CASE 5644: TENNECO OIL COPORATION FOR DOWNHOLE COMMINGLING, SAN JUAN COUNTY, NEW MEXICO

Oct 2
Cont

Case Number

6644

Application

Transcripts.

Small Exhibits

ETC.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
Oil Conservation Division
State Land Office Bldg.
Santa Fe, New Mexico
2 October 1979

EXAMINER HEARING

IN THE MATTER OF:

Application of Tenneco Oil Corpcration for downhole commingling, San Juan County, New Mexico. — CASE 6674

and

Application of Tennoco Oil Corporation for downhole commingling, San Juan County, New Mexico. — CASE 6644

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 for the Division
State Land Office Bldg.
Santa Fe, New Mexico 87503

For The Applicant: W. Thomas Kellahin, Esq.
KELLAHIN & KELLAHIN
500 Don Gaspar
Santa Fe, New Mexico 87501

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
1010 Plaza Blanca (505) 471-2463
Santa Fe, New Mexico 87501

I N D E X

ROY LONG

E X H I B I T S

MR. STAMETS: We will call next Case 6674.

MR. PADILLA: Application of Tenneco Oil Corporation for downhole commingling, San Juan County, New Mexico.

MR. KELLAHIN: If the Examiner please, I'm Tom Kellahin from Santa Fe, New Mexico, appearing on behalf of the applicant. I have one witness to be sworn.

We'd like to consolidate Case 6674 with Case 6644 for purposes of the testimony.

MR. STAMETS: Let's call that next case, Ernie.

MR. PADILLA: Application of Tenneco Oil Corporation for downhole commingling, San Juan County, New Mexico.

MR. STAMETS: Are there any other appearances in these two cases?

I'd like to have the witness stand and be sworn, please.

(Witness sworn.)

ROY LONG

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Would you please state your name, by whom you're employed, and in what capacity?

A. My name is Roy Long. I'm employed by Tenneco Oil Company, the Rocky Mountain Division. in Denver, Colorado, and I'm employed as a production engineer with that company.

Q. Mr. Long, have you previously testified before the Oil Conservation Division?

A. No, sir.

Q. Would you tell the Examiner when and where you obtained your degree?

A. I have a degree in general engineering from the U.S. Air Force Academy. I have all prerequisite requirements for a Master of Engineering from the Colorado School of Mines in Golden, Colorado. I'm currently working part time on completion of my thesis there.

Q. When did you obtain your degree?

A. My degree was in 1970.

Q. Subsequent to graduation where have you been employed as a production engineer?

A. Strictly with Tenneco for approximately two years now.

Q. As a part of that employment, Mr. Long, have you made a study of and are you familiar with the facts surrounding this particular application?

A. Yes, sir.

MR. KELLAHIN: We tender Mr. Long as an expert witness.

MR. STAMETS: He is considered qualified.

Q. (Mr. Kellahin continuing.) Would you please refer to what we've marked as Applicant Exhibit Number One, and would you identify that?

A. Exhibit Number One is the wellbore detail to include completion histories of the wells, of all three new wells thus far.

Q. You have three wells for which you are requesting authority to downhole commingle production, is that not true?

A. Yes, sir.

Q. And we're talking about Pictured Cliffs and Fruitland production?

A. Yes, sir.

Q. Would you identify on Exhibit Number One each of those three wells by name?

A. The Florence 115, the Florence 60-R, and the State Com K-12.

Q. Let's start with the Florence 115 and have

you locate that well for us.

A. The Florence 115 is 790 feet from the south line, --

Q. Your three wells are located by what color of dot?

A. I'm sorry, they're the yellow flourescent dot.

Q. And commencing now with the Florence 115 Well, where is that well located?

A. That is 790 feet from the south line, 1025 from the west line of Section 10, 30 North, 9 West, San Juan County, New Mexico.

Q. All right, has that well been drilled?

A. Yes, sir.

Q. Was it drilled as a dual completion or a single completion?

A. It was drilled as a dual.

Q. And dual of what zones?

A. The PC and Fruitland.

Q. All right, and what's the next well?

A. The next well would be the State Com K-12. That is 1640 feet from the north line, 990 feet from the west line, Section 16, 30 North, 9 West, San Juan County, New Mexico, and on the map it's adjacent to the Florence 115.

Q. And has that well been drilled?

A. Yes, sir.

Q. And what is its status?

A. It is drilled and completed as a single -- well, correction. There was some potential in the Fruitland. It was initially intended as a single completion in the Pictured Cliffs; however, there is some Fruitland potential and that was completed.

Q. All right, now let's find the third well.

A. The third well on the map is at the bottom and it is the Florence 60-R. It's 1540 feet from the south line, 800 feet from the west line, Section 1, 29 North, 9 West, San Juan County, New Mexico.

Q. And the Florence 60-R Well, has that well been drilled?

A. Yes, sir, and completed.

Q. And as what?

A. It was initially intended as a single; however, there was some potential in the Fruitland and it was completed as such, a dual.

Q. It's a dual completion in the Fruitland and the Pictured Cliffs?

A. Yes, sir.

Q. Now what are the green dots?

A. The green dots are existing wells within roughly a two-mile radius of our wells that we have drilled.

Those wells produce either water or gas plus either oil or water, primarily water. The legend on Exhibit Four will tell you what that well is producing.

Q. We've renumbered that tabulation Exhibit Number Two.

A. Okay, Exhibit Number Two.

Q. And what is Exhibit Number Two?

A. Exhibit Number Two is the legend for the map. If you'll notice on the map, each number, each dot has a number. The number can be found on the legend in reference of increasing number, telling who the operator is, the formation that the well is completed in, and the average 1978 fluid production from that well, and whether it was oil or water.

Q. What's the significance of the red dots?

A. The red dots are again existing wells which are within a 2-mile radius of the wells that we have drilled, which according to the 1978 production book of the State of New Mexico, produce only gas.

Q. Now you're proposing to downhole commingle production in the Fruitland and Pictured Cliffs in all three wells.

A. Yes, we are.

Q. All right. What, if any, problems do you have with the encroachment of water or fluids?

SALLY WALTON BOYD
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A. Primarily on the Pictured Cliffs wells, since they are relatively marginal producers, you generally don't have sufficient rate to carry the fluids out of the wellbore. The worst case would be water. That's the most difficult to carry out of the wellbore under line pressure and the well will load up with water, consequently, the production from the well will be decreased for the life of the well unless the water is either naturally or artificially unloaded.

Q. What, if any, is the advantage of the downhole commingling of production of those two zones?

A. In these particular cases where we consider them to be marginal producers once connected to pipeline, you're getting a total rate possible out of that well to allow it to carry fluids out. When at some time during the life of the well it produces some fluid, either oil or water, which we expect, you'll have the maximum capacity to carry these fluids out of the wellbore and get the most return from the well, by having that configuration.

Q. Would you refer to what we've marked as Exhibit Number Three and identify it?

A. Exhibit Number Three is the wellbore diagram and the completion detail, completion history, of the three wells.

Q. Let me ask you this, Mr. Long. Is the

ownership common between the Pictured Cliffs and the Fruitland zones for all three wells?

A. Yes, sir.

MR. STAMETS: These are all gas wells, is that correct?

A. Yes, sir.

Q. Would you go through your schematics now and summarize how you propose to commingle production for, first of all, the Florence 115 Well?

A. Okay. For the 115, as you can see, the Fruitland perforations are the top zone.

Our proposal is to install a 2-3/8ths inch string of tubing, landed in a Baker Model "F" packer, this will effectively isolate the two zones as long as the sliding sleeve is closed. Once production starts we'll open the sliding sleeve, commingle the gas rate from both zones at that point, at the point of the sliding sleeve, and from there they'll be flowed, will go to the surface, carrying, hopefully, if there's any fluids, it will carry that out, at that point.

Q. What advantage is there to using the sliding sleeve assembly?

A. You have -- it allows a number of things. It allows the point at which you can commingle the zones the way we would like to do, commingle both rates up one single

tubular, and it will provide you, if at any time you can -- all you have to do is shut the sliding sleeve and you've obtained isolation between the two zones again.

Q. In your opinion is the use of the sliding sleeve assembly adequate in order to insure that the water production out of either of the zones will not migrate into a dry gas formation?

A. Yes, sir.

Q. Let's look at the schematic for the State Com K-12 Well. How does that proposed completion differ from the Florence 115?

A. Basically they are identical completions. The only thing is, of course, the depth, but all your materials are the same, the same type of packer, the same type of sliding sleeve, and the same 2-3/8ths tubing.

Q. What kind of surface installations do you have?

A. Currently there will be one production separator and then going to a tank. This is -- let me back up a minute.

Right now there is nothing there. We're currently installing the line. At some point in time, if they do start to produce fluids, we will be putting a production separator on there with a production tank.

Q. Okay, and how about the schematic on the

Florence 60-R Well?

A. Again this is identical except for depths, and of course, completion histories are slightly different in each one. The sliding sleeve assembly, again, is the same Baker sliding sleeve assembly and the 2-3/8ths inch tubular.

Q. All right. Would you refer to Exhibit Number Four and identify that?

A. These are letters from our offset operators for the three wells in question, El Paso and Amoco, which essentially indicate that they do not object to this petition.

Q. All right, would you identify Exhibit Number Five?

A. Okay, this is our proposed production split and in addition are the AOF's attached associated with that production split. Presently we, since this is the main data we have to go on in the wells that have been tested, we propose a production split based on these AOF values.

Initially an AOF was taken on the Pictured Cliffs and then an AOF was taken on the commingled production up the tubing. The sliding sleeve was opened and you had an AOF for both zones. The production split is based on the difference between the two AOF's.

Q. Let's start with this Florence 60-R Well, Mr. Long. Your exhibit indicates absolute open flow test on the Pictured Cliffs of 669 pounds. Is that a --

A. I'm sorry, this is Mcf per day.

Q. Oh, I'm sorry. Okay, that's the production rate.

A. Yes, sir.

Q. All right, and you have a commingled production rate of 627.

A. Yes, sir. If you'll notice the comment at the bottom, the well is currently being retested The problem that we had initially with this well was that no matter how much we blowed it trying to clean up after frac, that it still produced water, and we thought that this zone was formation water initially. Subsequently, however, this zone has dried up. But during the time of the initial AOF test, that reduced AOF that you see is due to the fluid loading coming from the Fruitland when the wells were commingled. Consequently, we went to get a water sample at a later date, we could not get one because the well had dried up at that point. So we're currently in the process of retesting and we'll resubmit that test, AOF test, for the proposed production split at a later date.

Q. Let me ask you this, Mr. Long: Is the gas produced from the Pictured Cliffs and the Fruitland formations compatible?

A. Yes, sir, they're both roughly .65 gravity gas and roughly 1000 BTU.

Q. All right. Let's look at your proposed production split on the Florence 115 Well.

A. Again, this was done in the same manner. The proposed split is 41 percent for the Pictured Cliffs and 59 percent for the Fruitland. Again, this is simply based on the difference in the two AOF values that we got off of this well.

Q. And lastly, the State Com K-12 Well?

A. The same procedure was applied here. The difference in rates, the Fruitland on this was simply a weak zone. The majority of production will come from the Pictured Cliffs with only a very small amount from the Fruitland. It had a very weak blow during completion.

Q. Okay. Would you go through the rest of Exhibit Number Five and summarize for us the information contained on Form C-112 for each of these wells?

A. Yes, sir. These are the -- from the top going down, you have the AOF taken on the Florence 115 by itself. That AOF was 637 Mcf per day, and I notice, I'm sorry, there's a typographical error on our proposed production split. That 630 -- should be 637 instead of 635, but the percentages shouldn't change there.

And then just below that you have the commingled AOF on the Florence 115 for both Pictured Cliffs and Fruitland of 1562.

The next one is the State Com K-12 AOF of 1016 on the Pictured Cliffs by itself. Beneath that is again the State Com K-12 commingled Pictured Cliffs and Fruitland AOF for 1060, and of course the last one is the Pictured Cliffs AOF on the Florence 60-R. That initial AOF taken from the PC zone should still be good, the 669, however we are retesting the commingled because the water was coming from the Fruitland, but we believe this is a good test.

Q For each of the three wells to be commingled, Mr. Long, would you give us what the approximate pressure differential will be for each of the wells?

A. Yes, sir, in the case of the Florence 115, if you look at the initial, the Pictured Cliffs zone, this was taken when the sliding sleeve was shut and the tubing pressure is the PC pressure and casing pressure, of course, would be the Fruitland. In that particular case you have almost identical pressures between the Pictured Cliffs and the Fruitland formations, and that is 1000 pounds.

On the State Com K-12, if you look at the Pictured Cliffs AOF, again you have a slight differential between the two zones. The tubing pressure is 395. The casing is 795.

And the last one, of course, is the Florence 60-R. The Pictured Cliffs single, your tubing pressure is 625; the casing pressure is 390, and those would be indicative

of your pressure differentials between the two zones.

The only significant differential you have is in the State Com K-12 and the 60-R. Some 400 pounds in the case of the K-12 and some 200, a little over 200 pounds, in the 60-R.

Q. Is there any production history from any of the zones in any of the three wells?

A. Not to this point. They haven't been connected to pipeline.

Q. In your opinion is the engineering of the well adequate to insure there will be no problems because of the pressure differential encountered in any of these wells?

A. Yes, sir.

Q. In your opinion are all the proposed zones of commingling in all three wells economically marginal?

A. Yes, sir.

Q. In your opinion is the downhole commingling necessary in order to recover gas that would not otherwise be recovered?

A. Yes, sir.

Q. In your opinion is the proposed application in the best interests of conservation, the prevention of waste, and the protection of correlative rights?

A. Yes, sir.

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

A. Yes, sir.

MR. KELLAHIN: We move the introduction of Exhibits One through Five.

MR. STAMETS: These exhibits will be admitted.

CROSS EXAMINATION

BY MR. STAMETS:

Q. Mr. Long, in the two cases where there is a pressure differential, it appears as though it is the Fruitland pressure that is the higher of the two, is that right?

A. Well, sir, in the case of the State Com K-12 the Fruitland pressure is higher than the PC; however, in the case of the 60-R it is just reversed, the PC is higher than the Fruitland.

Q. Could the difference in pressures there with the Fruitland being lower be as a result of the gas -- or not the gas, the water that was in the formation?

A. Well, sir, in these particular cases they are all relatively dry at this time. The wells were blown prior to landing the tubing. The only significant additional water production we had was out of the 115, and that's the

one that's currently being retested.

Yes, sir, there is a possibility that there could have been fluid loading on the back side, but in those particular cases I don't think it was significant.

Q. I thought you indicated that the 60-R was the one --

A. I'm sorry.

Q. -- being retested?

A. Yes, sir, the 60-R is being retested.

Q. So in that light is the pressure differential --

A. Yes, sir, on the 60-R that is highly -- that is probably what the --

Q. That's probably the water.

A. Yes, sir.

Q. Because this 669 is the test that you took before you commingled.

A. Yes, sir.

Q. Okay.

A. That is water.

Q. Now, looking at the other tests, and going back to Exhibit Number Five, does it indicate to you that the Fruitland is the predominant zone in either of those two wells as far as production is concerned?

A. On which two wells, sir?

Q. The Florence 115 and the State Com K-12.

A. In the 115 the Fruitland appears slightly stronger than the Pictured Cliffs. We had an unusually thick section of Fruitland in there and I think that's the primary reason, is that it is probably just a little bit better developed in that particular location than the Pictured Cliffs.

Q. What's the standard method of production of these wells in there? Are they turned on and off daily, monthly? Are they allowed to flow to the pipeline at all times?

A. Yes, sir, they're generally allowed to flow to the pipeline at all times except during the periods that we have state tests for the deliverability, or whatever.

MR. STAMETS: Are there other questions of this witness?

Q. (Mr. Stamets continuing.) Mr. Long, looking at Exhibit Number Two, it would appear that the Fruitland does not produce any water in any of the wells that were treated and shown on your exhibit.

A. Well, sir, the majority of the wells in this particular area are Pictured Cliffs wells. There are, however, a few of them that do produce oil and water, and those are listed toward the end. For example, starting with Well No. 122, which is the Florence 106 Tenneco Well,

correction, make that 122, it's a Pictured Cliffs - Fruitland formation, there is some oil coming out of that zone out of the Fruitland, not from the Pictured Cliffs. But the majority of the wells that are listed in this exhibit are primarily Pictured Cliffs wells, Pictured Cliffs singles. The duals are towards the end.

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

Anything further in this case?

The case will be taken under advisement.

(Hearing concluded.)

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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, from my notes taken at the time of the hearing.

Sally W. Boyd, C.S.R.

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

_____, Examiner
Oil Conservation Division

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

November 7, 1979

Mr. J. M. Lacey
Tenneco Oil Company
Galleria Building
720 South Colorado Blvd
Denver, Colorado 80222

Re: Order R-6154
Downhole Commingling
Tenneco Oil Company
Florance #60R
L-1-29N-9W

Dear Mr. Lacey:

We agree with your data of October 26 for a production split of the captioned well as follows:

Fruitland - 23% of all gas produced
Pictured Cliffs - 77% of all gas produced; 100% of all oil produced

If there are questions, please contact us.

Yours very truly,

A. R. Kendrick
District Supervisor

xc: Oil Conservation Division, Santa Fe
Gas Transporter - El Paso Natural Gas Company
Oil Transporter - Giant Refining Company
Reading file

ARK:no

Tenneco Oil
A Tenneco Company

Penthouse
720 South Colorado Blvd
Denver, Colorado 80222
(303) 758-7130

October 26, 1979

State of New Mexico
Bureau of Mines & Mineral Resources
Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87401

Attention: Mr. A. R. Kendrick

Re: Commingling Order R-6154

Gentlemen:

We propose the following production splits for the commingled wellbores listed below:

	AOF, (MCFD)		Production Split, %	
	Pictured Cliffs	Commingled	Pictured Cliffs	Fruitland
Florance 60R L 1-29N-9W San Juan County, N.M.	669	873	77	23
State Com K-12 G 16-30N-9W San Juan County, N.M.	1016	1060	96	4.

