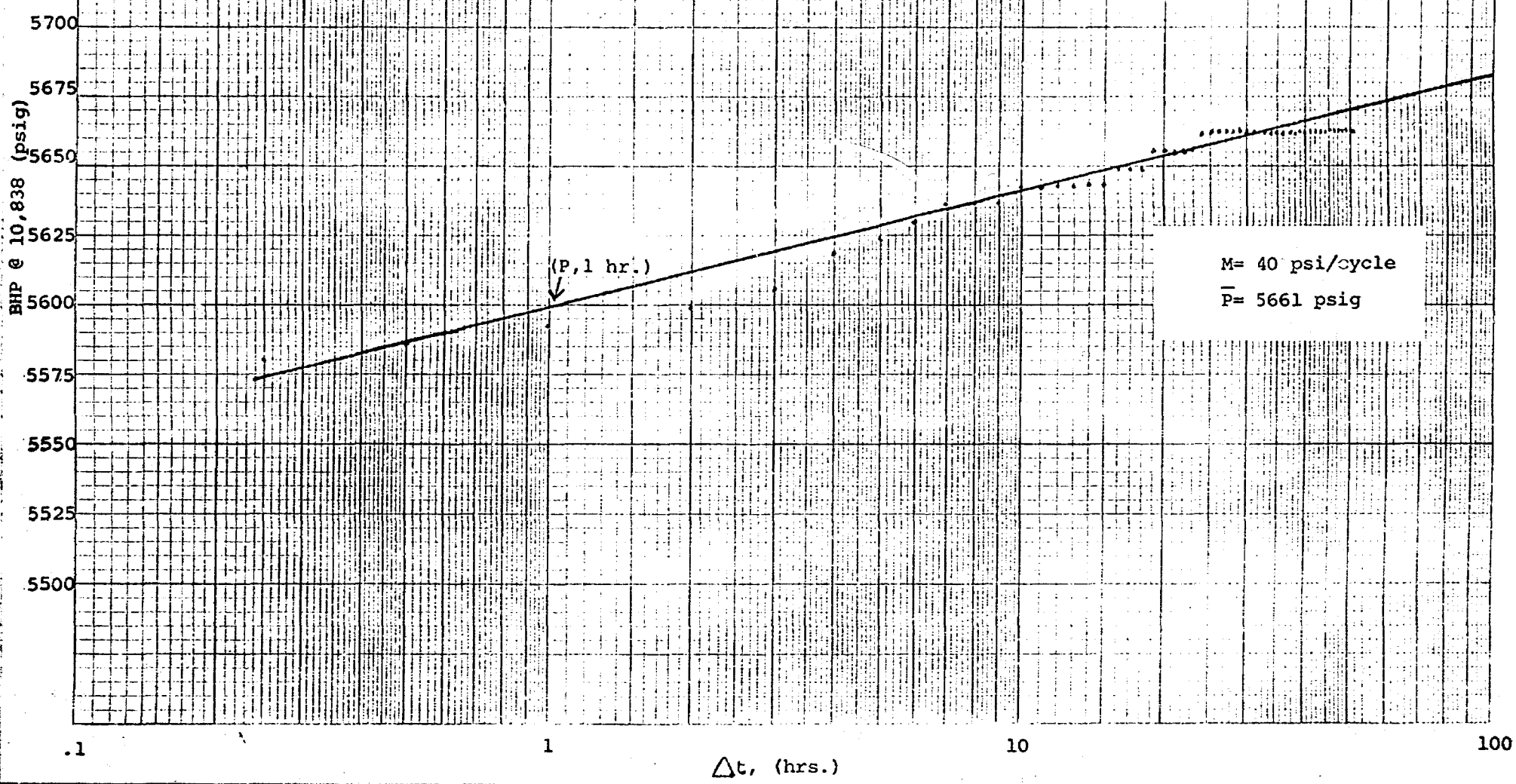
BOTTOM HOLE PRESSURE RECORD

Depth	Pressure	Gradient
0	2107	
2000	2365	.129
4000	3002	.319
6000	3642	.320
8000	4282	.320
10000	5254	.486
10838 (-7162)	5661	.486



SEMI-LOGARITHMIC 3 CYCLES X [illegible] DIVISIONS
KEUFFEL & ESSER CO. [illegible]

Semilog Plot
Pressure Buildup 11/7/78
Getty 35 State Well #1 - Bone Spring



CALCULATION OF Kh (md-ft.) and K (md.)

$$Kh = 162.6 \frac{q\ u\ B}{m} \; ; \quad K = \frac{Kh}{h}$$

h = 22 ft.
q = 300 B/D

μ = .2cp
B = 2.1
m = 40 psi cycle

$$Kh = 162.6 \frac{(300)(.2)(2.1)}{40} = 512.19 \text{ md-ft.}$$

For h = 22 ft.

$$K = \frac{512.19 \text{ md-ft.}}{22 \text{ ft.}} = 23.28 \text{ md.}$$

SKIN EFFECT

$$s = 1.151 \left[\frac{P\ 1\ hr.-Pwf}{m} - \log \frac{K}{\phi u c r_w^2} + 3.23\right]$$

$$s = 1.151 \left[\frac{5600-5524}{40} - \log \frac{23.28(144)}{(.10)(.2)(.000016)\ 22.56} + 3.23\right]$$

$$s = 1.151\ [1.90 - 8.67 + 3.23]$$

$$s = 1.151\ (-3.54)$$

$$s = -4.07$$

GETTY 35 STATE #1 (BONE SPRING)

I. BHP Bomb Test (11/10/78-11/17/78)

1. 96 hour drawdown
2. 50 hour buildup

II. Best data obtained

1. Pressure depletion = 5824-5661 for production = 1535 STBO

III. Material Balance (above bubble point)

$$N = \frac{Np}{Ce \triangle P} \quad \frac{Bo}{Boi}$$

Np = 1535 STBO (test production)
$\triangle P$ = 163 psi (P = 5824-5661)

$$\frac{Bo}{Boi} = 1 + Co \triangle P = 1 + 10 \times 10^{-6}(163) = 1.00163$$

$$Ce = \frac{1}{So} (SoCo+SwCw+Cf) = \frac{1}{.7} (.7 \times 10 \times .3x3 + 4) \times 10^{-6} = 16 \times 10^{-6}$$

$$N = \frac{(1535)(1.00163)}{(16x10^{-6})(163)} = 590{,}000 \text{ STBO}$$ Original Oil in Place

IV. Approximate Reserves

% Rec. above bubble point = 5% assumed
% Rec. below bubble point = 20% assumed (artificial lift)

Reserves = (0.25)(590,000) = 148,000 STBO

VI. Reservoir Size

Original Oil in Place = OOIP = $\frac{7758 \ (Ah) \ \phi \ (so)}{Bo}$

$$Ah = \frac{Bo(OOIP)}{7758 \ \phi \ (So)}$$

$$Ah = \frac{2.1(590{,}000)}{7758(.10)(.7)}$$

Ah = 2281 ac-ft.

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
Applicant's EXHIBIT NO. 8
CASE NO. 6467
Submitted by Getty
Hearing Date 4/23/80

For h = 22 ft.

$$A = \frac{2281 \text{ ac-ft.}}{22 \text{ ft.}}$$

A = 103.71 acres

For h = 11 ft.

$$A = \frac{2281 \text{ ac-ft.}}{11 \text{ ft.}}$$

A = 207.36 acres

CASE 6853: (Continued from April 9, 1980, Examiner Hearing)

Application of Caribou Four Corners, Inc. for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Cha Cha-Gallup Pool underlying the N/2 NE/4 of Section 18, Township 29 North, Range 14 West, 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 6875: Application of Maurice L. Brown Co. for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the San Andres formation underlying the SE/4 NW/4 of Section 4, Township 9 South, Range 34 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 6876: Application of Maurice L. Brown Co. for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Vada-Pennsylvanian Pool underlying the SW/4 of Section 5, Township 9 South, Range 34 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 6467: (Reopened and Readvertised)

In the matter of Case 6467 being reopened pursuant to the provisions of Order No. R-5958 which order created the Grama Ridge-Bone Spring Pool in Lea County with temporary special rules therefor providing for 160-acre spacing. All interested parties may appear and show cause why the Grama Ridge-Bone Spring Pool should not be developed on 40-acre spacing units.

