

RELEASE 11-29-93 CTB

BARBER OIL, INC. OIL CONSERVATION DIVISION
111 West Mermod RECEIVED
Post Office Box 1658
CARLSBAD, NEW MEXICO 88220 NOV 10 AM 9 48
(505) 887-2566

November 8, 1993

Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87504-2088

Re: Commingling Agreement
Barber Field — BARBER YATES POOL
Eddy County, New Mexico

Gentlemen:

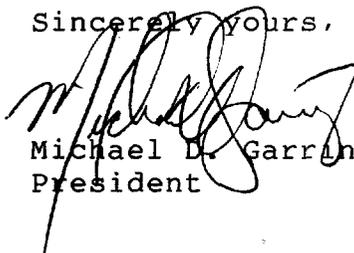
On July 13, 1992, Barber Oil, Inc. submitted to your office a request for approval for a commingling agreement. We were told at that time we would need to obtain the approval of the office of the Commissioner of Public Lands for the State of New Mexico.

Please find enclosed, in chronological order, the following photocopies of documents we hereby submit for approval of a commingling agreement:

1. Letter of July 13, 1992 to BLM from Barber Oil
2. Letter of January 5, 1993 requesting an application to commingle and submission of filing fee
3. Formal Application submitted to the Commissioner of Public Lands with exhibits
4. Letter of January 26, 1993 submitted as an addendum to the Formal Application
5. Letter of August 27, 1993 from the Commissioner's office to Barber requesting a test of produced fluids
6. Letter of October 21, 1993 with results of produced fluids tests and allocation percentage
7. Letter of October 28, 1993 granting approval of the exception to commingle production and off-lease storage

Barber Oil, Inc. herewith respectfully requests OCD approval of this commingling agreement as submitted. Please note a formal request has also been made for approval to the BLM as of this date.

Sincerely yours,


Michael D. Garringer
President



State of New Mexico

OFFICE OF THE

Commissioner of Public Lands

Santa Fe

P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

JIM BACA
COMMISSIONER

January 5, 1993

Barber Oil, Inc.
111 West Mermod
P.O. Box 1658
Carlsbad, New Mexico 88220

Attention: Mr. Michael D. Garringer

Re: Exception to Commingle Production
Colglazier Federal - LC-029096-C
State Lease B-2386 - Assignment #1
State Lease B-2386 - Assignment #2
Stovall-Wood Fee Lease

Dear Mr. Garringer:

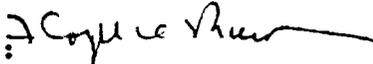
On December 18, 1992, Mr. Robert S. Light, representing your company, visited with this office to discuss a pending application from Barber Oil Company with the New Mexico Oil Conservation Division regarding your request to commingle the production from the above captioned wells.

We would like to formally review your request and therefore need a formal application for commingling approval to be submitted to this office. We would also like included in your application all the required information as outlined in the enclosed Commingle Pre-Application form and a thirty (\$30.00) dollar filing fee.

If you have any questions, or if we may be of further help, please contact Pete Martinez at (505) 827-5791.

Very truly yours,

JIM BACA
COMMISSIONER OF PUBLIC LANDS

BY: 
FLOYD O. PRANDO, Director
Oil/Gas and Minerals Division
(505) 827-5744
JB/FOP/pm
encls.

cc: Reader File
OCD

BARBER OIL, INC.
111 West Mermod
Post Office Box 1658
CARLSBAD, NEW MEXICO 88220
(505) 887-2566

January 26, 1993

State of New Mexico
Commissioner of Public Lands
P. O. Box 1148
Santa Fe, NM 87504-1148

ATTN: Mr. Pete Martinez

Re: Exception to Comingle Production
Barber Pool
Eddy County, NM

Dear Mr. Martinez:

In response to your telephone call of January 25, 1993 and as an addendum to our "Formal Application For Exception To Commingle Production and Off Lease Store Production" dated January 12, 1993, please be advised that the percentages allocated to each lease were arrived as follows:

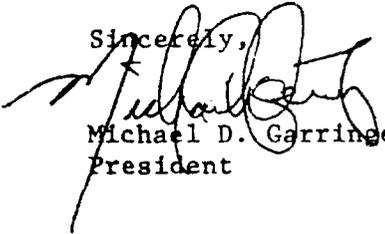
From the 1990 Annual Report of the New Mexico Oil & Gas Engineering Committee, Volume 1-A (Southeast New Mexico) we took accumulative production for each of the four leases which totals 1,066,277 BBls and divided that number into the accumulative total for each lease as follows:

Colglazier Federal	$\frac{237,778}{1,066,277}$	= 22.299834% = 22
State (B-2386-1)	$\frac{173,757}{1,066,277}$	= 16.295672% = 16
State "A" (B-2386-2)	$\frac{188,955}{1,066,277}$	= 17.721005% = 18
Stovall-Wood Fee	$\frac{465,787}{1,066,277}$	= 43.683489% = 44

We feel this method of allocation is the most meaningful as it represents actual production from inception through 1990.