Attached for your perusal are NMOCC forms C-122 for these wells.

Yours very truly,

TENNECO OIL COMPANY

J. M. Lacey
Division Production Manager

HUML:BWF:vv
Attachments

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OIL CON. COM.
DIST. 3

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test: [X] Initial [ ] Annual [ ] Special — Test Date: 9-10-79

Company: Tenneco Oil Company	Connection:	
Pool: Blanco	Formation: Pictured Cliff	Unit:
Completion Date:	Total Depth: 3208	Plug Back TD: 3150
Elevation:	Farm or Lease Name: Florance	
Csg. Size: 4 1/2 — Wt.: 10.5 — d: — Set At: 3208	Perforations: From 3078 To 3099	Well No.: 60R
Tbg. Size: 2 3/8 — Wt.: — d: — Set At: 3070	Perforations: From 3019 To 3024	Unit: I — Sec.: 1 — Twp.: 29N — Rge.: 9W
Type Well – Single – Bradenhead – G.C. or G.O. Multiple	Packer Set At: 3070	County: San Juan
Producing Thru:	Reservoir Temp. °F:	Mean Annual Temp. °F:	Baro. Press. – P_a:	State: New Mexico
L:	H:	Gg: .680	% CO_2:	% N_2:	% H_2S:	Prover:	Meter Run:	Taps:

	FLOW DATA				TUBING DATA		CASING DATA		
NO.	Prover Line Size	X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI						625		390		
1.	2	x 6 x .75				38	72	390	72	3 hours
2.										
3.										
4.										
5.										

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	11		50	.9887	1.213	1.00758	665
2.							
3.							
4.							
5.							

NO.	P_t	Temp. °R	T_r	Z
1.	.07	532	1.38	.985
2.				
3.				
4.				
5.				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
Critical Temperature _____ R _____ R

P_c 637 P_c^2 405769

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		50	2500	403269
2				
3				
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.0061$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = .926$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 669$

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OIL CON. COM.
DIST. 3

Absolute Open Flow 669 Mcfd @ 15.025 — Angle of Slope θ _____ — Slope, n .85

Remarks: _____

Approved By Commission:	Conducted By:	Calculated By:	Checked By:

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Revised 4-1-65

Type Test: [ ] Initial [ ] Annual [X] Special — Test Date: 10-8-79

Company: Tenneco Oil Company	Connection:	
Pool: Blanco	Formation: Pictured Cliff/Fruitland	Unit:
Completion Date:	Total Depth: 3208	Plug Back TD: 3150
Elevation:	Farm or Lease Name: Florance	
Csg. Size: 4 1/2 — Wt.: — d: — Set At: 3208	Perforations: From 3078 To 3099	Well No.: 60R
Tbg. Size: 2 3/8 — Wt.: — d: — Set At: 3070	Perforations: From 3019 To 3024	Unit: L — Sec.: 1 — Twp.: 29N — Rge.: 9W
Type Well – Single – Bradenhead – G.C. or G.O. Multiple	Packer Set At: 3070	County: San Juan
Producing Thru:	Reservoir Temp. °F:	Mean Annual Temp. °F:
Baro. Press. – P_a:	State: New Mexico	

L	H	G_g	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
		.680						

	FLOW DATA				TUBING DATA		CASING DATA		
NO.	Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI					500		555		
1.	2 x 6 x .75				52		72	66	3 hours
2.									
3.									
4.									
5.									

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor F_t	Gravity Factor F_g	Super Compress. Factor, F_{pv}	Rate of Flow Q, Mcfd
1	11		64	.9943	1.213	1.0091	857
2.							
3.							
4.							
5.							

NO.	P_t	Temp. °R	T_r	Z
1.	.10	526	1.37	.982
2.				
3.				
4.				
5.				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
Critical Temperature _____ R _____ R

P_c 567 P_c^2 321489

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		84	7056	314433
2				
3				
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.0224$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.0190$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 873$

Absolute Open Flow 873 Mcfd @ 15.025 Angle of Slope θ _____ Slope n _____

Remarks: _____

Approved By Commission:	Conducted By:	Calculated By:	Checked By:

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OIL CON. COM.
DIST. 3

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

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November 7, 1979

Mr. J. M. Lacey
Tenneco Oil Company
Galleria Building
720 South Colorado Blvd.
Denver, Colorado 80222

RECEIVED
NOV 9 - 1979
OIL CONSERVATION DIVISION
SANTA FE

Re: Order R-6154
Downhole Commingling
Tenneco Oil Company
State Com K #12
E-16-30N-9W

Dear Mr. Lacey:

We agree with your data of October 26, for a production split of the captioned well as follows:

Fruitland - 4% of all gas produced
Pictured Cliffs - 96% of all gas produced; 100% of all oil produced

If there are questions, please contact us.

Yours very truly,

A. R. Kendrick
District Supervisor

xc: Oil Conservation Division, Santa Fe
Gas Transporter - El Paso Natural Gas Company
Oil Transporter - Giant Refining Company
Reading File

ARK:no

Tenneco Oil
A Tenneco Company

Penthouse
720 South Colorado Blvd
Denver, Colorado 80222
(303) 758-7130

October 26, 1979

State of New Mexico
Bureau of Mines & Mineral Resources
Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87401

Attention: Mr. A. R. Kendrick

Re: Commingling Order R-6154

Gentlemen:

We propose the following production splits for the commingled wellbores listed below:

	AOF, (MCFD)		Production Split, %	
	Pictured Cliffs	Commingled	Pictured Cliffs	Fruitland
Florance 60R L 1-29N-9W San Juan County, N.M.	669	873	77	23
State Com K-12 G 16-30N-9W San Juan County, N.M.	1016	1060	96	4.

Attached for your perusal are NMOCC forms C-122 for these wells.

Yours very truly,

TENNECO OIL COMPANY

J. M. Lacey
Division Production Manager

JUML:BWF:vv
Attachments

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test: ☒ Initial ☐ Annual ☐ Special				Test Date: 9-10-79	
Company: Tenneco Oil Company		Connection			
Pool: Blanco		Formation: Pictured Cliff		Unit	
Completion Date: 7/10/79	Total Depth: 3100'	Plug Back TD: 3059'	Elevation	Farm or Lease Name: State Com	
Csg. Size: 4 1/2 / Wt. / d / Set At: 3097		Perforations: From 2952 To 2702		Well No.: K-12	
Tbg. Size: 1 1/4 / Wt. / d / Set At: 2940		Perforations: From To		Unit: E / Sec.: 16 / Twp.: 30N / Rge.: 9W	
Type Well – Single – Bradenhead – G.G. or G.O. Multiple		Packer Set At: 2930		County: San Juan	
Producing Thru	Reservoir Temp. °F	Mean Annual Temp. °F	Baro. Press. – P_a	State: New Mexico	

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
		.680						

	FLOW DATA				TUBING DATA		CASING DATA		
NO.	Prover Line Size	X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI						385		795		
1.	2	x 6 x .75				62	72	795	72	3 hours
2.										
3.										
4.										
5.										

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	11		74	.9887	1.213	1.0096	986
2.							
3.							
4.							
5.							

NO.	P_t	Temp. °R	T_f	Z
1.	.11	532	1.38	.981
2.				
3.				
4.				
5.				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.

A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.

Specific Gravity Separator Gas _____ XXXXXXXXX

Specific Gravity Flowing Fluid XXXXX _____

Critical Pressure _____ P.S.I.A. _____ P.S.I.A.

Critical Temperature _____ R _____ R

P_c 397 P_c^2 157609

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		74	5476	152133
2				
3				
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.0359$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.0305$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1016$

Absolute Open Flow 1016 Mcfd @ 15.025 Angle of Slope θ _____ Slope, n .85

Remarks _____

Approved By Commission	Conducted By	Calculated By	Checked By

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NOV 2 1979
OIL CON. COM.
DIST. 3

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Revised 2-1-65

Type Test: [ ] Initial [ ] Annual [X] Special — Test Date: 9-18-79

Company: Tenneco Oil Company	Connection		
Pool: Blanco	Formation: Pictured Cliff/Fruitland		Unit
Completion Date: 7/10/79	Total Depth: 3100'	Plug Back TD: 3059'	Elevation
Farm or Lease Name: State Com K			
Csg. Size: 4 1/2" / Wt. / d / Set At: 3097	Perforations: From 2952 To 2702		Well No.: 12
Tbg. Size: 1 1/4" / Wt. / d / Set At: 2940	Perforations: From 2938 To 2952		Unit: E / Sec.: 16 / Twp.: 30N / Rge.: 9W
Type Well – Single – Bradenhead – G.C. or G.O. Multiple	Packer Set At: 2930		County: San Juan
Producing Thru	Reservoir Temp. °F	Mean Annual Temp. °F	Baro. Press. – P_a
State: New Mexico			

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
		.680						

	FLOW DATA				TUBING DATA		CASING DATA		
NO.	Prover Line Size	X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI						380		820		
1.	2 x 6 x .75					65	72	172	72	3 hours
2.										
3.										
4.										
5.										

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	11		77	.9887	1.213	1.0096	1026
2.							
3.							
4.							
5.							

NO.	P_t	Temp. °R	T_r	Z
1.	.12	532	1.38	.981
2.				
3.				
4.				
5.				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
Critical Temperature _____ R _____ R

P_c 392 P_c^2 153664

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		77	5929	147735
2				
3				
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.040$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.0340$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1060$

Absolute Open Flow 1060 Mcfd @ 15.025 Angle of Slope θ 85

Remarks:

RECEIVED
NOV 2 1979
OIL CON. COM.
DIST. 3

Approved By Commission	Conducted By:	Calculated By:	Checked By:

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

October 18, 1979

Re: CASE NO. 6644
ORDER NO. R-6154

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

Applicant:

Tenneco Oil Corporation

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 x

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. 6644
Order No. R-6154

APPLICATION OF TENNECO OIL CORPORATION FOR DOWNHOLE COMMINGLING, SAN JUAN COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on October 2, 1979, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 18th day of October, 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, Tenneco Oil Corporation, is the owner and operator of the State K Com Well No. 12, located in Unit E of Section 16, Township 30 North, Range 9 West, NMPM, and its Florence Well No. 60R in Unit L of Section 1, Township 29 North, Range 9 West, San Juan County, New Mexico.

(3) That the applicant seeks authority to commingle Fruitland and Pictured Cliffs production within the wellbore of each of the above-described wells.

(4) That from the Fruitland zone, the subject wells are capable of low rates of production only.

(5) That from the Pictured Cliffs zone, the subject wells are capable of low rates of production only.

(6) That the proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not violate correlative rights.

(7) That the reservoir characteristics of each of the subject zones are such that underground waste would not be caused by the proposed commingling provided that the wells are not shut-in for an extended period.

(8) That to afford the Division the opportunity to assess the potential for waste and to expeditiously order appropriate remedial action, the operator should notify the Aztec district office of the Division any time either of the subject wells is shut-in for 7 consecutive days.

(9) That in order to allocate the commingled production to each of the commingled zones in said wells, applicant should consult with the supervisor of the Aztec district office of the Division and determine an allocation formula for each of the production zones.

IT IS THEREFORE ORDERED:

(1) That the applicant, Tenneco Oil Corporation, is hereby authorized to commingle Fruitland and Pictured Cliffs production within the wellbores of its State K Com Well No. 12, located in Unit E of Section 16, Township 30 North, Range 9 West, NMPM, and the Florence Well No. 60R in Unit L of Section 1, Township 29 North, Range 9 West, NMPM, San Juan County, New Mexico.

(2) That the applicant shall consult with the Supervisor of the Aztec district office of the Division and determine an allocation formula for the allocation of production to each zone in each of the subject wells.

(3) That the operator of the subject wells shall immediately notify the Division's Aztec district office any time either well has been shut-in for 7 consecutive days and shall concurrently present, to the Division, a plan for remedial action.

(4) 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/

CASE 6644: (Continued from September 19, 1979, Examiner Hearing)

Application of Tenneco Oil Corporation for downhole commingling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Fruitland and Pictured Cliffs production in the wellbores of its State K Com Well No. 12 located in Unit E of Section 16, Township 30 North, Range 9 West, and its Florence Well No. 60R in Unit L of Section 1, Township 29 North, Range 9 West.

CASE 6675: Application of Gifford, Mitchell & Wisenbaker for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Pawnee Unit Area, comprising 3,840 acres, more or less, of State and federal lands in Township 26 South, Range 36 East.

CASE 6671: (Continued from September 19, 1979, Examiner Hearing)

Application of Chapman and Schneider for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in the Seven Rivers Reef formation in the open-hole interval from 3422 feet to 3504 feet in its I. B. Ogg "A" Well No. 3 located in Unit E of Section 35, Township 24 South, Range 36 East, Jalmat Pool.

CASE 6676: Application of Doyle Hartman for an unorthodox well location and a non-standard proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of an 80-acre non-standard gas proration unit comprising the SW/4 NE/4 and SE/4 NW/4 of Section 36, Township 24 South, Range 36 East, Jalmat Gas Pool, to be dedicated to a well to be drilled at an unorthodox location 2310 feet from the North line and 1650 feet from the East line of said Section 36.

CASE 6677: Application of Texas Pacific Oil Company, Inc. for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Arrowhead-Grayburg and Eumont production in the wellbore of its Elliott B-6 Well No. 1 located in Unit M of Section 6, Township 22 South, Range 37 East.

CASE 6678: Application of Texas Pacific Oil Company, Inc. for downhole commingling and a special casinghead gas allowable, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Blinebry and Tubb production in the wellbore of its Eva Owens Well No. 1 located in Unit M of Section 25, Township 21 South, Range 37 East. Applicant further seeks an increase in the casinghead gas allowable for said well.

CASE 6660: (Continued from September 19, 1979, Examiner Hearing)

Application of B. & W. Oil Reclaiming for an oil treating plant permit, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority for the construction and operation of an oil treating plant for the purpose of treating and reclaiming sediment oil at a site in the NE/4 NE/4 NE/4 of Section 34, Township 18 South, Range 26 East.

CASE 6679: Application of El Paso Natural Gas Company for a gas storage unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Washington Ranch Morrow Unit Area comprising the Morrow formation and the first 100 feet immediately above and below said formation underlying all or parts of Sections 21 thru 23, 26 thru 29, and 32 thru 36, Township 25 South, Range 24 East; Sections 1 thru 5 and 9 thru 14, Township 26 South, Range 24 East; and Sections 6, 7, and 18, Township 26 South, Range 25 East, Washington Ranch-Morrow Gas Pool, Eddy County, New Mexico. Said unit area would be for the purpose of conducting a gas storage project and would comprise 12,158 acres, more or less, of State, federal and fee lands.

CASE 6630: (Continued from August 22, 1979, Examiner Hearing)

Application of El Paso Natural Gas Company for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Basin-Dakota and BS Mesa-Gallup production in the wellbore of its San Juan 27-4 Unit Well No. 37 located in Unit N of Section 33, Township 27 North, Range 4 West.

CASE 6680: Application of Robert C. Anderson for surface commingling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the surface commingling of all production from his Ute Mountain Ute Lease, Wells Nos. 1, 3 and 4, located in Section 14, Township 31 North, Range 16 West.

CASE 6681: Application of Yates Petroleum Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a Wolfcamp-Mississippian test well to be located 660 feet from the South line and 1100 feet from the West line of Section 31, Township 18 South, Range 26 East, the S/2 of said Section 31 to be dedicated to the well.

MAP LEGEND
PC/FRUITLAND

WELL	LOCATION	OPERATOR	FORMATION	WELL NO.	1978 WATER PRODUCTION (BBLS)	AVERAGE MONTHLY PRODUCTION (BBLS/MO)
Cole Gas Com B 1	1O Sec.15, T29N-R9W	Amoco	Pictured Cliffs	1	9	0.75
H.G. Cole 1	1N Sec.15, T29N-R9W	Amoco	Pictured Cliffs	2	31	2.58
Elliot Gas Com "J1"	1C Sec.34, T30N-R9W	Amoco	Pictured Cliffs	3	18	1.50
Elliot Gas Com "K" 1	1O Sec.26, T30N-R9W	Amoco	Pictured Cliffs	4	16	1.33
Elliot Gas Com "T" 1	1B Sec.26, T30N-R9W	Amoco	Pictured Cliffs	5	19	1.58
Elliot Gas Com "W" 1	1H Sec. 9, T30N-R9W	Amoco	Pictured Cliffs	6	0	0
A.L. Elliot "A" 3	3A Sec.11, T29N-R9W	Amoco	Pictured Cliffs	7	0	0
A.L. Elliot "B" 3	3D Sec.10, T29N-R9W	Amoco	Pictured Cliffs	8	15	1.25
A.L. Elliot "B" 4	4P Sec.10, T29N-R9W	Amoco	Pictured Cliffs	9	26	2.17
A.L. Elliot "B" 7	7L Sec.10, T29N-R9W	Amoco	Pictured Cliffs	10	5	0.42
A.L. Elliot "C" 2	2E Sec.15, T29N-R9W	Amoco	Pictured Cliffs	11	6	0.50
A.L. Elliot "C" 3	3B Sec.15, T29N-R9W	Amoco	Pictured Cliffs	12	4	0.33
A.L. Elliot "D" 3	3F Sec.12, T29N-R9W	Amoco	Pictured Cliffs	13	26	2.17
A.L. Elliot "D" 4	4I Sec.11, T29N-R9W	Amoco	Pictured Cliffs	14	12	1.00
A.L. Elliot "D" 5	5K Sec.12, T29N-R9W	Amoco	Pictured Cliffs	15	1	1/12
A.L. Elliot "D" 6	6E Sec.13, T29N-R9W	Amoco	Pictured Cliffs	16	2	2/12
A.L. Elliot "D" 7	7K Sec 11, T29N-R9W	Amoco	Pictured Cliffs	17	0	0
A.L. Elliot "E" 1	1D Sec.14, T29N-R9W	Amoco	Pictured Cliffs	18	6 (6 Mo.Prod)	1.00
E.E. Elliot "A" 2	2P Sec.15, T30N-R9W	Amoco	Pictured Cliffs	19	42	3.5
E.E. Elliot "A" 3	3L Sec.15, T30N-R9W	Amoco	Pictured Cliffs	20	16	1.33
E.E. Elliot "B" 4	4P Sec.27, T30N-R9W	Amoco	Pictured Cliffs	21	17	1.42
E.E. Elliot "B" 5	5E Sec.26, T31N-R9W	Amoco	Pictured Cliffs	22	19	1.58
E.E. Elliot "B" 6	6F Sec.27, T30N-R9W	Amoco	Pictured Cliffs	23	12	1.00
E.E. Elliot "B" 10	10A Sec.27, T30N-R9W	Amoco	Pictured Cliffs	24	12	1.00
E.E. Elliot "B" 11	11K Sec.26, T30N-R9W	Amoco	Pictured Cliffs	25	20	1.67
E.E. Elliot "B" 12	12N Sec.27, T30N-R9W	Amoco	Pictured Cliffs	26	13	1.08
E.E. Elliot "B" 13	13B Sec.34, T30N-R9W	Amoco	Pictured Cliffs	27	19	1.58
E.E. Elliot "C" 2	2F Sec. 9, T31N-R9W	Amoco	Pictured Cliffs	28	9	0.75

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
Tenneco EXHIBIT NO. 2
CASE NO. 6674 & 6675
Submitted by
Hearing Date 2 OCT 79

MAP LEGEND
PC/FRUITLAND
PAGE TWO.....