CASE 6877: Application of Florida Exploration Company for compulsory pooling and unorthodox well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp thru Ellenburger formations underlying the N/2 of Section 11, Township 25 South, Range 35 East, to be dedicated to a well to be drilled at an unorthodox location 1200 feet from the North and West lines of said Section 11. 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 6878: Application of Stevens Oil Company for a non-standard gas proration unit, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 160-acre non-standard gas proration unit comprising the N/2 SW/4 and S/2 NW/4 of Section 25, Township 8 South, Range 28 East, Twin Lakes-San Andres Associated Pool, to be dedicated to its O'Brien "F" Well No. 4 located in Unit K of said Section 25.

CASE 6879: Application of Jake L. Hamon for a tubingless completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to produce his Amerada Federal Well No. 2 located in Unit F of Section 17, Township 20 South, Range 36 East, North Osudo-Morrow Gas Pool, thru 4 1/2-inch drill pipe cemented in the hole.

CASE 6861: (Continued from April 9, 1980, Examiner Hearing)

Application of Zia Energy, Inc. for pool creation, special pool rules, and an NGPA determination, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new San Andres oil pool for its State "C" Well No. 1 located in Unit F of Section 17, Township 22 South, Range 37 East, and special rules therefor, including a provision for a limiting gas-oil ratio of 10,000 to 1. Applicant further seeks a new onshore reservoir determination for said State "C" Well No. 1.

CASE 6837: (Continued from April 9, 1980, Examiner Hearing)

Application of Curtis Little for compulsory pooling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Dakota formation underlying the W/2 of Section 7, Township 25 North, Range 3 West, 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.

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. 6467
Order No. R-5958

APPLICATION OF GETTY OIL COMPANY
FOR POOL CREATION AND SPECIAL
POOL RULES, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on February 28, 1979, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 30th day of March, 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, Getty Oil Company, seeks the creation of a new oil pool for Wolfcamp production in Lea County, New Mexico.

(3) That the applicant also seeks the promulgation of special rules for said pool, including a provision for 160-acre proration units.

(4) That the evidence presently available indicates that applicant's Getty 35 State Well No. 1, located in Unit K of Section 35, Township 21 South, Range 34 East, NMPM, Lea County, New Mexico, has discovered a separate common source of supply more properly defined as the Bone Spring formation which should be designated the Grama Ridge-Bone Spring Pool; that the vertical limits of the pool should be the Bone Spring formation, and that the horizontal limits of said pool should be as follows:

TOWNSHIP 21 SOUTH, RANGE 34 EAST, NMPM
Section 35: SW/4

(5) That in order to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, temporary special rules and regulations providing for 160-acre spacing units should be promulgated for the Grama Ridge-Bone Spring Pool.

(6) That the temporary special rules and regulations should provide for limited well locations in order to assure orderly development of the pool and protect correlative rights.

(7) That the temporary special rules and regulations should provide for a depth bracket allowable of 560 barrels.

(8) That the temporary special rules and regulations should be established for a one-year period in order to allow the operators in the subject pool to gather reservoir information to establish the area that can be efficiently and economically drained and developed by one well.

(9) That this case should be reopened at an examiner hearing in April, 1980, at which time the operators in the subject pool should be prepared to appear and show cause why the subject pool should not be developed on 40-acre spacing units.

IT IS THEREFORE ORDERED:

(1) That effective April 1, 1979, a new pool in Lea County, New Mexico, classified as an oil pool for Bone Spring production, is hereby created and designated the Grama Ridge-Bone Spring Pool, with vertical limits comprising the Bone Spring formation and horizontal limits comprising the following-described area:

TOWNSHIP 21 SOUTH, RANGE 34 EAST, NMPM
Section 35: SW/4

(2) That temporary Special Rules and Regulations for the Grama Ridge-Bone Spring Pool, Lea County, New Mexico, are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE GRAMA RIDGE-BONE SPRING POOL

RULE 1. Each well completed or recompleted in the Grama Ridge-Bone Spring Pool or in the Bone Spring formation within one mile of the Grama Ridge-Bone Spring Pool, and not nearer to

nor within the limits of another designated Bone Spring pool, shall be spaced, drilled, operated, and prorated in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well completed or recompleted in the Grama Ridge-Bone Spring Pool shall be located on a unit containing 160 acres, more or less, substantially in the form of a square, which is a quarter section being a legal subdivision of the United States Public Lands Survey.

RULE 3. Each well completed or recompleted in said pool shall not be drilled closer than 660 feet to any quarter section line nor closer than 330 feet to any quarter-quarter section line.

RULE 4. For good cause shown, the Division Director may grant an exception to the requirements of Rule 2 without notice and hearing when the application is for a non-standard unit comprising less than 160 acres. All operators offsetting the proposed non-standard unit shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Division Director may approve the application if, after a period of 30 days, no offset operator has entered an objection to the formation of such non-standard unit.

The allowable assigned to any such non-standard unit shall bear the same ratio to a standard allowable in the Grama Ridge-Bone Spring Pool as the acreage in such non-standard unit bears to 160 acres.

RULE 5. A standard proration unit (158 through 162 acres) in the Grama Ridge-Bone Spring Pool shall be assigned a depth bracket allowable of 560 barrels, subject to the market demand percentage factor, and in the event there is more than one well on a 160-acre proration unit, the operator may produce the allowable assigned to the unit in any proportion.

IT IS FURTHER ORDERED:

(3) That the locations of all wells presently drilling to or completed in the Grama Ridge-Bone Spring Pool or in the Bone Spring formation within one mile thereof are hereby approved; that the operator of any well having an unorthodox location shall notify the Hobbs district office of the Division in writing of the name and location of the well on or before June 1, 1979.

(4) That, pursuant to Paragraph A. of Section 70-2-18, NMSA 1978, contained in Chapter 271, Laws of 1969, existing wells in the Grama Ridge-Bone Spring Pool shall have dedicated

thereto 160 acres in accordance with the foregoing pool rules; or, pursuant to Paragraph C. of said Section 70-2-18, existing wells may have non-standard spacing or proration units established by the Division and dedicated thereto.

Failure to file new Forms C-102 with the Division dedicating 160 acres to a well or to obtain a non-standard unit approved by the Division within 60 days from the date of this order shall subject the well to cancellation of allowable. Until said Form C-102 has been filed or until a non-standard unit has been approved, and subject to said 60-day limitation, each well presently drilling to or completed in the Grama Ridge-Bone Spring Pool or in the Bone Spring formation within one mile thereof shall receive no more than one-quarter of a standard allowable for the pool.

(5) That this case shall be reopened at an examiner hearing in April, 1980, at which time the operators in the subject pool should be prepared to appear and show cause why the Grama Ridge-Bone Spring Pool should not be developed on 40-acre spacing units.