If we may provide any further information, please so advise.

Sincerely,


Michael D. Garringer
President



RAY B. POWELL
COMMISSIONER

State of New Mexico

OFFICE OF THE

Commissioner of Public Lands

Santa Fe

P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

August 27, 1993

Certified Mail
Return Receipt Requested

Barber Oil, Inc.
P.O. Box 1658
Carlsbad, New Mexico 88220

Dear Mr. Garringer:

A lengthy study of the facts was undertaken regarding the past and current situation of the state wells on the Barber Field lease(s), located in Sec. 17, T-20-S, R-30-E, Eddy County, New Mexico. After careful review of this information we feel that under Rule 1.053, we can not allow the non-allocated commingling of state lease oil production with federal and fee oil production.

We therefore request that the three (3) state lease wells be tested to determine their productivity and correct allocation. The requested test(s) can be accomplished on an individual well basis or as a three (3) well combined production test. The state beneficiary situation is such that individual well tests will not be mandatory. The wells can be tested by Barber Oil Company personnel or by an independent testing company selected at your discretion. It is also requested that both the oil and water production percentages be determined. It is requested that the above mentioned allocation test(s) be performed within thirty (30) days of receipt of this letter. In addition, please notify this office prior to conducting the test(s) so it may be witnessed by State Land Office personnel.

To remain in compliance within the rules and regulations of this office, it is requested that the allocation test(s) be conducted on an annual basis. Upon receipt of the results of the initial allocation test(s), this office will take into consideration your request for an approved commingling agreement.

Sincerely,

Floyd O. Prando, Director
Oil, Gas and Minerals Division
(505) 827-5744



RAY B. POWELL
COMMISSIONER

State of New Mexico

OFFICE OF THE

Commissioner of Public Lands

Santa Fe

October 28, 1993

P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

Barber Oil, Inc.
111 West Mermod
P.O. Box 1658
Carlsbad, New Mexico 88220

Attention: Mr. Michael D. Garringer

Re: Exception to Commingle Production
Colglazier Federal - LC-029096-C
State Lease B-2386 - Assignment #3
State Lease B-2386 - Assignment #4
Stovall-Wood Fee Lease
Eddy County, New Mexico

Dear Mr. Garringer:

This office is in receipt of your letter of January 12, 1993, wherein you have requested approval to commingle production and the off-lease storage of the following wells:

STATE B-2385 (Assignment #3)

State Well #2 Unit Letter N
SESW Section 17, T20S, R30E

STATE "A" B-2386 (Assignment #4)

State "A" Well No. 1 Unit Letter O
SWSE Section 17, T20S, R30E

State "A" Well No. 4-A Unit Letter J
NWSE Section 17, T20S, R30E

COLGLAZIER FEDERAL LC-029096-C

Colglazier #1 Unit Letter B
NWNE Section 20, T20S, R30E

Colglazier #2 Unit Letter G
SWNE Section 20, T20S, R30E

Colglazier #3 Unit Letter G
SWNE Section 20, T20S, R30E

Barber Oil, Inc.
Page 2
October 28, 1993

STOVALL-WOOD FEE

Stovall-Wood #1 Unit Letter C
NENW Section 20, T20S, R30E

Stovall-Wood #2 Unit Letter F
SENW Section 20, T20S, R30E

Stovall-Wood #3 Unit Letter F
SENW Section 20, T20S, R30E

Subsequent to your request, on October 14, 1993, this office witnessed your allocation tests which were performed on the three state wells in the Barber Field lease and the results were concurred by our letter of October 21, 1993, a copy of which has been enclosed.