WELL	LOCATION	OPERATOR	FORMATION	WELL NO.	1978 WATER PRODUCTION (BBLS)	AVERAGE MONTHLY PRODUCTION (BBLS/MO)
Likins Gas Com "A" 2	2J Sec.34, T30N-R9W	Amoco	Pictured Cliffs	29	41	3.42
Likins Gas Com "A" 4	4L Sec.34, T30N-R9W	Amoco	Pictured Cliffs	30	8	0.67
Lobato Gas Com "B" 1X	1E Sec. 2, T29N-R9W	Amoco	Pictured Cliffs	31	8	0.67
Lobato Gas Com "C" 1	1H Sec. 3, T29N-R9W	Amoco	Pictured Cliffs	32	7	0.58
Lobato Gas Com "D" 1	1D Sec. 3, T29N-R9W	Amoco	Pictured Cliffs	31	12	1.0
Lobato Gas Com "F" 1	1B Sec.35, T30N-R9W	Amoco	Pictured Cliffs	34	13	1.08
Lobato Gas Com "H" 1	1L Sec. 3, T29N-R9W	Amoco	Pictured Cliffs	35	25	2.08
Sandoval Gas Com B 1	1D Sec.35, T30N-R9W	Amoco	Pictured Cliffs	36	13	1.08
Dennis A.Shane USA #1	1N Sec.14, T29N-R9W	Amoco	Pictured Cliffs	37	0	0
John F. Shaw #1	1B Sec.14, T30N-R9W	Amoco	Pictured Cliffs	38	20	1.67
Shaw Gas Com "E" 1	1D Sec.14, T30N-R9W	Amoco	Pictured Cliffs	39	16	1.33
State Gas Com "BM" 1	1H Sec. 2, T29N-R9W	Amoco	Pictured Cliffs	40	9	0.75
State Gas Com "Y" 1	1O Sec. 2, T29N-R9W	Amoco	Pictured Cliffs	41	5	0.42
Ulibarri Gas Com 2	2O Sec.35, T30N-R9W	Amoco	Pictured Cliffs	42	21	1.75
Ulibarri Gas Com 4	4N Sec.35, T30N-R9W	Amoco	Pictured Cliffs	43	13	1.08
Day 4	4C Sec.18, T29N-R8W	El Paso	Pictured Cliffs	44	0	0
Day 5	5F Sec.18, T29N-R8W	El Paso	Pictured Cliffs	45	0	0
Day 6	6D Sec.17, T29N-R8W	El Paso	Pictured Cliffs	46	0	0
Day 7	7K Sec.17, T29N-R8W	El Paso	Pictured Cliffs	47	0	0
Day A 6	6A Sec. 7, T29N-R8W	El Paso	Pictured Cliffs	48	0	0
Day A 7	7P Sec. 7, T29N-R8W	El Paso	Pictured Cliffs	49	0	0
Day A 8	8G Sec. 8, T29N-R8W	El Paso	Pictured Cliffs	50	0	0
Day A 9	9E Sec. 8, T29N-R8W	El Paso	Pictured Cliffs	51	0	0
Day A 10	10J Sec.18, T29N-R8W	El Paso	Pictured Cliffs	52	0	0
Day A 12	12A Sec.18, T29N-R8W	El Paso	Pictured Cliffs	53	0	0
Day A 13	13N Sec. 8, T29N-R8W	El Paso	Pictured Cliffs	54	0	0
Day A 14	14C Sec.17, T29N-R8W	El Paso	Pictured Cliffs	55	0	0
Day A 15	15I Sec.17, T29N-R8W	El Paso	Pictured Cliffs	56	0	0

MAP LEGEND
PC/FRUITLAND
PAGE THREE.....

WELL	LOCATION	OPERATOR	FORMATION	WELL NO.	1978 WATER PRODUCTION (BBLS)	AVERAGE MONTHLY PRODUCTION (BBLS/MO)
Day A 16	16J Sec. 8, T29N-R8W	El Paso	Pictured Cliffs	57	0	0
Day A 17	17C Sec. 7, T29N-R8W	El Paso	Pictured Cliffs	58	0	0
Duff 3	3M Sec. 9, T30N-R9W	El Paso	Pictured Cliffs	59	0	0
EPNG Com "E" 6	6L Sec. 2, T29N-R9W	El Paso	Pictured Cliffs	60	0	0
Feuille 2	2A Sec.13, T29N-R9W	El Paso	Pictured Cliffs	61	0	0
Florance 3	3M Sec.21, T30N-R9W	El Paso	Pictured Cliffs	62	0	0
Florance 8	8C Sec.20, T30N-R9W	El Paso	Pictured Cliffs	63	0	0
Florance "B" 1	1N Sec.20, T30N-R9W	El Paso	Pictured Cliffs	64	0	0
Guede 3	3I Sec 29, T30N-R9W	El Paso	Pictured Cliffs	65	Oil 37	3.08
Howell 5	5N Sec 31, T30N-R8W	El Paso	Pictured Cliffs	66	0	0
Howell "E" 3	3L Sec.29, T30N-R8W	El Paso	Pictured Cliffs	67	Oil 133	11.08
Lawson 2	2B Sec.25, T30N-R9W	El Paso	Pictured Cliffs	68	0	0
Mansfield 5	5E Sec.28, T30N-R9W	El Paso	Pictured Cliffs	69	0	0
Mansfield 6	6C Sec.29, T30N-R9W	El Paso	Pictured Cliffs	70	Oil 379	31.58
Mansfield 7	7K Sec.29, T30N-R9W	El Paso	Pictured Cliffs	71	0	0
Mansfield 10	10K Sec.19, T30N-R9W	El Paso	Pictured Cliffs	72	0	0
Mansfield 12	12H Sec.29, T30N-R9W	El Paso	Pictured Cliffs	73	0	0
Pierce 4	4G Sec. 8, T30N-R9W	El Paso	Pictured Cliffs	74	0	0
Pierce 5	5F Sec.17, T30N-R9W	El Paso	Pictured Cliffs	75	Oil 76	6.33
Pierce 6	6G Sec.17, T30N-R9W	El Paso	Pictured Cliffs	76	0	0
Pierce 7	7G Sec. 7, T30N-R9W	El Paso	Pictured Cliffs	77	523	43.58 ✓
Pierce 8	8O Sec. 8, T30N-R9W	El Paso	Pictured Cliffs	78	0	0
Pierce 9	9F Sec. 7, T30N-R9W	El Paso	Pictured Cliffs	79	246	20.50
Quigley 2	2K Sec. 6, T30N-R9W	El Paso	Pictured Cliffs	80	87	7.25
Riddle "A" 4	4A Sec. 1, T29N-R9W	El Paso	Pictured Cliffs	81	0	0 ✓
Riddle "A" 5	5O Sec. 1, T29N-R9W	El Paso	Pictured Cliffs	82	92	30.67 ✓
Riddle "A" 8	8D Sec.24, T30N-R9W	El Paso	Pictured Cliffs	83	0	0
Riddle "A" 9	9M Sec.24, T30N-R9W	El Paso	Pictured Cliffs	84	0	0
Sunray 3	3E Sec. 5, T29N-R8W	El Paso	Pictured Cliffs	85	0	0
Sunray 4	4M Sec. 5, T29N-R8W	El Paso	Pictured Cliffs	86	0	0

MAP LEGEND
FC/FRUITLAND
PAGE FOUR.....

WELL	LOCATION	OPERATOR	FORMATION	WELL NO.	1978 WATER PRODUCTION (BBLS)	AVERAGE MONTHLY PRODUCTION (BBLS/MO)
Sunray 5	5O Sec. 5, T29N-R8W	El Paso	Pictured Cliffs	87	0	0
Turner 1	1A Sec.28, T30N-R9W	El Paso	Pictured Cliffs	88	0	0
Turner 3	3U Sec.28, T30N-R9W	El Paso	Pictured Cliffs	89	Oil 59	4.92
Turner 4	4N Sec. 7, T30N-R9W	El Paso	Pictured Cliffs	90	Oil 262	21.83
Turner 5	5F Sec.18, T30N-R9W	El Paso	Pictured Cliffs	91	Oil 57	5.7
Woodriver 3	3E Sec. 5, T30N-R9W	El Paso	Pictured Cliffs	92	0	0
Woodriver 4	4M Sec. 5, T30N-R9W	El Paso	Pictured Cliffs	93	Oil 291	24.25
Delhi State Com 1X	1J Sec.36, T30N-R9W	Mesa Petroleum	Pictured Cliffs	94	Water 57	4.75
State Com 41	41K Sec.32, T31N-R9W	Mesa Petroleum	Pictured Cliffs	95	101	50.50
State Com 42	42G Sec.32, T31N-R9W	Mesa Petroleum	Pictured Cliffs	96	233	19.42
State Com AE 27	27F Sec.36, T30N-R9W	Mesa Petroleum	Pictured Cliffs	97	60	5.00
State Com H 4A	4F Sec.32, T31N-R9W	Mesa Petroleum	Pictured Cliffs	98	Oil 135	
					Water 84	
					Total 219	18.25
State Com R 14	14M Sec.36, T30N-R9W	Mesa Petroleum	Pictured Cliffs	99	56	4.67
Florance 47X	47G Sec. 5, T30N-R9W	Tenneco	Pictured Cliffs	100	0	0
Florance 51Y	51B Sec.20, T30N-R9W	Tenneco	Pictured Cliffs	101	0	0
Florance 52	52I Sec.20, T30N-R9W	Tenneco	Pictured Cliffs	102	0	0
Florance 54	54O Sec.22, T30N-R9W	Tenneco	Pictured Cliffs	103	Oil 19	
					Water 19	
					Total 38	3.17
Florance 55	55M Sec.22, T30N-R9W	Tenneco	Pictured Cliffs	104	Oil 66	
					Water 66	
					Total 132	
Florance 56	56M Sec.23, T30N-R9W	Tenneco	Pictured Cliffs	105	0	0
Florance 58	58M Sec.14, T30N-R9W	Tenneco	Pictured Cliffs	106	Oil 117	
					Water 113	
					Total 230	19.17
Florance 59	59J Sec.23, T30N-R9W	Tenneco	Pictured Cliffs	107	Oil 34	
					Water 34	
					Total 68	5.67

MAP LEGEND
PC/FRUITLAND
PAGE FIVE.....

WELL	LOCATION	OPERATOR	FORMATION	WELL NO.	1978 WATER PRODUCTION (BBLS)	AVERAGE MONTHLY PRODUCTION (BBLS/MO)
Florance 61	61D Sec.12, T29N-R9W	Tenneco	Pictured Cliffs	108	0	0
Florance 77	77P Sec.12, T29N-R9W	Tenneco	Pictured Cliffs	109	0	0
Florance 78	78C Sec. 1, T29N-R9W	Tenneco	Pictured Cliffs	110	0	0
Florance 79	79G Sec.31, T30N-R8W	Tenneco	Pictured Cliffs	111	0	0
Florance 80	80M Sec.13, T30N-R9W	Tenneco	Pictured Cliffs	112	0	0
Florance 81	81J Sec.14, T30N-R9W	Tenneco	Pictured Cliffs	113	0	0
Florance 91	91H Sec.30, T30N-R9W	Tenneco	Pictured Cliffs	114	0	0
Florance 92	92P Sec.30, T30N-R9W	Tenneco	Pictured Cliffs	115	0	0
Florance 93	93C Sec.30, T30N-R9W	Tenneco	Pictured Cliffs	116	0	0
Florance 94	94K Sec.30, T30N-R9W	Tenneco	Pictured Cliffs	117	0	0
Florance 97	97O Sec. 5, T30N-R9W	Tenneco	Pictured Cliffs	118	0	0
Florance 98	98G Sec. 6, T30N-R9W	Tenneco	Pictured Cliffs	119	0	0
Florance 99	99O Sec. 6, T30N-R9W	Tenneco	Pictured Cliffs	120	0	0
Florance 100	100P Sec. 30, T30N-R8W	Tenneco	Pictured Cliffs	121	1	0
Florance 106	106M Sec. 8, T30N-R9W	Tenneco	Pictured Cliffs	122	Oil 162	
					Water 324	
					Total 486	40.50 ✓
Florance 107	107E Sec. 8, T30N-R9W	Tenneco	Pictured Cliffs/		0	0
			Fruitland	123	Oil 503	41.92 ✓
Florance "B" 1	1E Sec.22, T30N-R9W	Tenneco	Pictured Cliffs	124	0	0
Florance "B" 2	2B Sec.22, T30N-R9W	Tenneco	Pictured Cliffs	125	Oil 36	
					Water 5	
					Total 41	3.42
Florance "D" 1	1B Sec.23, T30N-R9W	Tenneco	Pictured Cliffs	126	Oil 5	0.42
Florance "D" 2	2E Sec. 23, T30N-R9W	Tenneco	Pictured Cliffs	127	Oil 76	
					Water 40	
					Total 116	9.67
Giomi Com "A" 1	1K Sec.28, T30N-R9W	Tenneco	Pictured Cliffs	128	0	0

MAP LEGEND
PC/FRUITLAND
PAGE SIX.....

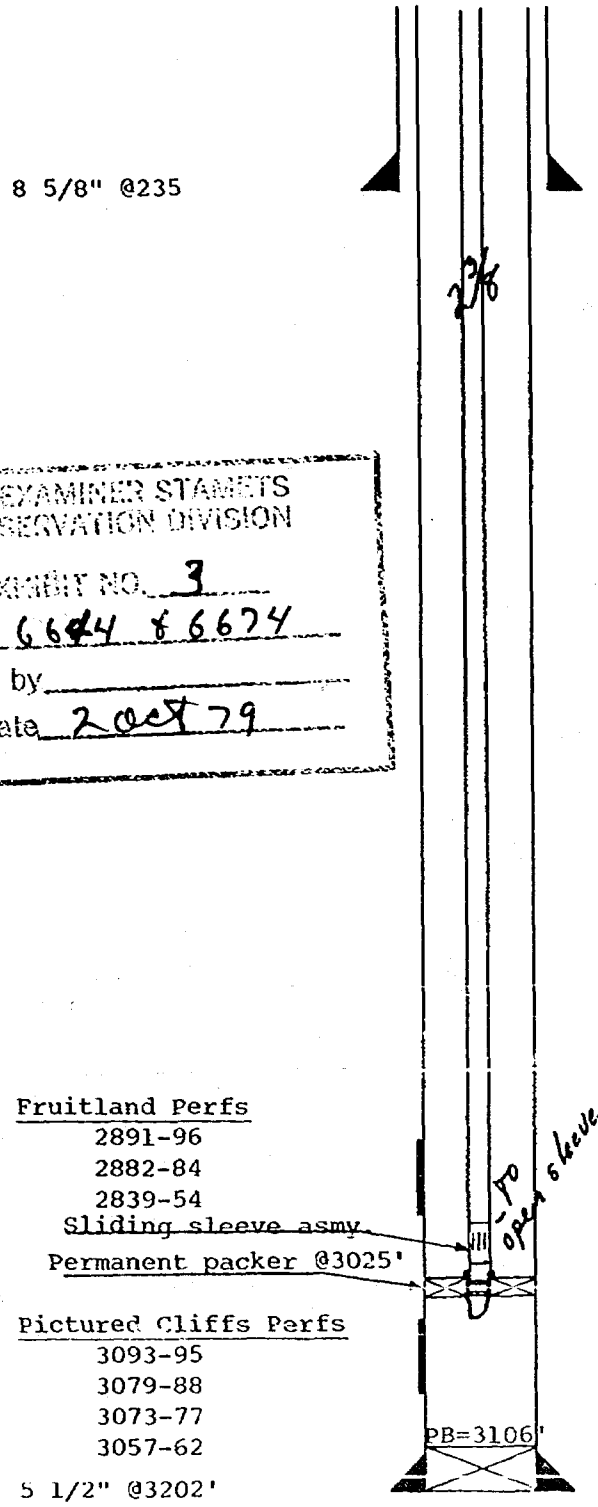
WELL	LOCATION	OPERATOR	FORMATION	WELL NO.	1978 WATER PRODUCTION (BBLS)	AVERAGE MONTHLY PRODUCTION (BBLS/MO)
Jacques Com A 1	1M Sec.25, T30N-R9W	Tenneco	Pictured Cliffs	129	0	0
Mansfield 2	2H Sec.19, T30N-R9W	Tenneco	Pictured Cliffs	130	Oil 288	
					Water 221	
					Total 509	42.42 ✓
Mansfield 3	3P Sec.19, T30N-R9W	Tenneco	Pictured Cliffs	131	0	0
Riddle 4	4A Sec.21, T30N-R9W	Tenneco	Pictured Cliffs	132	0	0
Riddle 5	5D Sec.21, T30N-R9W	Tenneco	Pictured Cliffs	133	0	0
Riddle 6	6I Sec.17, T30N-R9W	Tenneco	Pictured Cliffs	134	42	3.50
Riddle 7	7L Sec.17, T30N-R9W	Tenneco	Pictured Cliffs	135	0	0
Riddle 8X	8I Sec. 7, T30N-R9W	Tenneco	Pictured Cliffs	136	Oil 175	14.58
Riddle "A" 2	2P Sec.18, T30N-R9W	Tenneco	Pictured Cliffs	137	Oil 336	
					Water 29	
					Total 375	31.25
Riddle A3	3A Sec.18, T30N-R9W	Tenneco	Pictured Cliffs	138	Oil 415	
					Water 275	
					Total 690	57.50 ✓
Riddle Com 3	3O Sec.21, T30N-R9W	Tenneco	Fruitland/ ←	139	0	0
			Pictured Cliffs Dual		0	0
State Com "G" 8	8I Sec.16, T30N-R9W	Tenneco	Pictured Cliffs	140	Oil 30	
					Water 100	
					Total 130	10.83
State Com "H" 9	9B Sec. 16, T30N-R9W	Tenneco	Fruitland/ ←		0	0
			Pictured Cliffs Dual	141	0	0
State Com "K" 11	11N Sec.16, T30N-R9W	Tenneco	Pictured Cliffs	142	0	0
Walker Com 1	1P Sec.25, T30N-R9W	Tenneco	Pictured Cliffs	143	0	0
Pritchard Fed. 1	1G Sec. 6, T29N-R8W	Union Texas Pet.	Pictured Cliffs	144	0	0
Pritchard Fed. 3	3P Sec. 6, T29N-R8W	Union Texas Pet.	Pictured Cliffs	145	0	0

MAP LEGEND
PC/FRUITLAND
PAGE SEVEN.....