(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

S E A L

fd/

CAMPBELL AND BLACK, P.A.
LAWYERS

JACK M. CAMPBELL
BRUCE D. BLACK
MICHAEL B. CAMPBELL
WILLIAM F. CARR
PAUL R. CALDWELL

POST OFFICE BOX 2208
JEFFERSON PLACE
SANTA FE, NEW MEXICO 87501
TELEPHONE (505) 988-4421

March 25, 1980

Mr. Joe D. Ramey
Director
Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87501

Re: Oil Conservation Division Case No. 6467:
Application of Getty Oil Company for Pool Creation and Special Pool Rules, Lea County, New Mexico

Dear Mr. Ramey:

On March 30, 1979, the Division entered Order No. R-5958 creating the Grama Ridge-Bone Spring Pool and promulgating special pool rules therefor. This Order provided that the case should be reopened at an examiner hearing in April 1980 to allow those subject to the pool rules to appear and show cause why this pool should not be developed on 40 acre spacing units.

Getty Oil Company hereby requests that this case be included on the docket for the examiner hearing scheduled to be held on April 23, 1980.

Your attention to this request is appreciated.

Very truly yours,

William F. Carr

WFC:lr

cc: Mr. Herman Terry

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

JERRY APODACA
GOVERNOR

NICK FRANKLIN
SECRETARY

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

April 3, 1979

Mr. William F. Carr
Campbell & Black
Attorneys at Law
Post Office Box 2208
Santa Fe, New Mexico

Re: CASE NO. 6467
ORDER NO. ~~R-5958~~

Applicant:

Getty Oil Company

Dear Sir:

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

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCC x
Artesia OCC x
Aztec OCC

Other Chester Blodget

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
23 April 1980

EXAMINER HEARING

IN THE MATTER OF:

In the matter of Case 6467 being reopened pursuant to the provisions of Order No. R-5958 which order created the Grama Ridge-Bone Spring Pool in Lea County with temporary special rules therefor providing for 160-acre spacing.

CASE 6467

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: Ernest L. Padilla, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For Getty Oil: William F. Carr, Esq.
CAMPBELL & BLACK P. A.
Jefferson Place
Santa Fe, New Mexico 87501

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

I N D E X

E X H I B I T S

MR. STAMETS: We'll call next Case 6467.

MR. PADILLA: In the matter of Case 6467 being reopened pursuant to the provisions of Order No. R-5958, which order created the Grama Ridge-Bone Spring Pool in Lea County with temporary special rules therefor providing for 160-acre spacing.

MR. CARR: May it please the Examiner, I am William F. Carr, Campbell and Black, P. A., SantaFe, appearing on behalf of the applicant -- or Getty Oil Company, and I have two witnesses who need to be sworn.

(Witnesses sworn.)

PETER J. BOTES

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

Q. Will you state your name and place of residence?

A. Peter J. Botes, Hobbs, New Mexico. That is B-O-T-E-S.

Q. Mr. Botes, by whom are you employed and in what capacity?

A. Getty Oil Company, Petroleum Engineer.

Q. Have you previously testified before this Commission, had your credentials accepted and made a matter of record?

A. No, sir.

Q. Would you briefly summarize your educational background and your work experience for Mr. Stamets?

A. I have a BS degree in petroleum engineering from Mississippi State University. I've been employed with Getty Oil Company approximately four years. The first two years I was involved in drilling and production operations in Illinois and since November of 1978 I've been working in Hobbs in drilling and production operations.

Q. Are you familiar with the application in this case and the general area involved in this matter?

A. Yes, sir, I am.

MR. CARR: Are the witness' qualifications acceptable?

MR. STAMETS: Yes, they are.

Q. Mr. Botes, will you briefly state what Getty is seeking with this at this hearing?

A. We intend to present evidence to show why the Grama Ridge-Bone Spring Pool should not be developed on 40-acre spacing units, but developed on 160-acre spacing, and to get permanent pool rules providing for 160-acre spacing.

SALLY W. BOYD, C.S.R.
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Q. Could you briefly summarize the events which have led up to this hearing today?

A. The Getty 35 State No. 1 was drilled to a depth of 13,355 feet in October of 1978.

November of 1978 the Bone Spring was perforated from 10,810 to 10,828. It was initially tested for 600 barrels of oil per day, 1153 Mcf per day, and 799 barrels of water per day.

The Bone Spring was shutin on November 15th, 1978, and a buildup test was run. The well then remained shutin waiting for a pipeline connection.

In January of 1979 the Morrow zone was completed and both of these zones have been commercially productive.

In April of '79 Getty appeared before the Oil Conservation Division to request permission to dually complete Getty 35 State No. 1 in the Bone Spring and the Morrow zone. Also at the hearing Getty requested special rules for the Bone Spring Pool with provision requesting development for 160-acre spacing. As a result, the Commission issued Order No. R-5958, which provided special rules and regulations for a 1-year period. This allowed Getty the opportunity to collect necessary data to establish that the reservoir can effectively and economically drain 160-acre spacing.

Also the order stated that in April, 1980, the case would be reopened before an Examiner Hearing and at that time Getty would be prepared to show that the Bone Spring should not be developed on 40-acre spacing.

Q. Have you prepared certain exhibits for introduction in this case?

A. Yes.

Q. Will you please refer to what has been marked Applicant's Exhibit Number One and review this exhibit for the Examiner?

A. Yes. This is a plot -- plat of the Grama Ridge East Field, showing the subject well in yellow, Getty 35 State No. 1. The well is located in Unit K, 2310 feet from the south line and 1650 feet from the east line of Section 35, Township 21 South, Range 34 East, Lea County, New Mexico.

The Bone Spring producing interval in the 35 State No. 1 has not been found to be productive in any of the offset wells on this plat.

Q. Will you refer to what has been marked Exhibit Number Two?

A. This is a diagrammatic sketch of the well as it was initially completed and there have been no changes in this diagram. Please note that the Bone Spring perforations are from 10,810 to 10,828.

Q. And this exhibit was offered in the original case?

A. Yes, it was.

Q. Mr. Botes, will you now refer to Exhibits Three and Four and explain the information contained thereon?

A. Exhibit Number Three is a tabulation of daily well tests from Getty 35 State No. 1 of the Bone Spring. It shows choke size, gas, oil, water, and tubing pressure.

Exhibit Four is a graphical representation of that data and it shows the rates and decline experienced in the well.

The reservoir is in its advanced stages of depletion, and as you'll note, in January of 1980, the production has fallen off and we're at the point where artificial lift will be needed to recover additional reserves.

Q. Without artificial lift in this well is that the end of its economic life?

A. After --

Q. Or in this zone?

A. Yes.

Q. Will you refer to Exhibit Number Five?

A. Yes. This is a monthly tabulation of oil, water, and gas for the well during its life, and the cumulative totals are 122,372 barrels of oil, 59,440 barrels of water, and 188,710 Mcf of gas.

Q. And these figures are as of April 1, 1980?

A. Yes, they are.

Q. Is there another witness who will testify as to pressure buildup and reservoir characteristics?

A. Yes, there is.

Q. Do you have anything further to add to your testimony?

A. No, sir.

Q. Were Exhibits One through Five prepared by you or have you reviewed them and can testify to their accuracy?

A. Yes, I can.

MR. CARR: At this time, Mr. Examiner, we would offer Getty Exhibits One through Five.

MR. STAMETS: These exhibits will be admitted.

MR. CARR: I have nothing further on direct of this witness.

MR. STAMETS: The witness may be excused at this time. It's possible he might be recalled.

MR. CARR: And I would call Mr. Herman Terry.

SALLY W. BOYD, C.S.R.
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Santa Fe, New Mexico 87501
Phone (505) 455-7409

HERMAN W. TERRY

being called as a witness and having been duly sworn upon his oath, testifies as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

Q. Will you state your full name for the record?

A. My name is Herman W. Terry.

Q. Where do you reside?

A. I reside in Hobbs, New Mexico.

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

A. I'm employed by Getty Oil Company as the Area Engineer of the Hobbs Area.

Q. Have you previously testified before this Commission, had your credentials accepted and made a matter of record?

A. Yes, sir, I have.

Q. Are you familiar with the application and the area which is involved in this case?

A. Yes, I am.

MR. CARR: Are the witness' qualifications acceptable?