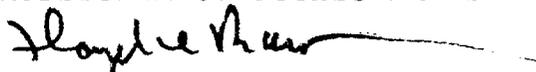
In view of the above, please be advised that the Commissioner of Public Lands has this date granted approval to your proposed commingling and off-lease storage request. Our approval is given with the understanding that the Commissioner of Public Lands reserves the right to amend or withdraw his approval should this operation prove to be unprofitable to the State at any time in the future. Our approval is subject to like approval by the New Mexico Oil Conservation Division and the Bureau of Land Management.

Your Thirty (\$30.00) Dollar filing fee has been received.

If you have any questions, or if we may be of further help, please contact Pete Martinez at (505) 827-5791.

Very truly yours,

RAY B. POWELL, M.S., D.V.M
COMMISSIONER OF PUBLIC LANDS

BY: 
FLOYD O. PRANDO, Director
Oil/Gas and Minerals Division
(505) 827-5744

RBP/FOP/pm

cc: Reader File
OCD - David, Catanach, Ben Stone
BLM - Roswell
TRD



RAY B. POWELL
COMMISSIONER

State of New Mexico
OFFICE OF THE
Commissioner of Public Lands
Santa Fe

P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

October 21, 1993

Barber Oil, Inc.
P.O. Box 1658
Carlsbad, New Mexico 88220

Dear Mr. Garringer:

On the morning of October 14, 1993, allocation tests were performed on the three state wells in the Barber Field lease, all located in Sec. 17, T-20-S, R-30-E, Eddy County, New Mexico. The tests were conducted in reference to a request made by this office to Barber Oil, Inc. in a letter dated August 27, 1993 (attached for reference). The tests were conducted by Barber Oil, Inc. personnel and witnessed by a representative of this office. The tests were conducted in part to: 1) verify that the previously determined allocation formulas, submitted by Barber Oil, are functionally correct, and 2) satisfy the State Land Office requirement of conducting annual allocation test(s), which are necessary to approve a pending application to commingle or to uphold an existing commingling agreement.

The results of the allocation tests for the three (3) state lease wells are as follows:

Total Rate (cumulative of three state wells) = 72.83 BBL/HR = 1747.92 BPD (total liquids)

Oil Cut = 1.0 % of total liquids (Based on color cut from test volume)

Calculated Oil Rate (cumulative of three state wells) = 17.48 BOPD

Well No. 1A & 4A: 90 BBLS (total liquids) / 2 hr. 46 min. = 32.53 BBLS/HR

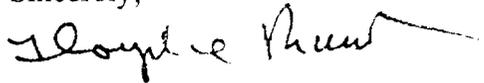
Well No. 2 : 90 BBLS (total liquids) / 2 hr. 14 min. = 40.30 BBLS/HR

Allocation formulas that were calculated and submitted by Barber Oil, based on the production history of the wells, yield an interest of 34.016677 % of the cumulative oil production, to the state wells. The calculated percentage that was obtained from the allocation tests, coincides and

confirms the accuracy of this percentage when compared to the reported monthly production from the entire lease and the state lease wells in particular.

Therefore, it is believed that State Land Office Rule 1.053, as it applies to proper allocation and commingling of products, has been satisfactorily complied with. It is also recommended that the pending application to commingle, submitted on January 13, 1993 by Barber Oil, Inc., be reviewed for approval. We will notify you as soon as a decision has been rendered.

Sincerely,

A handwritten signature in black ink, appearing to read "Floyd O. Prando", with a long horizontal flourish extending to the right.

Floyd O. Prando, Director
Oil, Gas and Minerals Division
(505) 827-5744

cc: Bureau of Land Management

BARBER OIL, INC.
P. O. BOX 1658
CARLSBAD, NM 88221-1658

FORMAL APPLICATION
FOR EXCEPTION TO COMINGLE PRODUCTION
AND
OFF LEASE STORE PRODUCTION

SUBMITTED TO
OFFICE OF THE
COMMISSIONER OF PUBLIC LANDS
P. O. BOX 1148
SANTA FE, NM 87504-1148

JANUARY 12, 1993

Barber Oil, Inc., a New Mexico corporation, seeks approval to commingle production in its Barber Field in Eddy County, New Mexico from four leases. The leases are Colglazier Federal (LC-029096-C), State (B-2386 Assignment #1, State "A" (B-2386 Assignment #2, and Stovall-Wood Fee, called collectively "the Barber leases", "Barber" or "the production".

The producing wells under the above leases (see Exhibit "A") total nine wells. Six of the nine wells were drilled in the late 1930's with the other three drilled in the early 1950's. At the time the later wells were drilled some of the earlier wells were deepened.