WELL	LOCATION	OPERATOR	FORMATION	WELL NO.	1978 WATER PRODUCTION (BBLS)	AVERAGE MONTHLY PRODUCTION (BBLS/MO)
Pritchard A 3	3I Sec.34, T31N-R9W	Amoco	Undesignated Fruitland	146	0	0
A.L. Elliott A 2	2D Sec.11, T29N-R9W	Amoco	Blanco Fruitland	147	Oil 36 Water (23) Total 59	4.92
E.E. Elliott C 1	1J Sec. 9, T30N-R9W	Amoco	Blanco Fruitland	148	6	0.50
Florance 101	101D Sec.29, T30N-R8W	Tenneco	Blanco Fruitland	149	0	0

FLORANCE 115

790' FSL 1025' FW.
Sec.10,T30N,R9W
San Juan County, N. M.

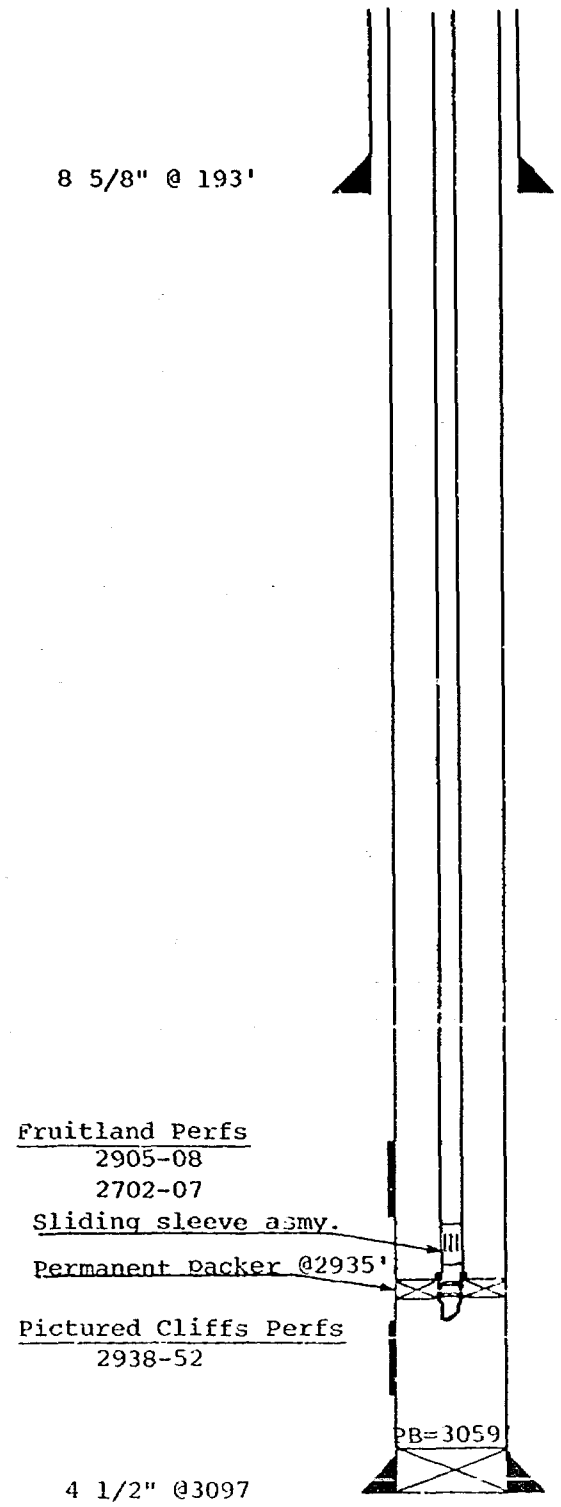


COMPLETION HISTORY
Pictured Cliffs:
Perf'd 3093-95, 79-88, 73-77 and
57-62 w/2JSPF. Perf'd in 300 gal
15% MCA. Frac;d w/35,000 gal 70%
quality foam and 30,000# 10/20
sand. AIR: 20 BPM @1900# spear-
head frac w/500 gal. 15% MCA.
Set Model "F" packer w/expendable
plug @3025'.
Fruitland:
Perf'd 2891-96, 82-84, 39-54 w/2
JSPF. Perf'd in 300 gal 15% MCA.
Frac'd w/25,000 gals 70% quality
foam and 30,000# 10/20 sand.
AIR: 20 BPM @ 2200#.
Landed tbg. in packer w/"F" type
seating nipple @3034 and sliding
sleeve @3021-24.

EXHIBIT #1

STATE COM K-12

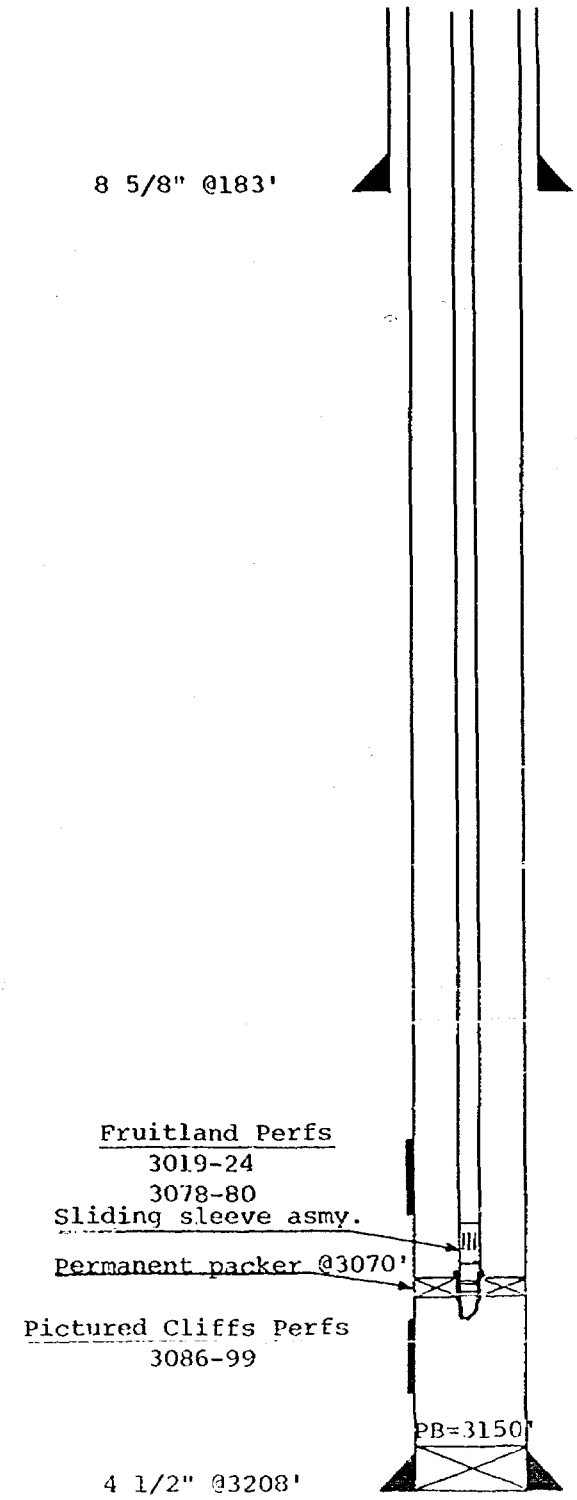
1640' FNL 990' FWL
Sec.16,T30N,R9W
San Juan County, N. M.



COMPLETION HISTORY
Pictured Cliffs:
Perf'd 2938-52 w/2JSPF
Fruitland:
Perf'd 2905-08, 2702-07 w/4 JSPF.
Frac'd single stage w/30,000 gal.
70% quality foam and 30,000#
10/20 sand. AIR: 20 BPM @1400#.
Perf'd in 300 gal 15% HCL and
spearhead frac w/500 gal 15% HCL.
Set Mod. "F" packer @2935'.
Landed tbg. in packer w/"f" type
seating nipple @2944 and sliding
sleeve @2931-34.

FLORANCE 60R

1540' FSL 800' FWL
Sec.1, T29N, R9W
San Juan County, N.M.



COMPLETION HISTORY

Pictured Cliffs:

Perf'd 3086-99 w/4JSPF

Fruitland:

Perf'd 3019-24, 78-80 w/4JSPF.

Frac'd single stage w/25000 gal 70% quality foam and 30,000# 10/20 sand. AIR: 20 BPM @1400#.

Perf'd in 300 gal 15% MCA and spearhead frac w/500 gal 15% MCA.

Set Mod. "F" packer @3070.

Landed tbg. in packer w/"F" type seating nipple @3079 and sliding sleeve @ 3066-69.

Tenneco Oil
A Tenneco Company

Penthouse
720 South Colorado Blvd.
Denver, Colorado 80222
(303) 758-7130

August 21, 1979

El Paso Natural Gas Co.
P.O. Box 990
Farmington, New Mexico 87401

Attention: Mr. C. E. Matthews
San Juan Production Mgr.

Re: Blanco Pictured Cliffs/Fruitland
Commingling

Gentlemen:

Tenneco Oil Company is petitioning the New Mexico Oil Conservation Commission to allow downhole commingling of three (3) of our recently completed Pictured Cliffs/Fruitland duals:

Florance 60R	Sec. 1, T-29-N, R-9-W, San Juan County, NM
Florance 115	Sec. 10, T-30-N, R-9-W, San Juan County, NM
State Com K-12	Sec. 16, T-30-N, R-9-W, San Juan County, NM

We believe this is the most efficient and economic method of handling present and anticipated water production from these zones. Please return a copy of this letter indicating whether or not you object to this proposal.

Yours very truly,

TENNECO OIL COMPANY

for Jerry

J. M. Lacey
Division Production Manager

JML/RCL/vc

__X__ I do not object to this petition

_____ I do object to this petition.

Carl E. Matthews
Signature

El Paso Natural Gas Co.
Company

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
Tenneco EXHIBIT NO. 4
CASE NO. 6644 6624
Submitted by
Hearing Date 2 Oct 79

EXHIBIT #4

Tenneco Oil
A Tenneco Company

Penthouse
720 South Colorado Blvd.
Denver, Colorado 80222
(303) 758-7130

September 24, 1979

Amoco Production Company
Security Life Building
1616 Glenarm
Denver, Colorado 80202

Attention: Mr. M. S. Kraemer
Regional Production Manager

Re: Blanco Pictured Cliffs/Fruitland
Commingling

Gentlemen:

Tenneco Oil Company is petitioning the New Mexico Oil Conservation Commission to allow downhole commingling of three (3) of our recently completed Pictured Cliffs/Fruitland duals:

Florance 60R	Sec. 1, T-29N, R-9-W, San Juan County, N.M.
Florance 115	Sec.10, T-30-N, R-9-W, San Juan County, N.M.
State Com K-12	Sec.16, T-30-N, R-9-W, San Juan County, N.M.

We believe this is the most efficient and economic method of handling present and anticipated water production from these zones. Please return a copy of this letter indicating whether or not you object to this proposal.

Yours very truly,

TENNECO OIL COMPANY

J. M. Lacey
Division Production Manager

JML/RCL/vv

✓ I do not object to this petition.

____ I do object to this petition.

Jim R. Walsh
Signature

Amoco Production Co.
Company

PROPOSED PRODUCTION SPLIT

WELL	AOF, MCFD		PRODUCTION SPLIT %	
	PICTURED CLIFFS	COMMINGLED	PICTURED CLIFFS	FRUITLAND
Florance 60R	669	627	-	-*
Florance 115	~~635~~ 637	1562	41	59
State Com K-12	1016	1060	96	4

*This well is currently being retested. Excessive production of completion water from the Fruitland formation invalidated the commingled test for AOF. The water was initially thought to be formation water.

EXHIBIT #3

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
Tenneco EXHIBIT NO. 3
CASE NO. 6624 & 6624
Submitted by
Hearing Date 2 Oct 79

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Revised 9-1-65

Type Test			Test Date	
[X] Initial	[ ] Annual	[ ] Special	9-10-79	

Company	Connection	
Tenneco Oil Company		

Pool	Formation	Unit
Blanco	Pictured Cliff	

Completion Date	Total Depth	Plug Back TD	Elevation	Farm or Lease Name
	3202	3106		Florance

Csg. Size	Wt.	d	Set At	Perforations	Well No.
5 1/2			3202	From 3095 To 3057	115

Tbg. Size	Wt.	d	Set At	Perforations	Unit	Sec.	Twp.	Rge.
2 3/8			3025	From 2839 To 2896		10	30	9

Type Well – Single – Bradenhead – G.G. or G.O. Multiple	Packer Set At	County
	3025	San Juan

Producing Thru	Reservoir Temp. °F	Mean Annual Temp. °F	Baro. Press. – P_a	State
				New Mexico

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
		.680						

	FLOW DATA				TUBING DATA		CASING DATA		
NO.	Prover Line Size	X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI						1000		1000		
1.	2	x 6 x .75				36	74	1000	74	3 hours
2.										
3.										
4.										
5.										

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	11		48	.9868	1.213	1.00707	636
2.							
3.							
4.							
5.							

NO.	R_t	Temp. °R	T_r	Z
1.	.07	534	1.39	.986
2.				
3.				
4.				
5.				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.

A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.

Specific Gravity Separator Gas _____ XXXXXXXXX

Specific Gravity Flowing Fluid XXXXX _____

Critical Pressure _____ P.S.I.A. _____ P.S.I.A.

Critical Temperature _____ R _____ R

P_c 1012 P_c^2 1024144

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		48	2304	1021840
2				
3				
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.00225$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.0019$

$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 637$

Absolute Open Flow 637 Mcfd @ 15.025 Angle of Slope θ _____ Slope, n 85

Remarks: _____

Approved By Commission	Conducted By	Calculated By	Checked By

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Revised 9-1-65

Type Test: [ ] Initial [ ] Annual [X] Special				Test Date: 9-19-79	
Company: Tenneco Oil Company			Connection		
Pool: Blanco			Formation: Pictured Cliff/Fruitland		Unit
Completion Date	Total Depth: 3202		Plug Back TD: 3106	Elevation	Farm or Lease Name: Florance
Csg. Size: 5 1/2 / Wt. / d / Set At: 3202			Perforations: From 3095 To 3057		Well No.: 115
Tbg. Size: 2 3/8 / Wt. / d / Set At: 3025			Perforations: From 2839 To 2896		Unit: D / Sec.: 10 / Twp.: 30 / Rge.: 9
Type Well – Single – Bradenhead – G.G. or G.O. Multiple			Packer Set At: 3025		County: San Juan
Producing Thru	Reservoir Temp. °F	Mean Annual Temp. °F	Baro. Press. – P_a		State: New Mexico
L	H	Gg: .680	% CO_2	% N_2	% H_2S / Prover / Meter Run / Taps

FLOW DATA / TUBING DATA / CASING DATA

NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Tubing Press. p.s.i.g.	Tubing Temp. °F	Casing Press. p.s.i.g.	Casing Temp. °F	Duration of Flow
SI							1025		1025		
1.	2	x 6	x .75				104	74	216	74	3 hours
2.											
3.											
4.											
5.											

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	11		116	.9868	1.213	1.01273	1546
2.							
3.							
4.							
5.							

NO.	P_r	Temp. °R	T_r	Z
1.	.11	532	1.38	.975
2.				
3.				
4.				
5.				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.

A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.

Specific Gravity Separator Gas _____ XXXXXXXXXX

Specific Gravity Flowing Fluid XXXXX _____

Critical Pressure _____ P.S.I.A. _____ P.S.I.A.