MR. STAMETS: They are.

Q. Mr. Terry, would you refer to what has been marked for identification as Getty Exhibit Number Six and review this for Mr. Stamets?

A. Yes, sir. Exhibit Number Six is a bottom hole pressure report from Garrald Services, Incorporated, of Hobbs, New Mexico, of our buildup test which was performed in November of '78. It indicates that tandem bombs were run and set at 10,838 on November 10th, 1978. The well was shut-in. The static bottom hole pressure at that time was indicated to be 5824.

The well was opened up, flowed on various choke sizes for a total of 96 hours, and the well was then shutin on November 15th for a 50-hour buildup test. The flowing bottom hole pressure at the time it was shutin was indicated to be 5524.

Final buildup at the end of 50 hours was indicated to be 5661.

A total of 1535 barrels of stock tank oil was produced during this 96-hour flow period. Total gas produced was 6364 Mcf gas.

There was a difference noted in the original initial static bottom hole pressure and the final static bottom hole pressure of 163 pounds.

The last page of this exhibit is the static pressure gradients made by Garrald Wireline Services

when they were coming out of the hole.

Q. Will you not refer to what has been marked Exhibit Number Seven and review this for Mr. Stamets?

A. Exhibit Number Seven is a simulog plot of the pressure buildup data from the Gerrald Wireline Survey. This data has been plotted. A straight line has been drawn. M has been determined to be 40 psi per cycle, and as you can see, the average reservoir pressure at the end of the build-up was 5661 pounds.

Page two of the exhibit is calculations of transmissibility, or kh. Kh was calculated to be 512.19 millidarcy feet for an h of 22 feet, which was the net pay present in this well. K was determined to be 23.28 millidarcies.

Furthermore, the skin effect was calculated. S was found to be a minus 4.07, which indicates stimulation as a result of our well being acidized prior to being put on production.

Q. What kind of porosity did you encounter in this well?

A. A porosity of 10 percent was used for the -- in the calculation for the skin effect, and this porosity was taken from our neutron density log. This log was presented in the previous case.

Q. Mr. Terry, will you refer to what has

been marked Exhibit Number Eight, and summarize the data contained thereon?

A. Yes, sir. Exhibit Number Eight is some additional calculations that we made on this well. We took the data from the 96-hour drawdown and the 50-hour buildup and, as pointed out previously, we observed a pressure depletion of 163 pounds. The static bottom hole pressure reduced from 5824 to 5661 with a production of 1535 stock tank barrels of oil.

Using this data we made material balance calculation for the reservoir and it was determined from these calculations that the original oil in place was 590,000 stock tank barrels of oil.

Assuming a 25 percent recovery factor, it was estimated that the recoverable reserves from this well would be 148,000 stock tank barrels of oil. This compares very favorably with our cumulative production as of April 1st, 1980; as of that date we'd recovered approximately 84 percent of the recoverable reserves as estimated by this calculation.

We further calculated the reservoir size. AH was calculated to be 2281 acre feet. Assuming a 22 feet of net pay which was present in this well, it would indicate that the reservoir is 103 -- slightly over 103 acres in areal extent.

Assuming an average reservoir thickness of only 11 feet, it would indicate that the areal extent of the reservoir is only 207 acres.

Q. Do you have a recommendation to make to the Examiner concerning the rules which will result from this hearing?

A. Yes, sir. Based upon the permeability and the porosity data which we have and the well's performance, we would recommend that the permanent rules be established providing for 160-acre spacing for the Grama Ridge-Bone Spring Pool.

Q. Can you testify as to the accuracy of Applicant's Exhibits Six through Eight?

A. Yes, sir, I can.

MR. CARR: At this time, Mr. Examiner, we would offer Getty Exhibits Six through Eight.

MR. STAMETS: These exhibits will be admitted.

MR. CARR: I have nothing further on direct.

CROSS EXAMINATION

BY MR. STAMETS:

Q. Mr. Terry, does the review of all of these exhibits indicate that -- to you that this pool has

been totally developed by the one well?

A. Yes, sir, it would appear that the one well has totally developed the pool. As shown on Exhibit One, none of the offset wells found this particular interval productive in any of the offset wells, and based upon our reservoir size calculations, it would appear that this is the only well presently in the pool or that will ever be in the pool.

Q. That, however, would not preclude your -- you from discovering other Bone Spring intervals that might be productive in the area.

A. No, sir, it would not.

Q. What part of the Bone Spring is this well producing from?

A. It's towards the lower part of the gross interval, I believe.

Q. Is it out of the third lime section or third sand section?

A. I'm not completely sure just exactly which section it is.

Q. It is some concern to me that we create 160-acre pool here for the entire Bone Spring section and we're only dealing with a very small interval. I would like to see a recommendation from Getty, both to the Examiner and to our District Office, for an amendment of the vertical

limits of this pool to include the basic interval that we're looking at here.

A. Okay. All right.

MR. STAMETS: Any other questions of the witness? He may be excused.

Anything further in this case?

MR. CARR: Nothing further.

MR. STAMETS: The case will be taken under advisement.

(Hearing concluded.)

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Phone (505) 455-7409

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REPORTER'S CERTIFICATE

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY THAT the foregoing 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.

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. 6462 heard by me on 4-23 1980.

Richard L. Stamets, Examiner
Oil Conservation Division

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
State Land Office Building
Santa Fe, New Mexico
28 February 1979

EXAMINER HEARING

IN THE MATTER OF:

Application of Getty Oil Company for a dual completion, Lea County, New Mexico. — CASE 6466

and

Application of Getty Oil Company for pool creation and special pool rules, Lea County, New Mexico. — CASE 6467

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: Lynn Teschendorf, Esq.
Legal Counsel for the Division
State Land Office Bldg.
Santa Fe, New Mexico 87503

For the Applicant: William F. Carr, Esq.
CAMPBELL AND BLACK P. A.
Jefferson Plaza
Santa Fe, New Mexico 87501
and
Chester Blodget, Esq.
Getty Oil Company
Tulsa, Oklahoma

I N D E X

E X H I B I T S

MR. STAMETS: The hearing will please come to order. We'll call at this time Case 6466.

MS. TESCHENDORF: Case 6466. Application of Getty Oil Company for dual completion, Lea County, New Mexico.

MR. CARR: Mr, Examiner, inasmuch as this and the succeeding case both involve the subject well and the testimony will considerably overlap, I would request that these cases be consolidated for the purposes of testimony only.

MR. STAMETS: Let us call Case 6467 and we will consolidate them.

MS. TESCHENDORF: Case 6467. Application of Getty Oil Company for pool creation and special pool rules, Lea County, New Mexico.

MR. CARR: Mr. Examiner, I'm William F. Carr, Campbell and Black, P. A., Santa Fe, appearing on behalf of the Applicant, Getty Oil Company. I have one witness who needs to be sworn.

(Witness sworn.)

MOHAMMED YAMIN MERCHANT

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

Q. Will you state your full name for the record, please?

A. My full name is Mohammed Yamin Merchant.

Q. And where do you reside?

A. I reside in Hobbs, New Mexico.

Q. Mr. Merchant, by whom are you employed and in what position?

A. I'm employed with Getty Oil Company as a petroleum engineer.

Q. Have you previously testified before the Oil Conservation Commission?

A. No, I have not.

Q. Would you briefly summarize for the Examiner your educational background and your work experience?

A. I graduated from high school in Karachi, Pakistan, and got my chemical engineering degree from South Dakota School of Mines and Technology in Rapid City, South Dakota. I went to work for Getty in January of '75 in their International Division, Los Angeles, California; spent two months there, and then I spent three months in Odessa, Texas, in their gas processing operations, and from there I moved to Andrews, Texas, and I was involved in deep drilling and

production all over West Texas.