Production from this field occurs from approximately 1,500 feet in a lime formation known as the Seven Rivers. Prior to deepening the wells most of the production occurred several feet above the Seven Rivers in the Yates formation which is a sand formation. Therefore, Barber's production is said to occur from the "Yates-Seven Rivers" formations.

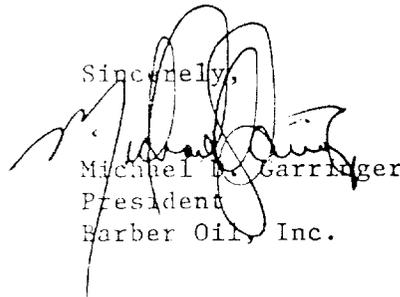
In 1937 when Neil H. Wills (the predecessor in interest and founder of Barber Oil, Inc.) with other partners, drilled the first wells in the Barber Field production of oil averaged approximately 500 barrels of oil per day (BOPD) and 5,000 barrels of water per day (BWPD). Barber production is an emulsion of water and oil with the ratio of water to oil, at that time, being about 90% water and 10% oil. To separate the water and oil required a great deal of settling time, some heat and chemicals. As a result of the large tanks required to settle the emulsion and the elaborate production and disposal system required to separate the oil and water only one tank battery was ever constructed. This tank battery is located on the Stovall-Wood Fee lease in Unit Letter C, Section 20, Township 20 South, Range 30 East, N.M.P.M., Eddy County. The production, since inception, has been commingled into one tank battery. Our proposal is to simply continue to commingle the production and allocate a certain percentage of production to each of the contributing leases based on historical production figures going back forty years. This process will be further explained in Exhibit "E".

Please find enclosed the following exhibits and supporting documents:

Exhibit "A" - addresses items in #2 "Commingle Pre-application"
Exhibit "B" - Item B & G under State Land Office Rule 1.055 (2 PAGES)
Exhibit "C" - Item E under same
Exhibit "D" - Item F under same
Exhibit "E" - Item H under same
Items C & D under Rule 1.055 are included in Exhibit "A"

If we may provide any additional documentation or information, please so advise.

Sincerely,



Michael R. Garringer
President
Barber Oil, Inc.

EXHIBIT 'A'

<u>LEASE NAME/SERIAL NUMBER</u> <u>WELL NAME/NUMBER/LEGAL</u>	<u>*ORIGINAL</u> <u>LESSEE OF RECORD AND DATE</u>	<u>ROYALTY OWNERS UNDER</u> <u>STATE LEASES ONLY</u>	<u>FORMATION AND POOL</u>	<u>LEGAL DESCRIPTION OF LEASE</u> <u>LEGAL DESCRIPTION OF WELL</u>
COLGLAZIER FEDERAL LC-029096-C	NELLIE COLGLAZIER 5/6/25		BARBER YATES/SEVEN RIVERS	NE/4 of Section 20 and SW/4 of Section 21, T20S, R30E, N.M.P.M., Eddy County, NM from surface of the ground to 2,500 feet, containing 320 acres more or less
Colglazier #1 Unit Letter B				
NWNE Sec 20, T20S, R30E 660' FNL and 1980' FWL				
Colglazier #2 Unit Letter G				
SWNE Sec 20, T20S, R30E 2310' FNL and 2310' FEL				
Colglazier #3 Unit Letter G				
SWNE Sec 20, T20S, R30E 1650' FNL and 2310' FEL				
STATE B-2386 (Assignment #1)	STANOLIND OIL AND GAS CO. 1/10/34	STATE OF N.M. 12.5%	SAME	S/2SW/4 of Section 17; NE/4NE/4 of Sec.19; NW/4NW/4 of Sec. 20; all in T20S, R30E, N.M.P.M., Eddy County, from the surface to a depth of 2,500 feet containing 160 acres more or less
State #2 Unit Letter N				
SFSW Sec 17, T20S, R30E 660' FSL and 1980' FWL				
STATE "A" B-2386 (Assignment #2)	STANOLIND OIL AND GAS CO. 1/10/34	STATE OF N.M. 12.5%	SAME	E/2, E/2SW/4 and SW/4SW/4 of Sec.16; S/2N/2, N/2SW/4 and SE/4 Sec. 17; SE/4 Sec. 18; NW/4NE/4, SE/4NE/4, N/2SE/4 & SW/4SE/4 Sec. 19; S/2SW/4 Sec. 20; W/2NW/4 Sec. 29; NE/4 Sec.30; all in T20S, R30E, N.M.P.M., Eddy County, NM from the surface to 2,500 feet containing 1,520 acres more or less.
State 1-A Unit Letter O				
SMSW Sec 17, T20S, R30E 330' FSL and 1980' FEL		AMOCO 5.46875%		
State 4-A Unit Letter J				
NWSE Sec 17, T20S, R30E 1650' FSL and 2310' FEL				
STOVALL-WOOD FEE	NEIL H. WILLS 12/22/36	W. A. WOOD 12.5%	SAME	E/2NW/4 Sec 20, T20S, R30E, N.M.P.M., Eddy County, NM from the surface to 2,000 feet containing 80 acres more or less
Stovall-Wood #1 Unit Letter C				
NENW Sec 20, T20S, R30E 660' FNL and 1980' FWL				
Stovall-Wood #2 Unit Letter F				
SENW Sec 20, T20S, R30E 2310' FNL and 2310' FWL				
Stovall-Wood #3 Unit Letter F				
SENW Sec 20, T20S, R30E 1650' FNL and 2310' FWL				