Critical Temperature _____ R _____ R

P_c 1037 P_c^2 1075369

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		116	13456	1061913
2				
3				
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.01267$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.0107$

$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1562$

Absolute Open Flow 1562 Mcfd @ 15.025 Angle of Slope θ _____ Slope, n .85

Remarks: _____

Approved By Commission:	Conducted By:	Calculated By:	Checked By:

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Revised 9-1-65

Type Test: [X] Initial [ ] Annual [ ] Special — Test Date: 9-10-79

Company: Tenneco Oil Company — Connection:

Pool: Blanco — Formation: Pictured Cliff — Unit:

Completion Date	Total Depth	Plug Back TD	Elevation	Farm or Lease Name
7/10/79	3100'	3059'		State Com

Csg. Size	Wt.	d	Set At	Perforations:	Well No.
4 1/2			3097	From 2952 To 2702	K-12

Tbg. Size	Wt.	d	Set At	Perforations:	Unit	Sec.	Twp.	Rge.
1 1/4			2940	From To	E	16	30N	9W

Type Well – Single – Bradenhead – G.G. or G.O. Multiple: — Packer Set At: 2930 — County: San Juan

Producing Thru: — Reservoir Temp. °F: — Mean Annual Temp. °F: — Baro. Press. – P_a: — State: New Mexico

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
		.680						

	FLOW DATA				TUBING DATA		CASING DATA		
NO.	Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI					385		795		
1.	2 x 6 x .75				62	72	795	72	3 hours
2.					PC				
3.							FT		
4.									
5.									

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	11		74	.9887	1.213	1.0096	986
2.							
3.							
4.							
5.							

NO.	P_t	Temp. °R	T_r	Z
1.	.11	532	1.38	.981
2.				
3.				
4.				
5.				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.

A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.

Specific Gravity Separator Gas _____ XXXXXXXXX

Specific Gravity Flowing Fluid XXXXX _____

Critical Pressure _____ P.S.I.A. _____ P.S.I.A.

Critical Temperature _____ R _____ R

P_c 397 P_c^2 157609

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		74	5476	152133
2				
3				
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2}$ = 1.0359 (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n$ = 1.0305

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n$ = 1016

Absolute Open Flow 1016 Mcfd @ 15.025 — Angle of Slope θ _____ — Slope, n .85

Remarks: _____

Approved By Commission:	Conducted By:	Calculated By:	Checked By:

NEW MEXICO OIL CONSERVATION COMMISSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test: [ ] Initial [ ] Annual [X] Special				Test Date: 9-18-79	
Company: Tenneco Oil Company		Connection			
Pool: Blanco		Formation: Pictured Cliff/Fruitland			Unit
Completion Date: 7/10/79	Total Depth: 3100'		Plug Back TD: 3059'	Elevation	Farm or Lease Name: State Com K
Csg. Size: 4 1/2" / Wt. / d / Set At: 3097			Perforations: From 2952 To 2702		Well No.: 12
Tbg. Size: 1 1/4" / Wt. / d / Set At: 2940			Perforations: From 2938 To 2952		Unit: E / Sec.: 16 / Twp.: 30N / Rge.: 9W
Type Well – Single – Bradenhead – G.G. or G.O. Multiple			Packer Set At: 2930		County: San Juan
Producing Thru	Reservoir Temp. °F	Mean Annual Temp. °F	Baro. Press. – P_a		State: New Mexico
L	H	Gg: .680	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps

FLOW DATA / TUBING DATA / CASING DATA

NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Tubing Press. p.s.i.g.	Tubing Temp. °F	Casing Press. p.s.i.g.	Casing Temp. °F	Duration of Flow
SI							380		820		
1.	2	X	6 X .75				65	72	172	72	3 hours
2.											
3.							qc		FT		
4.											
5.											

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	11		77	.9887	1.213	1.0096	1026
2.							
3.							
4.							
5.							

NO.	P_t	Temp. °R	T_t	Z
1.	.12	532	1.38	.981
2.				
3.				
4.				
5.				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
Critical Temperature _____ R _____ R

P_c 392 P_c^2 153664

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		77	5929	147735
2				
3				
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.040$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.0340$

$AOF = Q\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1060$

Absolute Open Flow 1060 Mcfd @ 15.025 Angle of Slope θ _____ Slope, n .85

Remarks: _____

Approved By Commission	Conducted By:	Calculated By:	Checked By:

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Revised 9-1-65

Type Test: [X] Initial [ ] Annual [ ] Special					Test Date: 9-10-79		
Company: Tenneco Oil Company				Connection			
Pool: Blanco				Formation: Pictured Cliff			Unit
Completion Date		Total Depth: 3208		Plug Back TD: 3150	Elevation		Farm or Lease Name: Florance
Csg. Size: 4 1/2	Wt.: 10.5	d	Set At: 3208	Perforations: From 3078	To 3099		Well No.: 60R
Tbg. Size: 2 3/8	Wt.	d	Set At: 3070	Perforations: From 3019	To 3024		Unit: I / Sec.: 1 / Twp.: 29N / Rge.: 9W
Type Well – Single – Bradenhead – G.G. or G.O. Multiple				Packer Set At: 3070			County: San Juan
Producing Thru	Reservoir Temp. °F		Mean Annual Temp. °F	Baro. Press. – P_a			State: New Mexico
L	H	Gg: .680	% CO_2	% N_2	% H_2S	Prover	Meter Run / Taps

FLOW DATA					TUBING DATA		CASING DATA		
NO.	Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI					625		390		
1.	2 x 6 x .75				38	72	390	72	3 hours
2.									
3.					QC		FT		
4.									
5.									

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	11		50	.9887	1.213	1.00758	665
2.							
3.							
4.							
5.							

NO.	P_t	Temp. °R	T_r	Z
1.	.07	532	1.38	.985
2.				
3.				
4.				
5.				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.

A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.

Specific Gravity Separator Gas _____ XXXXXXXXX

Specific Gravity Flowing Fluid XXXXX _____

Critical Pressure _____ P.S.I.A. _____ P.S.I.A.

Critical Temperature _____ R _____ R

P_c 637 P_c^2 405769

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		50	2500	403269
2				
3				
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.0061$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.00526$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 669$

Absolute Open Flow 669 Mcfd @ 15.025 Angle of Slope θ _____ Slope, n .85

Remarks: _____

Approved By Commission:	Conducted By:	Calculated By:	Checked By:

MAP LEGEND
PC/FRUITLAND

WELL	LOCATION	OPERATOR	FORMATION	WELL NO.	1978 WATER PRODUCTION (BBLS)	AVERAGE MONTHLY PRODUCTION (BBLS/MO)
Cole Gas Com B 1	1O Sec.15, T29N-R9W	Amoco	Pictured Cliffs	1	9	0.75
H.G. Cole 1	1N Sec.15, T29N-R9W	Amoco	Pictured Cliffs	2	31	2.58
Elliot Gas Com "J1"	1C Sec.34, T30N-R9W	Amoco	Pictured Cliffs	3	18	1.50
Elliot Gas Com "K" 1	1O Sec.26, T30N-R9W	Amoco	Pictured Cliffs	4	16	1.33
Elliot Gas Com "T" 1	1B Sec.26, T30N-R9W	Amoco	Pictured Cliffs	5	19	1.58
Elliot Gas Com "W" 1	1H Sec. 9, T30N-R9W	Amoco	Pictured Cliffs	6	0	0
A.L. Elliot "A" 3	3A Sec.11, T29N-R9W	Amoco	Pictured Cliffs	7	0	0
A.L. Elliot "B" 3	3D Sec.10, T29N-R9W	Amoco	Pictured Cliffs	8	15	1.25
A.L. Elliot "B" 4	4P Sec.10, T29N-R9W	Amoco	Pictured Cliffs	9	26	2.17
A.L. Elliot "B" 7	7L Sec.10, T29N-R9W	Amoco	Pictured Cliffs	10	5	0.42
A.L. Elliot "C" 2	2E Sec.15, T29N-R9W	Amoco	Pictured Cliffs	11	6	0.50
A.L. Elliot "C" 3	3B Sec.15, T29N-R9W	Amoco	Pictured Cliffs	12	4	0.33
A.L. Elliot "D" 3	3F Sec.12, T29N-R9W	Amoco	Pictured Cliffs	13	26	2.17
A.L. Elliot "D" 4	4I Sec.11, T29N-R9W	Amoco	Pictured Cliffs	14	12	1.00
A.L. Elliot "D" 5	5K Sec.12, T29N-R9W	Amoco	Pictured Cliffs	15	1	1/12
A.L. Elliot "D" 6	6E Sec.13, T29N-R9W	Amoco	Pictured Cliffs	16	2	2/12
A.L. Elliot "D" 7	7K Sec 11, T29N-R9W	Amoco	Pictured Cliffs	17	0	0
A.L. Elliot "E" 1	1D Sec.14, T29N-R9W	Amoco	Pictured Cliffs	18	6 (6 Mo.Prod)	1.00
E.E. Elliot "A" 2	2P Sec.15, T30N-R9W	Amoco	Pictured Cliffs	19	42	3.5
E.E. Elliot "A" 3	3L Sec.15, T30N-R9W	Amoco	Pictured Cliffs	20	16	1.33
E.E. Elliot "B" 4	4P Sec.27, T30N-R9W	Amoco	Pictured Cliffs	21	17	1.42
E.E. Elliot "B" 5	5E Sec.26, T31N-R9W	Amoco	Pictured Cliffs	22	19	1.58
E.E. Elliot "B" 6	6F Sec.27, T30N-R9W	Amoco	Pictured Cliffs	23	12	1.00
E.E. Elliot "B" 10	10A Sec.27, T30N-R9W	Amoco	Pictured Cliffs	24	12	1.00
E.E. Elliot "B" 11	11K Sec.26, T30N-R9W	Amoco	Pictured Cliffs	25	20	1.67
E.E. Elliot "B" 12	12N Sec.27, T30N-R9W	Amoco	Pictured Cliffs	26	13	1.08
E.E. Elliot "B" 13	13B Sec.34, T30N-R9W	Amoco	Pictured Cliffs	27	19	1.58
E.E. Elliot "C" 2	2F Sec. 9, T31N-R9W	Amoco	Pictured Cliffs	28	9	0.75

EXHIBIT #4

MAP LEGEND
PC/FRUITLAND
PAGE TWO.....

WELL	LOCATION	OPERATOR	FORMATION	WELL NO.	1978 WATER PRODUCTION (BBLS)	AVERAGE MONTHLY PRODUCTION (BBLS/MO)
Likins Gas Com "A" 2	2J Sec.34, T30N-R9W	Amoco	Pictured Cliffs	29	41	3.42
Likins Gas Com "A" 4	4L Sec.34, T30N-R9W	Amoco	Pictured Cliffs	30	8	0.67
Lobato Gas Com "B" 1X	1E Sec. 2, T29N-R9W	Amoco	Pictured Cliffs	31	8	0.67
Lobato Gas Com "C" 1	1H Sec. 3, T29N-R9W	Amoco	Pictured Cliffs	32	7	0.58
Lobato Gas Com "D" 1	1D Sec. 3, T29N-R9W	Amoco	Pictured Cliffs	31	12	1.0
Lobato Gas Com "F" 1	1B Sec.35, T30N-R9W	Amoco	Pictured Cliffs	34	13	1.08
Lobato Gas Com "H" 1	1L Sec. 3, T29N-R9W	Amoco	Pictured Cliffs	35	25	2.08
Sandoval Gas Com B 1	1D Sec.35, T30N-R9W	Amoco	Pictured Cliffs	36	13	1.08
Dennis A. Shane USA #1	1N Sec.14, T29N-R9W	Amoco	Pictured Cliffs	37	0	0
John F. Shaw #1	1B Sec.14, T30N-R9W	Amoco	Pictured Cliffs	38	20	1.67
Shaw Gas Com "B" 1	1D Sec.14, T30N-R9W	Amoco	Pictured Cliffs	39	16	1.33
State Gas Com "BM" 1	1H Sec. 2, T29N-R9W	Amoco	Pictured Cliffs	40	9	0.75
State Gas Com "Y" 1	1O Sec. 2, T29N-R9W	Amoco	Pictured Cliffs	41	5	0.42
Ulibarri Gas Com 2	2O Sec.35, T30N-R9W	Amoco	Pictured Cliffs	42	21	1.75
Ulibarri Gas Com 4	4N Sec.35, T30N-R9W	Amoco	Pictured Cliffs	43	13	1.08
Day 4	4C Sec.18, T29N-R8W	El Paso	Pictured Cliffs	44	0	0
Day 5	5F Sec.18, T29N-R8W	El Paso	Pictured Cliffs	45	0	0
Day 6	6D Sec.17, T29N-R8W	El Paso	Pictured Cliffs	46	0	0
Day 7	7K Sec.17, T29N-R8W	El Paso	Pictured Cliffs	47	0	0
Day A 6	6A Sec. 7, T29N-R8W	El Paso	Pictured Cliffs	48	0	0
Day A 7	7P Sec. 7, T29N-R8W	El Paso	Pictured Cliffs	49	0	0
Day A 8	8G Sec. 8, T29N-R8W	El Paso	Pictured Cliffs	50	0	0
Day A 9	9E Sec. 8, T29N-R8W	El Paso	Pictured Cliffs	51	0	0
Day A 10	10J Sec.18, T29N-R8W	El Paso	Pictured Cliffs	52	0	0
Day A 12	12A Sec.18, T29N-R8W	El Paso	Pictured Cliffs	53	0	0
Day A 13	13N Sec. 8, T29N-R8W	El Paso	Pictured Cliffs	54	0	0
Day A 14	14C Sec.17, T29N-R8W	El Paso	Pictured Cliffs	55	0	0
Day A 15	15I Sec.17, T29N-R8W	El Paso	Pictured Cliffs	56	0	0

MAP LEGEND
FC/FRUITLAND
PAGE THREE.....

WELL	LOCATION	OPERATOR	FORMATION	WELL NO.	1978 WATER PRODUCTION (BBLS)	AVERAGE MONTHLY PRODUCTION (BBLS/MO)
Day A 16	16J Sec. 8, T29N-R8W	El Paso	Pictured Cliffs	57	0	0
Day A 17	17C Sec. 7, T29N-R8W	El Paso	Pictured Cliffs	58	0	0
Duff 3	3M Sec. 9, T30N-R9W	El Paso	Pictured Cliffs	59	0	0
EPNG Com "E" 6	6L Sec. 2, T29N-R9W	El Paso	Pictured Cliffs	60	0	0
Feuille 2	2A Sec.13, T29N-R9W	El Paso	Pictured Cliffs	61	0	0
Florance 3	3M Sec.21, T30N-R9W	El Paso	Pictured Cliffs	62	0	0
Florance 8	8C Sec.20, T30N-R9W	El Paso	Pictured Cliffs	63	0	0
Florance "B" 1	1N Sec.20, T30N-R9W	El Paso	Pictured Cliffs	64	0	0
Guede 3	3I Sec 29, T30N-R9W	El Paso	Pictured Cliffs	65	Oil 37	3.08
Howell 5	5N Sec 31, T30N-R8W	El Paso	Pictured Cliffs	66	0	0
Howell "E" 3	3L Sec.29, T30N-R8W	El Paso	Pictured Cliffs	67	Oil 133	11.08
Lawson 2	2B Sec.25, T30N-R9W	El Paso	Pictured Cliffs	68	0	0
Mansfield 5	5E Sec.28, T30N-R9W	El Paso	Pictured Cliffs	69	0	0
Mansfield 6	6C Sec.29, T30N-R9W	El Paso	Pictured Cliffs	70	Oil 379	31.58
Mansfield 7	7K Sec.29, T30N-R9W	El Paso	Pictured Cliffs	71	0	0
Mansfield 10	10K Sec.19, T30N-R9W	El Paso	Pictured Cliffs	72	0	0
Mansfield 12	12H Sec.29, T30N-R9W	El Paso	Pictured Cliffs	73	0	0
Pierce 4	4G Sec. 8, T30N-R9W	El Paso	Pictured Cliffs	74	0	0
Pierce 5	5F Sec.17, T30N-R9W	El Paso	Pictured Cliffs	75	Oil 76	6.33
Pierce 6	6G Sec.17, T30N-R9W	El Paso	Pictured Cliffs	76	0	0
Pierce 7	7G Sec. 7, T30N-R9W	El Paso	Pictured Cliffs	77	523	43.58
Pierce 8	8O Sec. 8, T30N-R9W	El Paso	Pictured Cliffs	78	0	0
Pierce 9	9F Sec. 7, T30N-R9W	El Paso	Pictured Cliffs	79	246	20.50
Quigley 2	2K Sec. 6, T30N-R9W	El Paso	Pictured Cliffs	80	87	7.25
Riddle "A" 4	4A Sec. 1, T29N-R9W	El Paso	Pictured Cliffs	81	0	0
Riddle "A" 5	5O Sec. 1, T29N-R9W	El Paso	Pictured Cliffs	82	92	30.67
Riddle "A" 8	8D Sec.24, T30N-R9W	El Paso	Pictured Cliffs	83	0	0
Riddle "A" 9	9M Sec.24, T30N-R9W	El Paso	Pictured Cliffs	84	0	0
Sunray 3	3E Sec. 5, T29N-R8W	El Paso	Pictured Cliffs	85	0	0
Sunray 4	4M Sec. 5, T29N-R8W	El Paso	Pictured Cliffs	86	0	0

MAP LEGEND
PC/FRUITLAND
PAGE FOUR.....