And as of June, 1977, I'm residing in Hobbs, working out of the Hobbs Office as a petroleum engineer.

Q. Mr. Merchant, are you familiar with the subject matter of these applications and the subject wells?

A. Yes, sir, I am.

MR. CARR: Mr. Examiner, are the witness' qualifications acceptable?

MR. STAMETS: They are.

Q. (Mr. Carr continuing.) Mr. Merchant, will you briefly state what Getty is seeking in these applications?

A. Okay, Getty is seeking to drill, complete, and produce a Morrow-Wolfcamp well in Lea County, New Mexico.

Q. Mr. Merchant, will you refer to what has been marked for identification as Exhibit Number One and explain to the Examiner what it is and what it shows?

A. Okay. Exhibit Number One is Commission Form C-102, which shows the location of the well. Basically that is all, just telling us where the well is located, the legal description.

Q. Will you refer to what has been marked for identification as Exhibit Number Two and explain what it is?

A. Exhibit Number Two is a well sketch of where the casing is set -- casings are set and how they are cemented and what the present setup is in the well, downhole configura-

tion.

We've got two strings of tubing in the hole, 2-3/8ths. We got a dual packer in the hole set at 10,187, and a Model D permanent packer at 12,200. We're producing the Wolfcamp zone from perforations from 10,810 to 10,828 through the short string, and we're producing the Morrow zone from 12,907 to 13,102 through the long string.

Q. Will you refer to what has been marked as Exhibit Number Three and summarize the information contained on that?

A. Exhibit Number Three basically shows the same information what we just saw in Exhibit Two. It also shows what each zone, Wolfcamp and Morrow, tested as.

The Wolfcamp tested at 600 barrels of oil and 1,153 Mcf of gas on a 2064 choke, and the Morrow zone tested at absolute open flow at 11,107 Mcf a day.

Q. What is the gas/oil ratio in the Wolfcamp?

A. The gas/oil ratio in the Wolfcamp is 1921-to-1.

Q. Will you please refer to what has been marked as Exhibit Number Four and explain to the Examiner what it is?

AExhibit Four again is graphical illustration of what the 4-point looked like on the Morrow zone, which calculated out to be 11,107 Mcf a day.

Memo

From

FLORENE DAVIDSON
ADMINISTRATIVE SECRETARY

To Getty St. 35 #1

Top of Wolfcamp - 11,285'

Top of Morrow - 12,100'

Correlated from
Shell Fed. BE #1
4-24-34
Antelope Ridge
and
Phillips Pet.
Hat Mesa
11-21-32

OIL CONSERVATION COMMISSION-SANTA FE

Q. And now I direct your attention to Exhibit Number Five and ask you to explain what this shows.

A. Exhibit Five is a Commission Form C-122 and it have all the data which we used to plot the curve which was seen in Exhibit Four, to calculate the absolute open flow potential.

Q. Mr. Merchant, what was the initial bottom hole pressure that you encountered in the Wolfcamp?

A. The initial bottom hole pressure in the Wolfcamp was 5661. That's right.

Q. What other evidence do you have of good permeability in the Wolfcamp that would lead you to believe it could drain 160 acres?

A. From all the data that we have right now, the initial bottom hole pressure, initial flowing pressure, and the instant shut-in we had on the well at any time it was shut-in instant build-up, we feel like there is enough permeability, a very good permeability to drain 160 acres of the reservoir.

Q. Now admittedly your data is somewhat incomplete at this time.

A. At this time we don't -- don't have enough data in the sense it is the first well in that area. We do not have enough production data and hopefully, we will have some more production data and may have another well in the

area at this time to back up what we think.

Q. So you are relying on the bottom hole pressure and the pressure build-up data that you have to conclude that this well will drill 160-acres, is that correct?

A. That's correct.

Q. Will you refer to what has been marked for identification as Exhibit Number Six and explain to the Examiner what it shows?

A. Exhibit Six is a plat showing the subject well and offsets around it.

Q. Okay, will you now look at Exhibit Number Seven and explain what that is?

A. Exhibit Seven if basically the same thing as Exhibit Six, except that it includes more sections around Getty 35 State, the subject well.

Q. Mr. Merchant, how close is the nearest Wolfcamp production to the subject well?

A. The nearest Wolfcamp production we know of is at least in a six to seven mile radius.

Q. Now I would direct your attention to what has been marked for identification as Exhibit Number Eight, and ask you to explain to the Examiner what this is.

A. Exhibit Eight is an open hole log on the subject well. It has the formation tops marked from top to bottom, Wolfcamp, Strawn, Atoka, and the Morrow.

It also shows the perforations in the Wolfcamp zone and the perforations in the Morrow zone.

Q. Will you refer to what has been marked as Exhibit Number Nine and explain to the Examiner what it is?

A. Exhibit Nine is a packer leakage test required by the Commission and it shows that we do not have any kind of communication between the top zone and the bottom zone, the Wolfcamp and the Morrow.

Q. Would you refer to what has been marked as Exhibit Number Ten and explain what it is and note the difference between it and Exhibit Number Six? Exhibit Six was the prior plat.

A. Okay, Exhibit Six is showing the whole section and gave 35 State 640-acre dedicated to a Morrow gas zone.

Exhibit Eleven is showing 160 acres dedicated to the Wolfcamp zone.

Q. Mr. Merchant, is it correct then that the acreage outlined in red on your Exhibit Number Ten is the acreage which you would like to dedicate to the subject well and also like included in the new pool?

A. That's correct.

Q. Will you refer to what has been marked as Exhibit Number Eleven and explain what it is?

A. What exhibit number was it, Number Eleven?

Q. Number Eleven.

A. Exhibit Eleven is a copy of the Form C-107, Application for Multiple Completion, which have the data of where the well is and also shows what zones, tops and bottoms of each zone we're producing from, and also have the list of offset operators to the lease on which this well is located.

Q. Mr. Merchant, why is 160-acre spacing necessary for this well?

A. There are two main reasons why we are asking for 160-acre spacing.

The first one is economics. We don't feel like it's economically profitable to drill 11,000 feet in a 40-acre spacing.

And the second reason is we feel very confident that we can drain 160 acres of the reservoir by one well instead of going to four wells.

There is enough -- from the initial pressure data we feel like there is enough permeability in the reservoir that one well would drain 160-acre spacing.

Q. Mr. Merchant, if special pool rules were adopted which provide for 160-acre spacing, will this, in your opinion, avoid the drilling of unnecessary wells?

A. Yes.

Q. In your opinion would it reduce the risk resulting from the drilling of an excessive number of wells?

A. That's true.

Q. Now, Mr. Merchant, if further development in the pool and the production history of the wells establish that they cannot effectively drain 160 acres, could the pool subsequently be developed on a smaller spacing pattern?

A. That's right, if we have enough reservoir data and the pressure data and production history, and at a later date it proves to be that we need 40-acre spacing to effectively drain the reservoir, we would definitely go for it.

Q. In your opinion will granting the application be in the interest of conservation, the prevention of waste, and the protection of correlative rights?

A. Yes, sir.

Q. Were Exhibits One through Eleven prepared by you or under your supervision and direction?

A. They were prepared by me.

MR. CARR: At this time, Mr. Examiner, we would offer into evidence Exhibits One through Eleven.

MR. STAMETS: These exhibits will be admitted.