*NOTE- Barber Oil, Inc. is current Lessee of Record on all the above described lands restricted to the depths indicated.

EXHIBIT "B" pg. 2

ALL FLOW LINES ARE ABOVE GROUND
 3" & 4" POLYETHYLENE PIPE

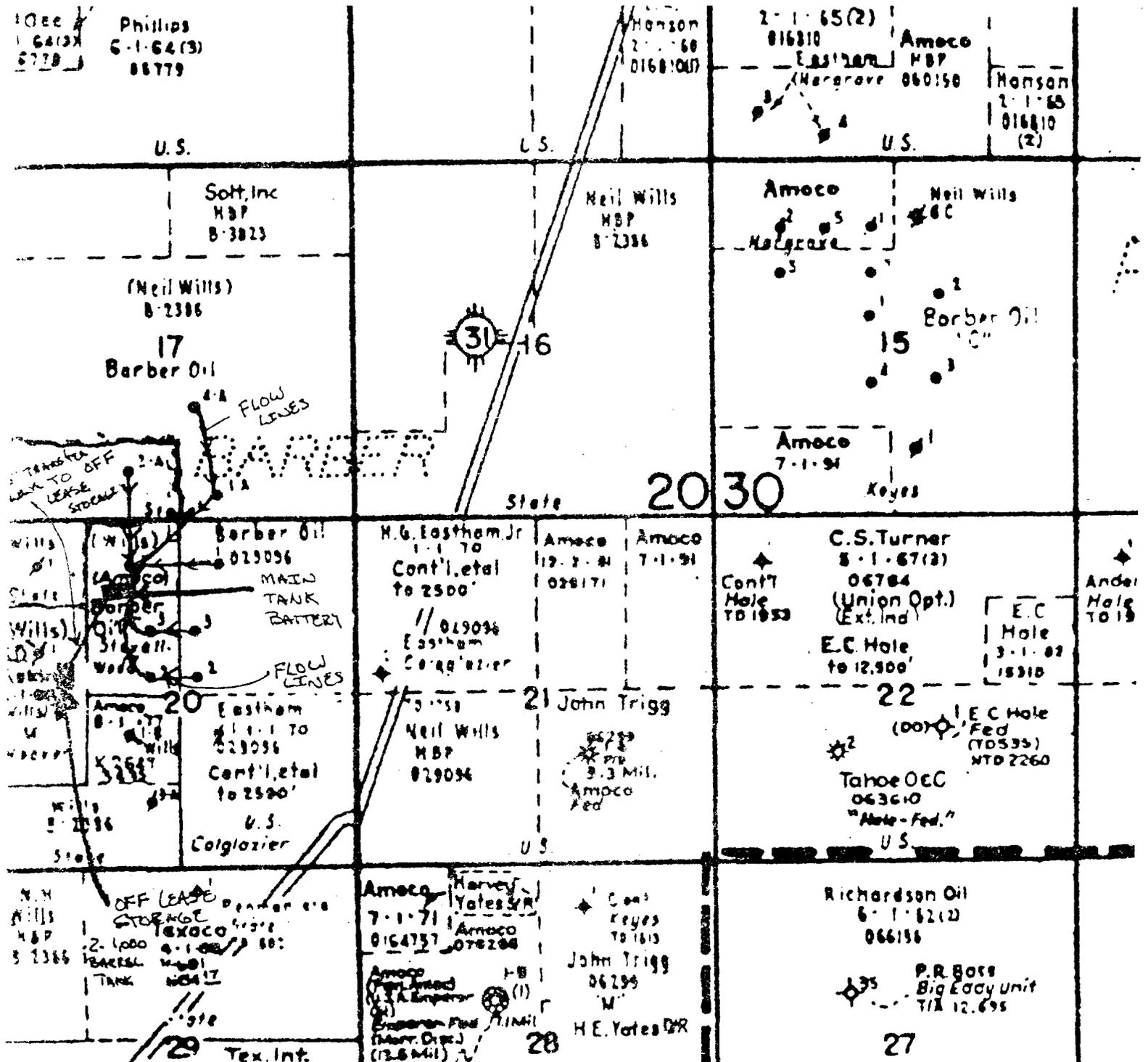


EXHIBIT "C"

ECONOMIC ANALYSIS OF PROPOSED OPERATION

Our proposal to continue operations as they have occurred for the past fifty years will not effect revenues to the State of New Mexico. The only possible effect would be if we were required to set up separate tank facilities, heater treaters, chemical pumps, water disposal facilities, settling tanks, etc. for each of the four leases. In that event we would plug the wells and the loss to the State would be approximately \$14,000 per year in royalties, another \$27,000 in lost production taxes and whatever income taxes are paid on the profitability of the operation of the leases.

If approval for commingling is received, the State will continue to receive royalties, production taxes and income taxes just as they have for the past 50 plus years.

Estimated cost of setting up three additional tank batteries, rerouting flow lines, etc. is approximately \$100,000 per tank battery, assuming the four leases could share the disposal well. Three additional tank batteries would cost \$300,000 plus additional operating costs of approximately \$14,000 per year. These additional capital and operating costs would necessitate the plugging of the wells. It is estimated, at current oil prices, to require some twenty years to recover the added costs.

EXHIBIT "E"

DESCRIPTION OF OPERATING SEQUENCE

The Seven-Rivers formation in the Barber pool is a natural water drive which produces an emulsion of oil and water at a current ratio of 99% water to 1% oil. Water production exceeds 5,000 BHPD and oil production is about 50 BOPD. The oil produced is 19 gravity corrected to 60°. This low gravity sour crude incurs a \$3.20 penalty at this time from posted New Mexico sour crude prices. In addition to the financial penalty, the low specific gravity of the crude in relation to the gravity of the water makes separation difficult. It is this critical separation of water and oil that has necessitated the commingling of the production from the first days of production.