WELL	LOCATION	OPERATOR	FORMATION	WELL NO.	1978 WATER PRODUCTION (BBLS)	AVERAGE MONTHLY PRODUCTION (BBLS/MO)
Sunray 5	5O Sec. 5, T29N-R8W	El Paso	Pictured Cliffs	87	0	0
Turner 1	1A Sec.28, T30N-R9W	El Paso	Pictured Cliffs	88	0	0
Turner 3	3U Sec.28, T30N-R9W	El Paso	Pictured Cliffs	89	Oil 59	4.92
Turner 4	4N Sec. 7, T30N-R9W	El Paso	Pictured Cliffs	90	Oil 262	21.83
Turner 5	5F Sec.18, T30N-R9W	El Paso	Pictured Cliffs	91	Oil 57	5.7
Woodriver 3	3E Sec. 5, T30N-R9W	El Paso	Pictured Cliffs	92	0	0
Woodriver 4	4M Sec. 5, T30N-R9W	El Paso	Pictured Cliffs	93	Oil 291	24.25
Delhi State Com 1X	1J Sec.36, T30N-R9W	Mesa Petroleum	Pictured Cliffs	94	Water 57	4.75
State Com 41	41K Sec.32, T31N-R9W	Mesa Petroleum	Pictured Cliffs	95	101	50.50
State Com 42	42G Sec.32, T31N-R9W	Mesa Petroleum	Pictured Cliffs	96	233	19.42
State Com AE 27	27F Sec.36, T30N-R9W	Mesa Petroleum	Pictured Cliffs	97	60	5.00
State Com H 4A	4F Sec.32, T31N-R9W	Mesa Petroleum	Pictured Cliffs	98	Oil 135	
					Water 84	
					Total 219	18.25
State Com R 14	14M Sec.36, T30N-R9W	Mesa Petroleum	Pictured Cliffs	99	56	4.67
Florance 47X	47G Sec. 5, T30N-R9W	Tenneco	Pictured Cliffs	100	0	0
Florance 51Y	51B Sec.20, T30N-R9W	Tenneco	Pictured Cliffs	101	0	0
Florance 52	52I Sec.20, T30N-R9W	Tenneco	Pictured Cliffs	102	0	0
Florance 54	54O Sec.22, T30N-R9W	Tenneco	Pictured Cliffs	103	Oil 19	
					Water 19	
					Total 38	3.17
Florance 55	55M Sec.22, T30N-R9W	Tenneco	Pictured Cliffs	104	Oil 66	
					Water 66	
					Total 132	
Florance 56	56M Sec.23, T30N-R9W	Tenneco	Pictured Cliffs	105	0	0
Florance 58	58M Sec.14, T30N-R9W	Tenneco	Pictured Cliffs	106	Oil 117	
					Water 113	
					Total 230	19.17
Florance 59	59J Sec.23, T30N-R9W	Tenneco	Pictured Cliffs	107	Oil 34	
					Water 34	
					Total 68	5.67

MAP LEGEND
PC/FRUITLAND
PAGE FIVE.....

WELL	LOCATION	OPERATOR	FORMATION	WELL NO.	1978 WATER PRODUCTION (BBLS)	AVERAGE MONTHLY PRODUCTION (BBLS/MO)
Florance 61	61D Sec.12, T29N-R9W	Tenneco	Pictured Cliffs	108	0	0
Florance 77	77P Sec.12, T29N-R9W	Tenneco	Pictured Cliffs	109	0	0
Florance 78	78C Sec. 1, T29N-R9W	Tenneco	Pictured Cliffs	110	0	0
Florance 79	79G Sec.31, T30N-R8W	Tenneco	Pictured Cliffs	111	0	0
Florance 80	80M Sec.13, T30N-R9W	Tenneco	Pictured Cliffs	112	0	0
Florance 81	81J Sec.14, T30N-R9W	Tenneco	Pictured Cliffs	113	0	0
Florance 91	91H Sec.30, T30N-R9W	Tenneco	Pictured Cliffs	114	0	0
Florance 92	92P Sec.30, T30N-R9W	Tenneco	Pictured Cliffs	115	0	0
Florance 93	93C Sec.30, T30N-R9W	Tenneco	Pictured Cliffs	116	0	0
Florance 94	94K Sec.30, T30N-R9W	Tenneco	Pictured Cliffs	117	0	0
Florance 97	97O Sec. 5, T30N-R9W	Tenneco	Pictured Cliffs	118	0	0
Florance 98	98G Sec. 6, T30N-R9W	Tenneco	Pictured Cliffs	119	0	0
Florance 99	99O Sec. 6, T30N-R9W	Tenneco	Pictured Cliffs	120	0	0
Florance 100	100P Sec. 30, T30N-R8W	Tenneco	Pictured Cliffs	121	1	0
Florance 106	106M Sec. 8, T30N-R9W	Tenneco	Pictured Cliffs	122	Oil 162	
					Water 324	
					Total 486	40.50
Florance 107	107E Sec. 8, T30N-R9W	Tenneco	Pictured Cliffs/ Fruitland	123	0	0
					Oil 503	41.92
Florance "B" 1	1E Sec.22, T30N-R9W	Tenneco	Pictured Cliffs	124	0	0
Florance "B" 2	2B Sec.22, T30N-R9W	Tenneco	Pictured Cliffs	125	Oil 36	
					Water 5	
					Total 41	3.42
Florance "D" 1	1B Sec.23, T30N-R9W	Tenneco	Pictured Cliffs	126	Oil 5	0.42
Florance "D" 2	2E Sec. 23, T30N-R9W	Tenneco	Pictured Cliffs	127	Oil 76	
					Water 40	
					Total 116	9.67
Giomi Com "A" 1	1K Sec.28, T30N-R9W	Tenneco	Pictured Cliffs	128	0	0

MAP LEGEND
PC/FRUITLAND
PAGE SIX.....

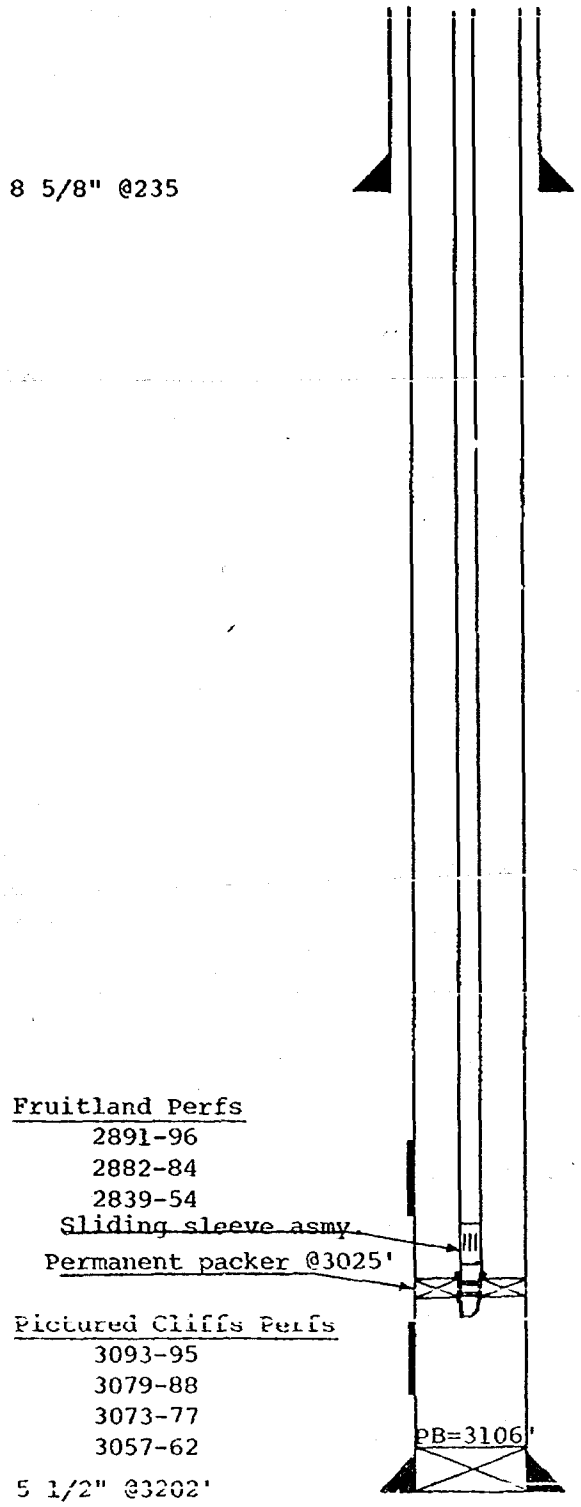
WELL	LOCATION	OPERATOR	FORMATION	WELL NO.	1978 WATER PRODUCTION (BBLS)	AVERAGE MONTHLY PRODUCTION (BBLS/MO)
Jacques Com A 1	1M Sec.25, T30N-R9W	Tenneco	Pictured Cliffs	129	0	0
Mansfield 2	2H Sec.19, T30N-R9W	Tenneco	Pictured Cliffs	130	Oil 288	
					Water 221	
					Total 509	42.42
Mansfield 3	3P Sec.19, T30N-R9W	Tenneco	Pictured Cliffs	131	0	0
Riddle 4	4A Sec.21, T30N-R9W	Tenneco	Pictured Cliffs	132	0	0
Riddle 5	5D Sec.21, T30N-R9W	Tenneco	Pictured Cliffs	133	0	0
Riddle 6	6I Sec.17, T30N-R9W	Tenneco	Pictured Cliffs	134	42	3.50
Riddle 7	7L Sec.17, T30N-R9W	Tenneco	Pictured Cliffs	135	0	0
Riddle 8X	8I Sec. 7, T30N-R9W	Tenneco	Pictured Cliffs	136	Oil 175	14.58
Riddle "A" 2	2P Sec.18, T30N-R9W	Tenneco	Pictured Cliffs	137	Oil 336	
					Water 29	
					Total 375	31.25
Riddle A3	3A Sec.18, T30N-R9W	Tenneco	Pictured Cliffs	138	Oil 415	
					Water 275	
					Total 690	57.50
Riddle Com 3	3O Sec.21, T30N-R9W	Tenneco	Fruitland/	139	0	0
			Pictured Cliffs Dual		0	0
State Com "G" 8	8I Sec.16, T30N-R9W	Tenneco	Pictured Cliffs	140	Oil 30	
					Water 100	
					Total 130	10.83
State Com "H" 9	9B Sec. 16, T30N-R9W	Tenneco	Fruitland/		0	0
			Pictured Cliffs Dual	141	0	0
State Com "K" 11	11N Sec.16, T30N-R9W	Tenneco	Pictured Cliffs	142	0	0
Walker Com 1	1P Sec.25, T30N-R9W	Tenneco	Pictured Cliffs	143	0	0
Pritchard Fed. 1	1G Sec. 6, T29N-R8W	Union Texas Pet.	Pictured Cliffs	144	0	0
Pritchard Fed. 3	3P Sec. 6, T29N-R8W	Union Texas Pet.	Pictured Cliffs	145	0	0

MAP LEGEND
PC/FRUITLAND
PAGE SEVEN.....

WELL	LOCATION	OPERATOR	FORMATION	WELL NO.	1978 WATER PRODUCTION (BBLS)	AVERAGE MONTHLY PRODUCTION (BBLS/MO)
Pritchard A 3	3I Sec.34, T31N-R9W	Amoco	Undesignated Fruitland	146	0	0
A.L. Elliott A 2	2D Sec.11, T29N-R9W	Amoco	Blanco Fruitland	147	Oil 36 Water 23 Total 59	4.92
E.E. Elliott C 1	1J Sec. 9, T30N-R9W	Amoco	Blanco Fruitland	148	6	0.50
Florance 101	101D Sec.29, T30N-R8W	Tenneco	Blanco Fruitland	149	0	0

FLORANCE 115

790' FSL 1025' FWL
Sec.10,T30N,R9W
San Juan County, N. M.



COMPLETION HISTORY
Pictured Cliffs:
Perf'd 3093-95, 79-88, 73-77 and
57-62 w/2JSPF. Perf'd in 300 gal
15% MCA. Frac;d w/35,000 gal 70%
quality foam and 30,000# 10/20
sand. AIR: 20 BPM @1900! spear-
head frac w/400 gal. 15% MCA.
Set Model "D" packer w/expendable
plug @3025'.
Fruitland:
Perf'd 2891-96, 82-84, 39-54 w/2
JSPF. Perf'd in 300 gal 15% MCA.
Frac'd w/25,000 gals 70% quality
foam and 30,000# 10/20 sand.
AIR: 20 BPM @ 2200#.
Landed tbg. in packer w/"F" type
seating nipple @3034 and sliding
sleeve @3021-24.

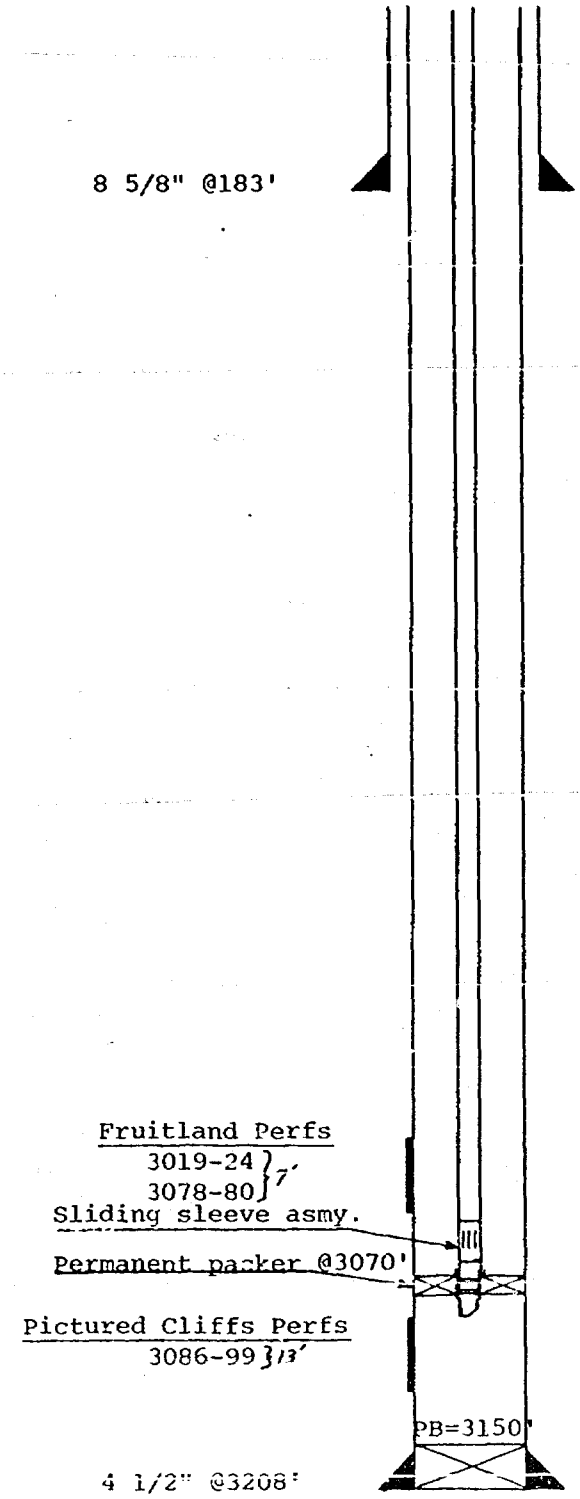
EXHIBIT #1

Appl Ex 3
Cs 6644 & 6674

1

FLORANCE 60R

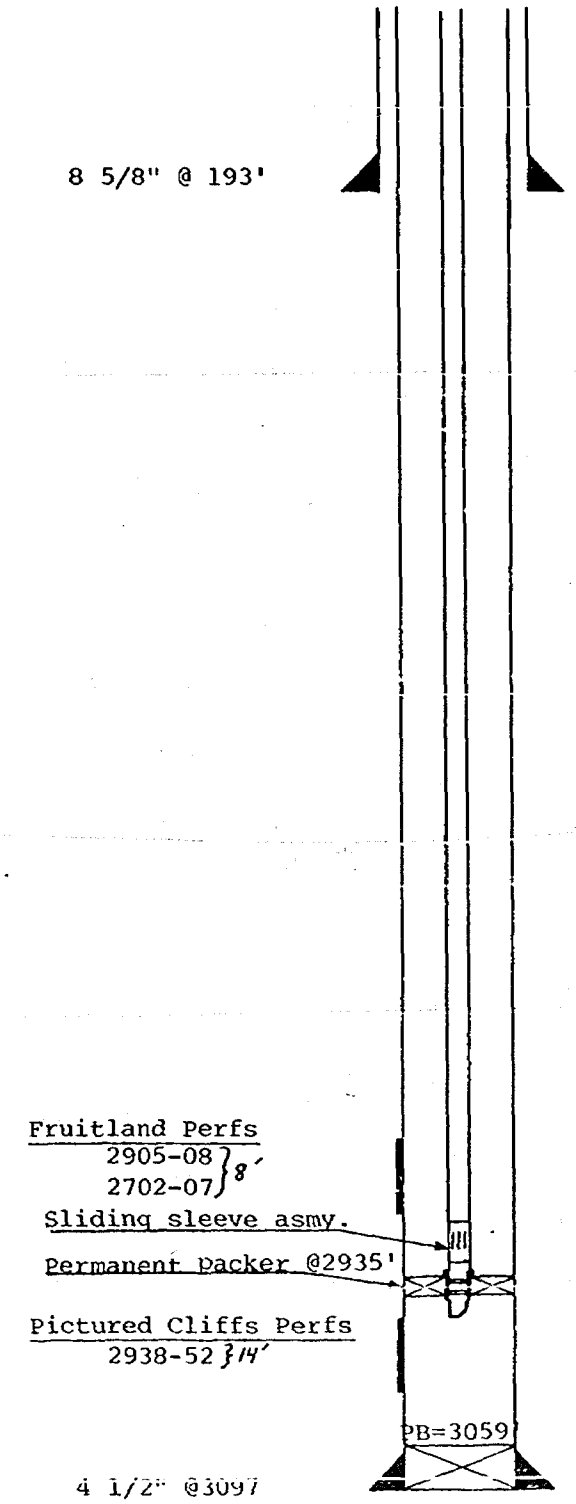
1540' FSL 800' FWL
Sec.1, T29N, R9W
San Juan County, N.M.



COMPLETION HISTORY
Pictured Cliffs:
Perf'd 3086-99 w/4JSPF
Fruitland:
Perf'd 3019-24, 78-80 w/4JSPF.
Frac'd single stage w/25000 gal
70% quality foam and 30,000# 10/20
sand. AIR: 20 BPM @1400#.
Perf'd in 300 gal 15% MCA and
spearhead frac w/500 gal 15% MCA.
Set Mod. "F" packer @3070.
Landed tbg. in packer w/"F" type
seating nipple @3079 and sliding
sleeve @ 306[illegible]-69.

STATE COM K-12

1640' FNL 990' FWL
Sec.16,T30N,R9W
San Juan County, N. M.



COMPLETION HISTORY
Pictured Cliffs:
Perf'd 2938-52 w/2JSPF
Fruitland:
Perf'd 2905-08, 2702-07 w/4 JSPF.
Frac'd single stage w/30,000 gal.
70% quality foam and 30,000#
10/20 sand. AIR: 20 BPM @1400#.
Perf'd in 300 gal 15% HCL and
spearhead frac w/500 gal 15% HCL.
Set Mod. "F" packer @2935'.
Landed tbg. in packer w/"f" type
seating nipple @2944 and sliding
sleeve @2931-34.