MR. CARR: I have nothing further on direct.

CROSS EXAMINATION

BY MR. STAMETS:

Q. Mr. Merchant, have you talked to our Hobbs District Office personnel as to where they have picked the top of the Wolfcamp in this area?

A. No, I have not.

Q. The reason I ask that, is I've got information that they picked the top of the Wolfcamp at 11,285, which is considerably below the 10,828 foot lower perforation in what you've called the Wolfcamp, and also, it's difficult to look at this log without being able to correlate it with some others.

A couple of those sections where you show the top of the Wolfcamp and then again at about 10,900 certainly look a lot like Bone Springs Sand.

A. From all the data we have and all the data our geologist can come up with, we still feel like that we are producing from the Wolfcamp reservoir.

We have tried to determine another way besides, you know, going by the electric logs, of what's what, and the second way we were trying to come up with and trying to see if we are in the Wolfcamp or the Bone Springs is from produced water analysis, and as of this date we have not been able to say, well, it is the Bone Springs production.

Q. Would Getty be willing to get together with our District personnel and clarify with them the actual formation name?

A. I don't see any reason why we can't.

Q. And for purposes of your application, it really doesn't make any difference whether or not this is called Bone Springs or called Wolfcamp, you still seek the creation of a new pool and temporary special pool rules.

A. That's correct.

Q. Okay. Is this well producing now?

A. Yes, sir, the well is producing from both zones.

Q. Okay. How long do you think it will take you to develop the information that you would need to prove that the well is capable of draining at least 160 acres in the upper zone?

A. We feel like that we should -- we need at least six months data; three to six months data. And the pressure, you know, pressure build-up we will run later on, and the production history, and say whether we can drain 160 acre spacing or not.

Q. Okay, how long a period of time would it take you to evaluate the six months production history?

A. Another six months, I would think.

Q. So if you had temporary rules for a period of one year, you should be able to come in at the end of that time and show by evidence that the well is or is not draining 160 acres?

A. That's correct.

Q. I notice your short string of tubing is set on something over 600 feet above the upper perforations. Why is that?

A. As you say, the line of top is 10,389, and lot easier both packerwise and if you're running any kind of logging tools or wireline tools, to get through a 7-inch packer, give you some more room to bore down the hole and do what you want to do rather than go down and have very little room to, well, you know, if you run a correlation log, you need a little bit more room, for example.

If you set it, you really would not have enough room, I would think.

Q. Will you be able to show at the end of that one year that this method of production through tubing is efficient and effective, as well?

A. Yes, I feel like we can. We will.

Q. How long has the Wolfcamp zone been producing?

A. We completed the Wolfcamp zone in November, 1978, and we produced it until November 18. I'll give you the date, if you would like to have the date, when we perforated the Wolfcamp.

Q. No, just an indication.

A. But in about a week's time we shut in the Wolfcamp on November 18th, 1978. And it was shut in until

January 5th, 1979, on account of gas connection.

Q. So you really don't have any extensive production history?

A. No, sir, we don't.

Q. Okay.

MR. STAMETS: Any other questions of this witness? He may be excused.

Oh, one other question. Do you all have a preferred pool name out there?

A. We would like to call it Grama Ridge Wolfcamp. Or Grama Ridge Bone Springs, whatever it turns out to be.

MR. STAMETS: Okay, very good.

Any other questions of the witness? He may be excused.

Anything further in this case?

MR. CARR: Nothing further.

MR. STAMETS: We'll take the case under advisement.

We will hold up any action on this case until such time as we have clarification through our District Office as to what the formation is.

A. Thank you.

(Hearing concluded.)

REPORTER'S CERTIFICATE

I, SALLY W. BOYD, a court 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, knowledge, and skill, from my notes taken at the time of the hearing.

Sally W. Boyd
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. 6466-6467 heard by me on 2-28 19.79.

Richard L. Stamets, Examiner
Oil Conservation Division

CASE 6464: Application of Dallas McCasland for clarification of Orders Nos. R-2789 and R-2794, Lea County, New Mexico. Applicant, in the above-styled cause, seeks clarification of Orders Nos. R-2789 and R-2794 to determine what formations have been unitized and what formations are subject to a waterflood project under the South Penrose-Skelly Unit, Sections 6 and 7, Township 22 South, Range 37 East, Lea County, New Mexico, and of the vertical limits of the Eumont and Penrose-Skelly Pools in said sections.

CASE 6465: Application of Getty Oil Company for an unorthodox well location and a non-standard proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 160-acre non-standard gas proration unit comprising the SE/4 of Section 31, Township 24 South, Range 37 East, Jalmat Gas Pool, Lea County, New Mexico, to be dedicated to its J. W. Sherrell Well No. 9 located 2250 feet from the South line and 1650 feet from the East line of said Section 31.

CASE 6466: Application of Getty Oil Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion of its State 35 Well No. 1 located in Unit K of Section 35, Township 21 South, Range 34 East, Lea County, New Mexico, to produce oil from an undesignated Wolfcamp pool and gas from the Grama Ridge-Morrow Gas Pool through parallel strings of tubing.

CASE 6467: Application of Getty Oil Company for pool creation and special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order creating a new oil pool in the Wolfcamp formation for its State 35 Well No. 1 located in Unit K of Section 35, Township 21 South, Range 34 East, Lea County, New Mexico, and for promulgation of special pool rules, including provision for 160-acre spacing.

CASE 6468: Application of Dome Petroleum Corporation for an exception to Order No. R-1069, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 2 of Order No. R-1069, as amended, for the Bisti-Lower Gallup Oil Pool to approve the following 13 non-standard proration units: the W/2 NW/4, W/2 NE/4, E/2 SW/4, and the E/2 SE/4 of Sections 3, 4, and 9, and the W/2 NW/4 of Section 10, all in Township 26 North, Range 14 West, San Juan County, New Mexico.

CASE 6469: Application of Continental Oil Company for a dual completion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion of its Fed. 34 Well No. 1 located in Unit N of Section 34, Township 20 South, Range 26 East, Eddy County, New Mexico, to produce gas from the Springs-Upper Pennsylvanian Pool and an undesignated Morrow pool through parallel strings of tubing.

CASE 6470: Application of Phillips Petroleum Company for approval of infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a waiver of existing well spacing requirements to permit an infill drilling program in its East Vacuum Unit Area, Vacuum Grayburg-San Andres Pool, Lea County, New Mexico, and a finding that such infill wells are necessary to effectively and efficiently drain that portion of their proration units which is not presently being drained by any existing well. Applicant specifically seeks such waivers and findings now for ten wells, all in Township 17 South, Range 35 East, and located as follows: Unit K of Section 27; Units M and O, Section 28; Units B, I, and M of Section 32; Units C, H, and M of Section 33; and Unit C of Section 34.

CASE 6471: Application of Consolidated Oil & Gas, Inc. for approval of infill drilling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks a waiver of existing well-spacing requirements and a finding that the drilling of its Freeman Well No. 1-A to be located in Unit C of Section 11, Township 31 North, Range 13 West, Basin-Dakota Pool, San Juan County, New Mexico, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the existing well.

CASE 6472: Application of Consolidated Oil & Gas, Inc. for approval of infill drilling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks a waiver of existing well-spacing requirements and a finding that the drilling of its Jenny Well No. 1-A to be located in Unit P of Section 13, Township 26 North, Range 4 West, Basin-Dakota Pool, Rio Arriba County, New Mexico, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the existing well.

CASE 6473: Application of Consolidated Oil & Gas, Inc. for approval of infill drilling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks a waiver of existing well-spacing requirements and a finding that the drilling of its McIntyre Well No. 1-A to be located in Unit K of Section 11, Township 26 North, Range 4 West, Basin-Dakota Pool, Rio Arriba County, New Mexico, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the existing well.