As the oil enters the tank battery at a manifold (Refer to Exhibit "D") the manifold channels the emulsion into a boot with a 2" vent at the top and a 2" water drain at the bottom. The "boot" serves as the first step in the water/oil separation process and about 50% of the water exits the process at this point and is injected into the disposal well. The remaining emulsion enters a 750 bbl settling tank which allows the emulsion to further separate as a result of "quieting" the mixture. Further water is removed at this point through three 4" lines called "automatic bleeders" which regulate the water oil contact in the settling tank. The water/oil emulsion enters the skim tank where any oil in the water has further settling time and can be skimmed from the water and put back into the system. Water which settles to the bottom of the skim tank is drained to the disposal well which takes the water on a vacuum.

Oil in the skim tank as well as oil in the settling tank is then sent to the "Hay Tank" which allows still further settling time. If settling is not occurring in the settling tank because of cold temperatures, the emulsion can be routed to a heater-treater (or boiler) and heated in an attempt to aid the separation process. From the heater-treater the oil can be re-introduced into the hay tank. From the Hay Tank oil is sent to either of two 250 Bbl storage tanks, and water is removed to the disposal well. When enough oil has entered the oil storage tanks a 4" valve is opened which allows an oil circulating pump to drain the tank and send the oil "up the hill" to the main sales tanks located some 1,500 feet to the south and west of the main tank battery to the Navajo Refining "Barber Station." At one time, we shipped our oil by pipeline to Navajo's refinery in

Artesia and received a slightly better price because trucking was not required. We no longer sell to Navajo because their gravity penalty is too steep. Navajo continues to use the "Barber Station" as an entry point for oil collected in the area. We own two 1,000 Bbl sales tanks at this facility and that is where the oil is picked up by the transporter. It is an area where trucks can enter and exit much easier than at our main tank battery.

It is a somewhat complicated system, however we have determined that each step is necessary to the process and it does work.