Tenneco Oil
A Tenneco Company

Penthouse
720 South Colorado Blvd.
Denver, Colorado 80222
(303) 758-7130

August 21, 1979

El Paso Natural Gas Co.
P.O. Box 990
Farmington, New Mexico 87401

Attention: Mr. C. E. Matthews
San Juan Production Mgr.

Re: Blanco Pictured Cliffs/Fruitland
Commingling

Gentlemen:

Tenneco Oil Company is petitioning the New Mexico Oil Conservation Commission to allow downhole commingling of three (3) of our recently completed Pictured Cliffs/Fruitland duals:

Florance 60R	Sec. 1, T-29-N, R-9-W, San Juan County, NM
Florance 115	Sec. 10, T-30-N, R-9-W, San Juan County, NM
State Com K-12	Sec. 16, T-30-N, R-9-W, San Juan County, NM

We believe this is the most efficient and economic method of handling present and anticipated water production from these zones. Please return a copy of this letter indicating whether or not you object to this proposal.

Yours very truly,

TENNECO OIL COMPANY

J. M. Lacey
Division Production Manager

JML/RCL/vc

X I do not object to this petition

____ I do object to this petition.

Carl E. Matthews
Signature

El Paso Natural Gas Co.
Company

EXHIBIT #2

Appl Ex 4
CO 6644 & 6674

Tenneco Oil
A Tenneco Company

Penthouse
720 South Colorado Blvd.
Denver, Colorado 80222
(303) 758-7130

August 21, 1979

El Paso Natural Gas Co.
P.O. Box 990
Farmington, New Mexico 87401

Attention: Mr. C. E. Matthews
San Juan Production Mgr.

Re: Blanco Pictured Cliffs/Fruitland
Commingling

Gentlemen:

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Florance 115	Sec. 10, T-30-N, R-9-W, San Juan County, NM
State Com K-12	Sec. 16, T-30-N, R-9-W, San Juan County, NM

We believe this is the most efficient and economic method of handling present and anticipated water production from these zones. Please return a copy of this letter indicating whether or not you object to this proposal.

Yours very truly,

TENNECO OIL COMPANY

J. M. Lacey
Division Production Manager

JML/RCL/vc

X I do not object to this petition

_____ I do object to this petition.

Carl E. Matthews
Signature

El Paso Natural Gas Co.
Company

PROPOSED PRODUCTION SPLIT

WELL	AOF, MCFD		PRODUCTION SPLIT %	
	PICTURED CLIFFS	COMMINGLED	PICTURED CLIFFS	FRUITLAND
Florance 60R	669	627	-	-*
Florance 115	~~635~~ 657	1562	41	59
State Com K-12	1016	1060	96	4

*This well is currently being retested. Excessive production of completion water from the Fruitland formation invalidated the commingled test for AOF. The water was initially thought to be formation water.

~~EXHIBIT~~ #3

Appl Ex 5
aCC 44 & 4674

MULTIPOINT AND ONE POINT BACK PRESSURE TES. FOR GAS WELL

Revised 9-1-65

Type Test: [XX] Initial [ ] Annual [ ] Special			Test Date: 9-10-79	
Company: Tenneco Oil Company		Connection		
Pool: Blanco		Formation: Pictured Cliff		Unit
Completion Date	Total Depth: 3208	Plug Back TD: 3150	Elevation	Farm or Lease Name: Florance
Csg. Size: 4 1/2 / Wt.: 10.5 / d / Set At: 3208		Perforations: From 3078 To 3099		Well No.: 60R
Tbg. Size: 2 3/8 / Wt. / d / Set At: 3070		Perforations: From 3019 To 3024		Unit: I / Sec.: 1 / Twp.: 29N / Rge.: 9W
Type Well – Single – Bradenhead – G.G. or G.O. Multiple		Packer Set At: 3070		County: San Juan
Producing Thru	Reservoir Temp. °F	Mean Annual Temp. °F	Baro. Press. – P_a	State: New Mexico

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
		.680						

	FLOW DATA				TUBING DATA		CASING DATA		
NO.	Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI					625		390		
1.	2 x 6 x .75				38	72	390	72	3 hours
2.									
3.									
4.									
5.									

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	11		50	.9887	1.213	1.00758	665
2.							
3.							
4.							
5.							

NO.	P_t	Temp. °R	T_f	Z
1.	.07	532	1.38	.985
2.				
3.				
4.				
5.				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
Critical Temperature _____ R _____ R

P_c 637 P_c^2 405769

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		50	2500	403269
2				
3				
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.0061$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.00526$

$AOF = Q\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 669$

Absolute Open Flow 669 Mcfd @ 15.025 Angle of Slope θ _____ Slope, n 85

Remarks: _____

Approved By Commission:	Conducted By:	Calculated By:	Checked By:

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test: [X] Initial [ ] Annual [ ] Special						Test Date: 9-10-79	
Company: Tenneco Oil Company				Connection			
Pool: Blanco				Formation: Pictured Cliff		Unit	
Completion Date		Total Depth: 3202		Plug Back TD: 3106	Elevation	Farm or Lease Name: Florance	
Csg. Size: 5 1/2	Wt.	d	Set At: 3202	Perforations: From 3095	To 3057	Well No.: 115	
Tbg. Size: 2 3/8	Wt.	d	Set At: 3025	Perforations: From 2839	To 2896	Unit: 10 Sec.: 30 Twp.: 9 Rge.	
Type Well – Single – Bradenhead – G.G. or G.O. Multiple				Packer Set At: 3025		County: San Juan	
Producing Thru	Reservoir Temp. °F		Mean Annual Temp. °F	Baro. Press. – P_a		State: New Mexico	
L	H	Cg: .680	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps

FLOW DATA					TUBING DATA		CASING DATA		
NO.	Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI					1000		1000		
1.	2 x 6 x .75				36	74	1000	74	3 hours
2.									
3.									
4.									
5.									

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	11		48	.9868	1.213	1.00707	636
2.							
3.							
4.							
5.							

NO.	R_t	Temp. °R	T_r	Z
1.	.07	534	1.39	.986
2.				
3.				
4.				
5.				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
Critical Temperature _____ R _____ R

P_c 1012 P_c^2 1024144

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		48	2304	1021840
2				
3				
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.00225$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.0019$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 637$

Absolute Open Flow 637 Mcfd @ 15.025 | Angle of Slope θ _____ | Slope, n 85

Remarks: _____

Approved By Commission:	Conducted By:	Calculated By:	Checked By:

Form C-122
Revised 9-1-65

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test: [ ] Initial [ ] Annual [X] Special			Test Date: 9-19-79	
Company: Tenneco Oil Company	Connection			
Pool: Blanco	Formation: Pictured Cliff/Fruitland			Unit
Completion Date	Total Depth: 3202	Plug Back TD: 3106	Elevation	Farm or Lease Name: Florance
Csg. Size: 5 1/2 / Wt. / d / Set At: 3202	Perforations: From 3095 To 3057			Well No.: 115
Tbg. Size: 2 3/8 / Wt. / d / Set At: 3025	Perforations: From 2839 To 2896			Unit: D / Sec.: 10 / Twp.: 30 / Rge.: 9
Type Well – Single – Bradenhead – G.G. or G.O. Multiple		Packer Set At: 3025		County: San Juan
Producing Thru	Reservoir Temp. °F	Mean Annual Temp. °F	Baro. Press. – P_a	State: New Mexico
L	H	Gg: .680	% CO_2	% N_2 / % H_2S / Prover / Meter Run / Taps

FLOW DATA / TUBING DATA / CASING DATA

NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Tubing Press. p.s.i.g.	Tubing Temp. °F	Casing Press. p.s.i.g.	Casing Temp. °F	Duration of Flow
SI							1025		1025		
1.	2	x 6	x .75				104	74	216	74	3 hours
2.											
3.											
4.											
5.											

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	11		116	.9868	1.213	1.01273	1546
2.							
3.							
4.							
5.							

NO.	P_t	Temp. °R	T_r	Z
1.	.17	532	1.38	.975
2.				
3.				
4.				
5.				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
Critical Temperature _____ R _____ R

P_c 1037 P_c^2 1075369

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		116	13456	1061913
2				
3				
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.01267$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.0107$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1562$

Absolute Open Flow 1562 Mcfd @ 15.025 Angle of Slope θ _____ Slope, n .85

Remarks: _____

Approved By Commission:	Conducted By:	Calculated By:	Checked By:

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Revised 6-1-65

Type Test: [X] Initial [ ] Annual [ ] Special			Test Date: 9-10-79
Company: Tenneco Oil Company	Connection		
Pool: Blanco	Formation: Pictured Cliff		Unit
Completion Date: 7/10/79	Total Depth: 3100'	Plug Back TD: 3059'	Elevation
Farm or Lease Name: State Com			
Csg. Size: 4 1/2 / Wt. / d / Set At: 3097	Perforations: From 2952 To 2702		Well No.: K-12
Tbg. Size: 1 1/4 / Wt. / d / Set At: 2940	Perforations: From To		Unit: E / Sec.: 16 / Twp.: 30N / Rge.: 9W
Type Well – Single – Bradenhead – G.G. or G.O. Multiple		Packer Set At: 2930	County: San Juan
Producing Thru	Reservoir Temp. °F	Mean Annual Temp. °F	Baro. Press. – P_a
			State: New Mexico

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
		.680						

	FLOW DATA				TUBING DATA		CASING DATA		
NO.	Prover Line Size	X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI						385		795		
1.	2	x 6 x .75				62	72	795	72	3 hours
2.										
3.										
4.										
5.										

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	11		74	.9887	1.213	1.0096	986
2.							
3.							
4.							
5.							

NO.	P_t	Temp. °R	T_r	Z
1.	.11	532	1.38	.981
2.				
3.				
4.				
5.				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
Critical Temperature _____ R _____ R

P_c 397 P_c^2 157609

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		74	5476	152133
2				
3				
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.0359$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.0305$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1016$

Absolute Open Flow 1016 Mcfd @ 15.025 | Angle of Slope θ _____ | Slope, n 85

Remarks: _____

Approved By Commission:	Conducted By:	Calculated By:	Checked By:

NEW MEXICO OIL CONSERVATION COMMISSION
Form C-122
Revised 9-1-65

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test: [ ] Initial [ ] Annual [X] Special				Test Date: 9-18-79	
Company: Tenneco Oil Company		Connection			
Pool: Blanco		Formation: Pictured Cliff/Fruitland			Unit
Completion Date: 7/10/79	Total Depth: 3100'		Plug Back TD: 3059'	Elevation	Farm or Lease Name: State Com K
Csg. Size: 4 1/2" / Wt. / d / Set At: 3097			Perforations: From 2952 To 2702		Well No.: 12
Tbg. Size: 1 1/4" / Wt. / d / Set At: 2940			Perforations: From 2938 To 2952		Unit: E / Sec.: 16 / Twp.: 30N / Rge.: 9W
Type Well – Single – Bradenhead – G.G. or G.O. Multiple			Packer Set At: 2930		County: San Juan
Producing Thru	Reservoir Temp. °F	Mean Annual Temp. °F	Baro. Press. – P_a		State: New Mexico
L	H	Gg: .680	% CO_2	% N_2	% H_2S / Prover / Meter Run / Taps

FLOW DATA / TUBING DATA / CASING DATA

NO.	Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Tubing Press. p.s.i.g.	Tubing Temp. °F	Casing Press. p.s.i.g.	Casing Temp. °F	Duration of Flow
SI					380		820		
1.	2 x 6 x .75				65	72	172	72	3 hours
2.									
3.									
4.									
5.									

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	11		77	.9887	1.213	1.0096	1026
2.							
3.							
4.							
5.							

NO.	P_t	Temp. °R	T_r	Z
1.	.12	532	1.38	.981
2.				
3.				
4.				
5.				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
Critical Temperature _____ R _____ R

P_c 392 P_c^2 153664

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		77	5929	147735
2				
3				
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.040$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.0340$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1060$

Absolute Open Flow 1060 Mcfd @ 15.025 Angle of Slope θ _____ Slope, n .85

Remarks: _____

Approved By Commission:	Conducted By:	Calculated By:	Checked By:

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
Oil Conservation Division
State Land Office Bldg.
Santa Fe, New Mexico
19 September 1979

EXAMINER HEARING

IN THE MATTER OF:

Application of Tenneco Oil Corporation for downhole commingling, San Juan County, New Mexico.

CASE 6644

BEFORE: Daniel S. Nutter

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 for the Division
State Land Office Bldg.
Santa Fe, New Mexico 87503

For the Applicant: W. Thomas Kellahin, Esq.
KELLAHIN & KELLAHIN
500 Don Gaspar
Santa Fe, New Mexico 87501

MR. NUTTER: Call next Case Number 6644.

MR. PADILLA: Application of Tenneco Oil Corporation for downhole commingling, San Juan County, New Mexico.

MR. KELLAHIN: Tom Kellahin of Santa Fe, New Mexico, appearing on behalf of the applicant.

If the Examiner please, we'd like to have this case continued to the hearing on October 2nd, I believe it is.

MR. NUTTER: Case Number 6644 will be continued to the Examiner Hearing scheduled to be held at this same place at 9:00 o'clock a. m. October 2nd, 1979.

(Hearing concluded.)

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
3010 Plaza Blanca (505) 471-2462
Santa Fe, New Mexico 87501

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 said hearing, prepared by me to the best of my ability from my notes taken at the time of the hearing.

Sally W. Boyd C.S.R.
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. 6644, heard by me on 9/19 19 79.

, Examiner
Oil Conservation Division

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
2020 Plaza Blanca (505) 471-2462
Santa Fe, New Mexico 87501

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
Oil Conservation Division
State Land Office Bldg.
Santa Fe, New Mexico
19 September 1979

EXAMINER HEARING

IN THE MATTER OF:

Application of Tenneco Oil Corporation for downhole commingling, San Juan County, New Mexico.

CASE 6644

BEFORE: Daniel S. Nutter

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 for the Division
State Land Office Bldg.
Santa Fe, New Mexico 87503

For the Applicant: W. Thomas Kellahin, Esq.
KELLAHIN & KELLAHIN
500 Don Gaspar
Santa Fe, New Mexico 87501

MR. NUTTER: Call next Case Number 6644.

MR. PADILLA: Application of Tenneco Oil Corporation for downhole commingling, San Juan County, New Mexico.

MR. KELLAHIN: Tom Kellahin of Santa Fe, New Mexico, appearing on behalf of the applicant.

If the Examiner please, we'd like to have this case continued to the hearing on October 2nd, I believe it is.

MR. NUTTER: Case Number 6644 will be continued to the Examiner Hearing scheduled to be held at this same place at 9:00 o'clock a. m. October 2nd, 1979.

(Hearing concluded.)

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
2010 Plaza Blanca (505) 471-2465
Santa Fe, New Mexico 87501

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
3020 Plaza Blanca (505) 471-2462
Santa Fe, New Mexico 87501

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 said hearing, prepared by me to the best of my ability from my notes taken at the time of the hearing.

Sally W. Boyd, C.S.R.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 6644 heard by me on 9/19 1979.

, Examiner
Oil Conservation Division

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
Oil Conservation Division
State Land Office Building
Santa Fe, New Mexico
5 September 1979

EXAMINER HEARING

IN THE MATTER OF:

Application of Tenneco Oil Corporation for downhole commingling, San Juan County, New Mexico.

CASE 6644

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 for the Division
State Land Office Bldg.
Santa Fe, New Mexico 87503

For the Applicant: W. Thomas Kellahin, Esq.
KELLAHIN & KELLAHIN
500 Don Gaspar
Santa Fe, New Mexico 87501

MR. STAMETS: We will call next Case 6644.

MR. PADILLA: Application of Tenneco Oil Corporation for downhole commingling, San Juan County, New Mexico.

MR. KELLAHIN: Tom Kellahin of Santa Fe, New Mexico, appearing on behalf of the applicant.

I'd request that this case be continued to the hearing on September 19th.

MR. STAMETS: This case will be so continued.

(Hearing concluded.)

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
3020 Plaza Blanca (505) 471-2462
Santa Fe, New Mexico 87501

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
1010 Plaza Blanca (505) 471-2462
Santa Fe, New Mexico 87501

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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 said hearing, prepared by me to the best of my ability, from my notes taken at the time of the hearing.

Sally W. Boyd C.S.R.
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. 6644 heard by me on 9-5 19 79.
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
5 September 1979

EXAMINER HEARING

IN THE MATTER OF:

Application of Tenneco Oil Corporation for downhole commingling, San Juan County, New Mexico.

CASE 6644

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 for the Division
State Land Office Bldg.
Santa Fe, New Mexico 87503

For the Applicant: W. Thomas Kellahin, Esq.
KELLAHIN & KELLAHIN
500 Don Gaspar
Santa Fe, New Mexico 87501

MR. STAMETS: We will call next Case 6644.

MR. PADILLA: Application of Tenneco Oil Corporation for downhole commingling, San Juan County, New Mexico.

MR. KELLAHIN: Tom Kellahin of Santa Fe, New Mexico, appearing on behalf of the applicant.

I'd request that this case be continued to the hearing on September 19th.

MR. STAMETS: This case will be so continued.

(Hearing concluded.)

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
3020 Plaza Blanca (505) 471-2462
Santa Fe, New Mexico 87501

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
1020 Plaza Blanca (505) 471-3462
Santa Fe, New Mexico 87501

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 said hearing, prepared by me to the best of my ability, from my notes taken at the time of the hearing.

Sally W. Boyd, C.S.R.

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

_____, Examiner
Oil Conservation Division

CASE 6668: Application of Delta Drilling Company for pool creation and special pool rules, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new oil pool for Bone Spring production for its SCB Unit Well No. 3 in Unit G of Section 23, Township 23 South, Range 28 East, and special rules therefor, including 80-acre spacing.