CASE 6474: Application of Consolidated Oil & Gas, Inc. for approval of infill drilling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks a waiver of existing well-spacing requirements and a finding that the drilling of its Williams Well No. 1-A to be located in Unit C of Section 24, Township 31 North, Range 13 West, Basin-Dakota Pool, San Juan County, New Mexico, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the existing well.

CAMPBELL AND BLACK, P.A.
LAWYERS

JACK M. CAMPBELL
BRUCE D. BLACK
MICHAEL B. CAMPBELL
WILLIAM F. CARR
PAUL R. CALDWELL

POST OFFICE BOX 2208
JEFFERSON PLACE
SANTA FE, NEW MEXICO 87501
TELEPHONE (505) 988-4421

February 8, 1979

Case 6467

rec'd 2/8/79

Mr. Joe D. Ramey
Division Director
Oil Conservation Division
New Mexico Department of
Energy and Minerals
Post Office Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

Enclosed in triplicate is the application of Getty Oil Company for pool creation, special pool rules and dual completion, Lea County, New Mexico.

I would appreciate this case being included on the docket for the February 28, 1979 examiner hearing.

Sincerely,

William F. Carr

William F. Carr

WFC:tn

Enclosure

cc: Chester E. Blodget, Attorney
Getty Oil Company
Post Office Box 3000
Tulsa, Oklahoma 74102

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

IN THE MATTER OF THE APPLICATION
OF GETTY OIL COMPANY FOR POOL
CREATION, SPECIAL POOL RULES, AND
DUAL COMPLETION, LEA COUNTY,
NEW MEXICO.

Case 6467

APPLICATION

Comes now GETTY OIL COMPANY, by their undersigned attorneys, and hereby makes application for an order designating a new pool as a result of the discovery of oil in the Wolfcamp formation in its Getty 35 State No. 1 Well located 2310' from the South line and 1650' from the West line in Unit K of Section 35, Township 21 South, Range 24 East, Lea County, New Mexico and for promulgation of special pool rules, including (1) 160-acre spacing or proration units on a permanent basis or, in the alternative, on a temporary basis and (2) the dedication of all of the southwest quarter of said Section 35 to the Getty 35 State No. 1 Well. Applicant further seeks authorization to dually complete the subject well in the Wolfcamp and Morrow formations and in support of this application would show the commission:

1. That Getty Oil Company is the owner and operator of the Getty 35 State No. 1 Well.

2. That while drilling said well to test the Morrow formation discovered oil in paying quantities in the Wolfcamp formation.

3. That Applicant believes that the following described lands are reasonably proven to be productive of oil in paying quantities from the Wolfcamp formation and should be included in the original definition of a new pool to be created because of said discovery:

Township 21 South, Range 24 East, N.M.P.M.

Section 35:SW/4

4. That in order to avoid economic loss caused by the drilling of unnecessary wells, to avoid augmentation of risk arising from the drilling of an excessive number of wells and to otherwise prevent waste and protect relative rights, special pool rules and regulations providing for 160-acre spacing units in the Wolfcamp should be promulgated for the new pool.

5. That Applicant desires to complete its said well as a dual completion: to produce oil from the Wolfcamp formation from the interval between 10,810 feet and 10,828 feet, and to produce gas from the Morrow formation from the interval between 12,907 feet and 13,102 feet. The said oil to be produced through 2-3/8 inch tubing set at 10,187 feet and the gas to be produced through 2-3/8 tubing set at 12,200 feet.

6. That a Baker Model K Dual Packer has been set at 10,187 feet and a Baker Model D Packer has been set at 12,200 feet.

7. That the granting of this application will avoid waste, allow the recovery of oil and gas which might not otherwise be recovered, and will not violate correlative rights.

WHEREFORE, GETTY OIL COMPANY, requests that this application be set for hearing before a duly appointed examiner of the Oil Conservation Division on February 28, 1979, that notice be given as required by law and the rules of the Division, and that the application be approved.

Respectively submitted

CAMPBELL AND BLACK, P.A.
Attorneys for Applicant
Post Office Box 2208
Santa Fe, New Mexico 87501

By William F. Carr
William F. Carr

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

IN THE MATTER OF THE APPLICATION
OF GETTY OIL COMPANY FOR POOL
CREATION, SPECIAL POOL RULES, AND
DUAL COMPLETION, LEA COUNTY,
NEW MEXICO.

Case 6467

APPLICATION

Comes now GETTY OIL COMPANY, by their undersigned attorneys, and hereby makes application for an order designating a new pool as a result of the discovery of oil in the Wolfcamp formation in its Getty 35 State No. 1 Well located 2310' from the South line and 1650' from the West line in Unit K of Section 35, Township 21 South, Range 24 East, Lea County, New Mexico and for promulgation of special pool rules, including (1) 160-acre spacing or proration units on a permanent basis or, in the alternative, on a temporary basis and (2) the dedication of all of the southwest quarter of said Section 35 to the Getty 35 State No. 1 Well. Applicant further seeks authorization to dually complete the subject well in the Wolfcamp and Morrow formations and in support of this application would show the commission:

1. That Getty Oil Company is the owner and operator of the Getty 35 State No. 1 Well.

2. That while drilling said well to test the Morrow formation discovered oil in paying quantities in the Wolfcamp formation.

3. That Applicant believes that the following described lands are reasonably proven to be productive of oil in paying quantities from the Wolfcamp formation and should be included in the original definition of a new pool to be created because of said discovery:

Township 21 South, Range 24 East, N.M.P.M.

Section 35:SW/4

4. That in order to avoid economic loss caused by the drilling of unnecessary wells, to avoid augmentation of risk arising from the drilling of an excessive number of wells and to otherwise prevent waste and protect relative rights, special pool rules and regulations providing for 160-acre spacing units in the Wolfcamp should be promulgated for the new pool.

5. That Applicant desires to complete its said well as a dual completion: to produce oil from the Wolfcamp formation from the interval between 10,810 feet and 10,828 feet, and to produce gas from the Morrow formation from the interval between 12,907 feet and 13,102 feet. The said oil to be produced through 2-3/8 inch tubing set at 10,187 feet and the gas to be produced through 2-3/8 tubing set at 12,200 feet.

6. That a Baker Model K Dual Packer has been set at 10,187 feet and a Baker Model D Packer has been set at 12,200 feet.

7. That the granting of this application will avoid waste, allow the recovery of oil and gas which might not otherwise be recovered, and will not violate correlative rights.

WHEREFORE, GETTY OIL COMPANY, requests that this application be set for hearing before a duly appointed examiner of the Oil Conservation Division on February 28, 1979, that notice be given as required by law and the rules of the Division, and that the application be approved.

Respectively submitted

CAMPBELL AND BLACK, P.A.
Attorneys for Applicant
Post Office Box 2208
Santa Fe, New Mexico 87501

By William F. Carr
William F. Carr

ROUGH

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. 6467

Order No. R-5958

Application of Getty Oil Company for Pool Creation and Special Pool Rules, Lea County, New Mexico

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on February 28, 19 77, at Santa Fe, New Mexico, before Examiner BLS.

NOW, on this _____ day of _____, 19_____, 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, ~~Franklin, Aston and Fair~~ Getty Oil Company, seeks the creation of a new oil pool for ~~Strawn~~ Wolfcamp production in Lea County, New Mexico.

(3) That the applicant also seeks the promulgation of special rules for said pool, including a provision for 160-acre proration units.

(4) That the evidence presently available indicates that applicant's ~~Getty 35 State~~ Well No. 1, located in Unit K of Section 35, Township 21 South, Range 34 East, NMPM, Lea County, New Mexico, has discovered a separate common source of supply which should be designated the ~~Grama Ridge-Bone Spring~~ Pool; that the vertical limits of the pool should be the Bone Spring formation, and that the horizontal limits of said pool should be as follows:

more properly defined as the Bone Spring formation

TOWNSHIP 21 SOUTH, RANGE 34 EAST, NMPM
Section ~~S/2 NE/4~~ 35: S/2

(5) That in order to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of

risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, temporary special rules and regulations providing for 160-acre spacing units should be promulgated for the ~~South Maljamar-Strawn Pool~~ Grama Ridge-Bone Spring Pool

(6) That the temporary special rules and regulations should provide for limited well locations in order to assure orderly development of the pool and protect correlative rights.

(7) That the temporary special rules and regulations should provide for a depth bracket allowable of ~~[illegible]~~ 560 barrels.

(8) That the temporary special rules and regulations should be established for a one-year period in order to allow the operators in the subject pool to gather reservoir information to establish the area that can be efficiently and economically drained and developed by one well.

(9) That this case should be reopened at an examiner hearing in April, 1980, at which time the operators in the subject pool should be prepared to appear and show cause why the subject [illegible]wn pool should not be developed on 40-acre spacing units.

IT IS THEREFORE ORDERED:

(1) That effective April 1, 1979, a new pool in Lea County, New Mexico, classified as an oil pool for Bone Spring production, is hereby created and designated the Grama Ridge-Bone Spring [illegible] Pool, with vertical limits comprising the Bone Spring formation and horizontal limits comprising the following-described area:

TOWNSHIP 21 SOUTH, RANGE 34 EAST, NMPM
Section 35: SW/4

(2) That temporary Special Rules and Regulations for the Grama Ridge ~~Bone Spring~~ [illegible] Pool, Lea County, New Mexico, are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE Grama Ridge - Bone ~~Spring~~ [illegible] Pool

RULE 1. Each well completed or recompleted in the Grama Ridge-Bone Spring [illegible] Pool or in the Bone Spring formation within one mile of the Grama Ridge ~~Bone Spring~~ [illegible] Pool, and not nearer to nor within the limits of another designated Bone Spring pool, shall be spaced, drilled, operated, and prorated in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well completed or recompleted in the Grama Ridge Bone ~~Spring~~ [illegible] Pool shall be located on a unit containing 160-

acres, more or less, substantially in the form of a square, which is a quarter section being a legal subdivision of the United States Public Lands Survey.

RULE 3. Each well completed or recompleted in said pool shall not be drilled closer than 660 feet to any quarter section line nor closer than 330 feet to any quarter-quarter section line.

RULE 4. For good cause shown, the ~~Secretary~~ Director ~~of the Commission~~ may grant an exception to the requirements of Rule 2 without notice and hearing when the application is for a non-standard unit comprising less than 160 acres. All operators offsetting the proposed non-standard unit shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The ~~Secretary~~ Director ~~of the Commission~~ may approve the application if, after a period of 30 days, no offset operator has entered an objection to the formation of such non-standard unit.

The allowable assigned to any such non-standard unit shall bear the same ratio to a standard allowable in the ~~South Maljamar-Strawn~~ Pool as the acreage in such non-standard unit bears to 160 acres.

RULE 5. A standard proration unit (158 through 162 acres) in the ~~Grama Ridge-Bone Spring~~ Pool shall be assigned a depth bracket allowable of 560 barrels, subject to the market demand percentage factor, and in the event there is more than one well on a 160-acre proration unit, the operator may produce the allowable assigned to the unit in any proportion.

IT IS FURTHER ORDERED:

(3) That the locations of all wells presently drilling to or completed in the ~~Grama Ridge-Bone Spring~~ Pool or in the Bone Spring formation within one mile thereof are hereby approved; that the operator of any well having an unorthodox location shall notify the Hobbs district office of the ~~Division~~ in writing of the name and location of the well on or before June 1, 1978.

(4) That, pursuant to Paragraph A. of Section 70-2-18 NMSA 1978, contained in Chapter 271, Laws of 1969, existing wells in the ~~Grama Ridge-Bone Spring~~ Pool shall have dedicated thereto 160 acres in accordance with the foregoing pool rules; or, pursuant to Paragraph C. of said Section 70-2-18, existing wells may have non-standard spacing or proration units established by the ~~Commission~~ Division and dedicated thereto.

Failure to file new Forms C-102 with the Division dedicating 160 acres to a well or to obtain a non-standard unit approved by the ~~Commission~~ Division within 60 days from the date of this order shall subject the well to cancellation of allowable. Until said Form C-102 has been filed or until a non-standard unit

has been approved, and subject to said 60-day limitation, each well presently drilling to or completed in the ~~South Maljamar-Strawn~~ Grama Ridge-Bone Spring Pool or in the ~~Strawn~~ Bone Spring formation within one mile thereof shall receive no more than one-~~half~~ quarter of a standard allowable for the pool.

(5) That this case shall be reopened at an examiner hearing in April, 1980, at which time the operators in the subject pool should be prepared to appear and show cause why the ~~South Maljamar-Strawn~~ Grama Ridge-Bone Spring Pool should not be developed on 40-acre spacing units.

(6) 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

PHIL R. LUCERO, Chairman

EMERY C. ARNOLD, Member

JOE D. RAMEY, Member & Secretary

S E A L

jr/

Getty 35 State well No. 1
~~Dual completion~~
K-35-21S-34E
Special Pool Rules
160-acre oil
spacing in WC

creation
Wolfcamp

Application of Getty Oil Co
for pool creation and
special pool rules, Lea
County NM
Applicant in the
above-styled cause seeks

Wolfcamp oil pool
special rules - 160-acre ~~pro~~ spacing

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:

CASE NO. 6467

Order No. R- 5958-A

IN THE MATTER OF CASE 6467 BEING REOPENED PURSUANT TO THE PROVISIONS OF ORDER NO. R- 5958, WHICH ORDER ESTABLISHED SPECIAL RULES AND REGULATIONS FOR THE GRAMA RIDGE-BONE SPRING ~~GAS~~ POOL, LEA COUNTY, NEW MEXICO, INCLUDING A PROVISION FOR 160 -ACRE PRORATION UNITS.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on April 23, 1980, at Santa Fe, New Mexico, before Examiner Richard L. Stamets

NOW, on this _____ day of _____, 1980, 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 by Order No. R-5958, dated March 30, 1979, temporary special rules and regulations were promulgated for the Grama Ridge-Bone Spring ~~Gas~~ Pool, Lea County, New Mexico, establishing temporary 160 -acre spacing units.

(3) That pursuant to the provisions of Order No. R-5958, this case was reopened to allow the operators in the subject pool to appear and show cause why the Grama Ridge-Bone Spring ~~XXXX~~ Pool should not be developed on 40 -acre spacing units.

(4) That the evidence establishes that one well in the Grama Ridge-Bone Spring ~~XXXX~~ Pool can efficiently and economically drain and develop 160 acres.

(5) That the Special Rules and Regulations promulgated by Order No. R-5958 have afforded and will afford to the owner of each property in the pool the opportunity to produce his just and equitable share of the ~~gas~~ oil in the pool.

(6) That in order to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, the Special Rules and Regulations promulgated by Order No. R-5958 should be continued in full force and effect until further order of the ~~Commission.~~ Division

IT IS THEREFORE ORDERED:

(1) That the Special Rules and Regulations governing the Grama Ridge-Bone Spring ~~xx Gas~~ Pool, Lea County, New Mexico, promulgated by Order No. R-5958, are hereby continued in full force and effect until further order of the Division.

(2) 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.