CASE 6669: Application of Mesa Petroleum Company for the amendment of Order No. R-6078, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-6078 to cover the Wolfcamp and Pennsylvanian formations in the compulsory pooling of the E/2 of Section 10, Township 16 South, Range 27 East, rather than the Morrow formation only.

CASE 6644: (Continued from September 5, 1979, Examiner Hearing)

Application of Tenneco Oil Corporation for downhole commingling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Fruitland and Pictured Cliffs production in the wellbores of its State K Com Well No. 12 located in Unit E of Section 16, Township 30 North, Range 9 West, and its Florence Well No. 60R in Unit L of Section 1, Township 29 North, Range 9 West.

CASE 6670: Application of BTA Oil Producers for pool creation and special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Devonian gas pool for its 7811 JV-P Rojo Well No. 1 located in Unit D of Section 27, Township 25 South, Range 33 East, and special rules therefor, including 640-acre gas well spacing.

CASE 6671: Application of Chapman and Schneider for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in the Seven Rivers Reef formation in the open-hole interval from 3422 feet to 3504 feet in its I. B. Ogg "A" Well No. 3 located in Unit E of Section 35, Township 24 South, Range 36 East, Jalmat Pool.

CASE 6672: Application of Coquina Oil Corporation for an exception to Rule 303C, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the Division's Rule 303C to permit its Vivian Well No. 1 located in Unit F of Section 30, Township 22 South, Range 38 East, in which Drinkard and Granite Wash production is commingled in the wellbore, to produce in excess of the 50-barrel limit imposed by said rule.

CASE 6673: Application of Conoco Inc. for a non-standard proration unit, unorthodox well locations, and simultaneous dedication, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 440-acre non-standard gas proration unit comprising the SW/4 and S/2 NW/4 of Section 17 and the N/2 NE/4, SE/4 NE/4, and N/2 SE/4 of Section 18, all in Township 21 South, Range 36 East, Eumont Pool, to be simultaneously dedicated to the following wells at unorthodox locations: Meyer A-1 Wells Nos. 11 in Unit K of Section 17 and 6 and 14 in Units B and J of Section 18.

CASE 6580: (Continued from August 22, 1979, Examiner Hearing)

Application of Continental Oil Company for a carbon dioxide injection project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to initiate a pilot carbon dioxide injection project in the Grayburg-San Andres formation in Units H and I of Section 20, Township 17 South, Range 32 East, Maljamar Pool, for tertiary recovery purposes.

Dockets Nos. 36-79 and 37-79 are tentatively set for September 19 and October 3, 1979. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - SEPTEMBER 5, 1979

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

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

CASE 6640: In the matter of the hearing called by the Oil Conservation Division on its own motion to permit Miles Production Company, National Surety Corporation, and all other interested parties to appear and show cause why the Thomas Drought Well No. 1 located in Unit A of Section 4, Township 15 North, Range 6 West, McKinley County, New Mexico, should not be plugged and abandoned in accordance with a Division-approved plugging program.

CASE 6641: Application of Yates Petroleum Corporation for a unit agreement, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Willow Creek Unit Area, comprising 25,881 acres, more or less, of State, federal, and fee lands in Townships 4 and 5 South, Range 25 East.

CASE 6642: Application of Bass Enterprises Production Company for pool contraction and creation, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the contraction of the Indian Flats-Morrow Gas Pool by the deletion of the S/2 of Section 25, Township 21 South, Range 28 East, and the creation of a new Morrow gas pool comprising said lands for its Big Eddy Unit Well No. 66 in Unit K of said Section 25.

CASE 6635: (Continued from August 22, 1979, Examiner Hearing)

Application of Exxon Corporation for an unorthodox well location and simultaneous dedication, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the simultaneous dedication of the W/2 of Section 31, Township 20 South, Range 37 East, Eumont Pool, to its Aggies State Well No. 4 located in Unit F, and to its Well No. 13, at an unorthodox location 660 feet from the South line and 1650 feet from the West line, both in said Section 31.

CASE 6636: (Continued from August 22, 1979, Examiner Hearing)

Application of Exxon Corporation for an unotthodox well location and simultaneous dedication, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the simultaneous dedication of all of Section 23, Township 21 South, Range 36 East, Eumont Pool, to its New Mexico "G" State Well No. 5 located in Unit E, and to its Well No. 20, at an unorthodox location in Unit M, both in said Section 23.

CASE 6637: (Continued from August 22, 1979, Examiner Hearing)

Application of Exxon Corporation for an unorthodox well location and simultaneous dedication, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the simultaneous dedication of the E/2 of Section 10, Township 21 South, Range 36 East, Eumont Pool, to its Knox Well No. 1 located in Unit J, and to its Well No. 13, at an unorthodox location 1650 feet from the North line and 990 feet from the East line, both in said Section 10.

CASE 6643: Application of BTA Oil Producers for the amendment of Order No. R-5905, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-5905 to provide that the N/2 of Section 27, Township 25 South, Range 33 East, be dedicated to its 7811 JV-P Rojo Well No. 1 rather than the W/2.

CASE 6655: Application of BTA Oil Producers for an unorthodox well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its 7811 JV-P Rojo "B" Well No. 1, a Devonian test to be located 660 feet from the South line and 1980 feet from the East line of Section 28, Township 25 South, Range 33 East, the E/2 of said Section 28 to be dedicated to the well.

CASE 6644: Application of Tenneco Oil Corporation for downhole commingling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Fruitland and Pictured Cliffs production in the wellbores of its State K Com Well No. 12 located in Unit E of Section 16, Township 30 North, Range 9 West, and its Florence Well No. 60R in Unit L of Section 1, Township 29 North, Range 9 West.

KELLAHIN and KELLAHIN
Attorneys at Law
500 Don Gaspar Avenue
Post Office Box 1769
Santa Fe, New Mexico 87501

Jason Kellahin
W. Thomas Kellahin
Karen Aubrey

Telephone 982-4285
Area Code 505

August 6, 1979

Mr. Joe Ramey
Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Tenneco
Downhole Commingling

Dear Joe:

Please set the enclosed Application for hearing on September 5, 1979.

Very truly yours,

W. Thomas Kellahin

WTK:eps
Enclosure

cc: Millard Carr

KELLAHIN and KELLAHIN
Attorneys at Law
500 Don Gaspar Avenue
Post Office Box 1769
Santa Fe, New Mexico 87501

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August 6, 1979

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Re: Tenneco
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Very truly yours,

W. Thomas Kellahin

WTK:eps
Enclosure

cc: Millard Carr

BEFORE THE

NEW MEXICO OIL CONSERVATION DIVISION

State Com K #12
Case 6644

IN THE MATTER OF THE APPLICATION OF TENNECO OIL CORPORATION FOR DOWNHOLE COMMINGLING SAN JUAN COUNTY, NEW MEXICO.

A P P L I C A T I O N

COMES NOW TENNECO OIL CORPORATION and applies to the Oil Conservation Division of New Mexico for approval to downhole commingle production from the Fruitland and Pictured Cliffs formations in San Juan County, New Mexico, and in support thereof would show the Division:

1. Applicant is an owner and operator of acreage involved in this application.

2. Applicant seeks approval to commingle production from the Fruitland and Pictured Cliffs formations in the wellbore of its State Com K No. 12 well located in Unit E of Section 16, T30N, R9W, NMPM, San Juan County, New Mexico.

3. That the proration unit for the subject well is the NW/4 of said section.

4. That approval of this application will conform to the requirements of New Mexico Oil Conservation Division Rule No. 303(c), will result in the production of hydrocarbons that would not otherwise be produced, will prevent waste, and will not cause any damage to either the Fruitland or Pictured Cliffs formations. Correlative rights including those of offset operators will not be impaired.

WHEREFORE, applicant prays that this application be set for hearing before the Division's duly appointed examiner, and that after notice and hearing as provided by law, the Division enter its order approving commingling as prayed for.

Respectfully submitted,

TENNECO OIL CORPORATION

By _____

Kellahin & Kellahin
P. O. Box 1769
Santa Fe, New Mexico 87501

Attorneys for Applicant

BEFORE THE

NEW MEXICO OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION OF TENNECO OIL CORPORATION FOR DOWNHOLE COMMINGLING SAN JUAN COUNTY, NEW MEXICO.

Case 6644

A P P L I C A T I O N

COMES NOW TENNECO OIL CORPORATION and applies to the Oil Conservation Division of New Mexico for approval to downhole commingle production from the Fruitland and Pictured Cliffs formations in San Juan County, New Mexico, and in support thereof would show the Division:

1. Applicant is an owner and operator of acreage involved in this application.

2. Applicant seeks approval to commingle production from the Fruitland and Pictured Cliffs formations in the wellbore of its State Com K No. 12 well located in Unit E of Section 16, T30N, R9W, NMPM, San Juan County, New Mexico.

3. That the proration unit for the subject well is the NW/4 of said section.

4. That approval of this application will conform to the requirements of New Mexico Oil Conservation Division Rule No. 303(c), will result in the production of hydrocarbons that would not otherwise be produced, will prevent waste, and will not cause any damage to either the Fruitland or Pictured Cliffs formations. Correlative rights including those of offset operators will not be impaired.

WHEREFORE, applicant prays that this application be set for hearing before the Division's duly appointed examiner, and that after notice and hearing as provided by law, the Division enter its order approving commingling as prayed for.

Respectfully submitted,

TENNECO OIL CORPORATION

By W. T. Kellahin

Kellahin & Kellahin
P. O. Box 1769
Santa Fe, New Mexico 87501

Attorneys for Applicant

BEFORE THE

NEW MEXICO OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION OF TENNECO OIL CORPORATION FOR DOWNHOLE COMMINGLING SAN JUAN COUNTY, NEW MEXICO.

Case 6644

A P P L I C A T I O N

COMES NOW TENNECO OIL CORPORATION and applies to the Oil Conservation Division of New Mexico for approval to downhole commingle production from the Fruitland and Pictured Cliffs formations in San Juan County, New Mexico, and in support thereof would show the Division:

1. Applicant is an owner and operator of acreage involved in this application.

2. Applicant seeks approval to commingle production from the Fruitland and Pictured Cliffs formations in the wellbore of its State Com K No. 12 well located in Unit E of Section 16, T30N, R9W, NMPM, San Juan County, New Mexico.

3. That the proration unit for the subject well is the NW/4 of said section.

4. That approval of this application will conform to the requirements of New Mexico Oil Conservation Division Rule No. 303(c), will result in the production of hydrocarbons that would not otherwise be produced, will prevent waste, and will not cause any damage to either the Fruitland or Pictured Cliffs formations. Correlative rights including those of offset operators will not be impaired.

WHEREFORE, applicant prays that this application be set for hearing before the Division's duly appointed examiner, and that after notice and hearing as provided by law, the Division enter its order approving commingling as prayed for.

Respectfully submitted,

TENNECO OIL CORPORATION

By _____

Kellahin & Kellahin
P. O. Box 1769
Santa Fe, New Mexico 87501

Attorneys for Applicant

BEFORE THE

NEW MEXICO OIL CONSERVATION DIVISION

Case 6614

IN THE MATTER OF THE APPLICATION OF TENNECO OIL CORPORATION FOR DOWNHOLE COMMINGLING SAN JUAN COUNTY, NEW MEXICO.

Florence #60R

A P P L I C A T I O N

COMES NOW TENNECO OIL CORPORATION and applies to the Oil Conservation Division of New Mexico for approval to downhole commingle production from the Fruitland and Fictured Cliffs formations in San Juan County, New Mexico, and in support thereof would show the Division:

1. Applicant is an owner and operator of acreage involved in this application.

2. Applicant seeks approval to commingle production from the Fruitland and Pictured Cliffs formations in the wellbore of its Florence No. 60R well located in Unit L of Section 1, T29N, R9W, NMPM, San Juan County, New Mexico.

3. That the proration unit for the subject well is the SW/4 of said section.

4. That approval of this application will conform to the requirements of New Mexico Oil Conservation Division Rule No. 303(c), will result in the production of hydrocarbons that would not otherwise be produced, will prevent waste, and will not cause any damage to either the Fruitland or Pictured Cliffs formations. Correlative rights including those of offset operators will not be impaired.

WHEREFORE, applicant prays that this application be set for hearing before the Division's duly appointed examiner, and that after notice and hearing as provided by law, the Division enter its order approving commingling as prayed for.

Respectfully submitted,

TENNECO OIL CORPORATION

By _____

Kellahin & Kellahin
P. O. Box 1769
Santa Fe, New Mexico 87501

Attorneys for Applicant

BEFORE THE

NEW MEXICO OIL CONSERVATION DIVISION

IN THE MATTER OF THE
APPLICATION OF TENNECO
OIL CORPORATION FOR
DOWNHOLE COMMINGLING
SAN JUAN COUNTY, NEW
MEXICO.

Case 6644

A P P L I C A T I O N

COMES NOW TENNECO OIL CORPORATION and applies to the Oil Conservation Division of New Mexico for approval to downhole commingle production from the Fruitland and Pictured Cliffs formations in San Juan County, New Mexico, and in support thereof would show the Division:

1. Applicant is an owner and operator of acreage involved in this application.

2. Applicant seeks approval to commingle production from the Fruitland and Pictured Cliffs formations in the wellbore of its Florence No. 60R well located in Unit L of Section 1, T29N, R9W, NMPM, San Juan County, New Mexico.

3. That the proration unit for the subject well is the SW/4 of said section.

4. That approval of this application will conform to the requirements of New Mexico Oil Conservation Division Rule No. 303(c), will result in the production of hydrocarbons that would not otherwise be produced, will prevent waste, and will not cause any damage to either the Fruitland or Pictured Cliffs formations. Correlative rights including those of offset operators will not be impaired.

WHEREFORE, applicant prays that this application be set for hearing before the Division's duly appointed examiner, and that after notice and hearing as provided by law, the Division enter its order approving commingling as prayed for.

Respectfully submitted,

TENNECO OIL CORPORATION

By _____

Kellahin & Kellahin
P. O. Box 1769
Santa Fe, New Mexico 87501

Attorneys for Applicant

BEFORE THE

NEW MEXICO OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION OF TENNECO OIL CORPORATION FOR DOWNHOLE COMMINGLING SAN JUAN COUNTY, NEW MEXICO.

Case 6644

A P P L I C A T I O N

COMES NOW TENNECO OIL CORPORATION and applies to the Oil Conservation Division of New Mexico for approval to downhole commingle production from the Fruitland and Pictured Cliffs formations in San Juan County, New Mexico, and in support thereof would show the Division:

1. Applicant is an owner and operator of acreage involved in this application.

2. Applicant seeks approval to commingle production from the Fruitland and Pictured Cliffs formations in the wellbore of its Florence No. 60R well located in Unit L of Section 1, T29N, R9W, NMPM, San Juan County, New Mexico.

3. That the proration unit for the subject well is the SW/4 of said section.

4. That approval of this application will conform to the requirements of New Mexico Oil Conservation Division Rule No. 303(c), will result in the production of hydrocarbons that would not otherwise be produced, will prevent waste, and will not cause any damage to either the Fruitland or Pictured Cliffs formations. Correlative rights including those of offset operators will not be impaired.

WHEREFORE, applicant prays that this application be set for hearing before the Division's duly appointed examiner, and that after notice and hearing as provided by law, the Division enter its order approving commingling as prayed for.

Respectfully submitted,

TENNECO OIL CORPORATION

By _____

Kellahin & Kellahin
P. O. Box 1769
Santa Fe, New Mexico 87501

Attorneys for Applicant

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. 6644

Order No. R-6154

APPLICATION OF TENNECO OIL CORPORATION

FOR DOWNHOLE COMMINGLING, SAN JUAN

COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on October 2, 19 79, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this _____ day of October, 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, Tenneco Oil Corporation, is the owner and operator of the State K Com Well No. 12, located in Unit E of Section 16, Township 30 North, Range 9 West, NMPM, San Juan County, New Mexico, and its Florence Well No. 60R in Unit L of Section 1, T-29-N, R-9-W,

(3) That the applicant seeks authority to commingle Fruitland and Pictured Cliffs production within the wellbore of each of the above-described wells.

(4) That from the Fruitland zone, the subject wells ~~is~~ are capable of low ~~marginal~~ rates production only.

(5) That from the Pictured Cliffs zone, the subject well, ~~is~~ are capable of low ~~marginal~~ rates of production only.

(6) That the proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not violate correlative rights.

(7) That the reservoir characteristics of each of the subject zones are such that underground waste would not be caused by the proposed commingling provided that the well is not shut-in for an extended period.

(8) That to afford the Division the opportunity to assess the potential for waste and to expeditiously order appropriate remedial action, the operator should notify the Aztec district office of the Division any time either of the subject wells is shut-in for 7 consecutive days.

(9) That in order to allocate the commingled production to each of the commingled zones in the subject well, _____ percent of the commingled _____ production should be allocated to the Fruitland zone, and _____ percent of the commingled _____ production to the Pictured Cliffs zone.

(ALTERNATE)

(9) That in order to allocate the commingled production to each of the commingled zones in ~~the~~ said wells, applicant should consult with the supervisor of the Aztec district office of the Division and determine an allocation formula for each of the production zones.

IT IS THEREFORE ORDERED:

(1) That the applicant, Tenneco Oil Corporation, is hereby authorized to commingle Fruitland and Pictured Cliffs production within the wellbores of ~~the~~ State K Com Well No. 12, located in Unit E of Section 16, Township 30 North, Range 9 West, and the Florence Well No. 60R in Unit L of Section 1, Township 29 North, R-9-W NMPM, San Juan County, New Mexico.

(2) That the applicant shall consult with the Supervisor of the Aztec district office of the Division and determine an allocation formula for the allocation of production to each zone in each of the subject wells.

(ALTERNATE)

(2) That _____ percent of the commingled _____ production shall be allocated to the Fruitland zone and _____ percent of the commingled _____ production shall be allocated to the Pictured Cliffs zone.

(3) That the operator of the subject well shall immediately notify the Division's Aztec district office any time ~~the~~ either well has been shut-in for 7 consecutive days and shall concurrently present, to the Division, a plan for remedial action.

(4) 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.