DATE IN 6/30/00	SUSPENSE 7/20/00	ENGINEER DC	LOGGED MW	TYPE DHC

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

ADMINISTRATIVE APPLICATION COVERSHEET

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS

2770

Application Acronyms:

[NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location]
[DD-Directional Drilling] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Directional Drilling

☐NSL ☐NSP ☐DD ☐SD

Check One Only for [B] and [C]

[B] Commingling - Storage - Measurement

☒DHC ☐CTB ☐PLC ☐PC ☐OLS ☐OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery

☐WFX ☐PMX ☐SWD ☐IPI ☐EOR ☐PPR

RECEIVED
JUN 30 2000

[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or ☐Does Not Apply

[A] ☐Working, Royalty or Overriding Royalty Interest Owners

[B] ☐Offset Operators, Leaseholders or Surface Owner

[C] ☐Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐Waivers are Attached

[3] **INFORMATION / DATA SUBMITTED IS COMPLETE** - Statement of Understanding

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, ORRI) is common. I understand that any omission of data, information or notification is cause to have the application package returned with no action taken.

Note: Statement must be completed by an individual with supervisory capacity.

Terry G. Lindeman	Terry G. Lindeman	Operations Superintendent	6/29/00
Print or Type Name	Signature	Title	Date

Mallon Oil Company

a Mallon Resources Subsidiary

Denver/Colorado ♦ Durango/Colorado ♦ Carlsbad/New Mexico

June 29, 2000

Mr. David Catanach
OCD Engineering Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

Dear Mr. Catanach

Enclosed is Mallon Oil Company's application for approval to down hole commingle the San Jose, Nacimiento, Ojo Alamo and Pictured Cliffs formations in the Jicarilla 30-03-27 No. 2 wellbore.

If any additional information is required please contact me at 970-382-9100. Thank you for your assistance in this matter.

Sincerely,

Terry Lindeman
Operations Superintendent

TGL/gd

Enclosures
Don Erickson / Mallon Resources Corporation
File

Mallon Oil Company

a Mallon Resources Subsidiary

Denver/Colorado ♦ Durango/Colorado ♦ Carlsbad/New Mexico

June 29, 2000

Mr. David Catanach
OCD Engineering Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

Dear Mr. Catanach

The following information is intended to be supplemental to Mallon Oil Company's application for approval to down hole commingle the San Jose, Nacimiento, Ojo Alamo and Pictured Cliffs formations in the Jicarilla 30-03-27 No. 2 wellbore.

In regards to the recent changes of Rule 303.C, the commingling of the Nacimiento, Ojo Alamo, and the Pictured Cliffs meet the criteria of section C. The San Jose should also qualify based on the high fracture pressure that has been noted field wide.

The field average bottom hole pressures are:

1. San Jose Formation – **Average Bottom hole Pressure** @ 5600' sea level elevation is **305 psia** and the average BTU content of the gas is 1065.

2. Nacimiento Formation – **Average Bottom hole Pressure** @ 4600 sea level elevation is **640 psia** and the average BTU content of the gas is 1063.

3. Ojo Alamo Formation – **Average Bottom hole Pressure** @ 3900 sea level elevation is **1100 psia** and the average BTU content of the gas is 1098.

4. Pictured Cliffs Formation – Average Bottom hole Pressure @ 3500 sea level elevation is **1250 psia** and the average BTU content of the gas is 1136.

Based on data obtained form the acid breakdowns performed on the zones in question, in the wellbore of the Jicarilla 30-03-27 No. 2, the following information will show the fracture pressures to be adequate for safely commingling all four zones.

The **Pictured Cliffs Formation** was perforated at 3566' – 3574', 3581' – 3588', 3597' – 3599', 3606' – 3614', 3627' - 3640'. Following the fracture treatment the **fracturing pressure at mid-perf calculated to be 2345psi. (0.65 psi / ft).**

The **Ojo Alamo Formation** was perforated at 3058' – 3096', 3107' – 3109',3123' – 3133' with the mid-perf being 3095'. Following the acid breakdown the **fracturing pressure at mid-perf calculated to be 2311 psi. (0.75 psi / ft).**

The **Nacimiento Formation** was perforated at 2447' – 2489', 2830' – 2834', 2942' – 2948' with the mid-perf being 2697'. Following the acid breakdown the **fracturing pressure at mid-perf calculated to be 1986 psi. (0.74 psi / ft).**

The **San Jose Formation** was perforated at 1458' – 1468', 1472' – 1488', 1514' – 1534', 1605' – 1614', 1620' – 1628', 1896' – 1908', Mid-pef: 1683', Following the fracture treatment the **fracturing pressure at mid-perf calculated to be 1449 psi. (0.86 psi / ft).**

Flow tests on each zone were conducted for a period of time as to allow for stabilization. These results are:

Pictured Cliffs Formation:	**138 mcfd, 7 BWPD**
Ojo Alamo Formation:	**358 mcfd, 48 BWPD**
Nacimiento Formation:	**610 mcfd, 48 BWPD**
San Jose Formation;	**570 mcfd, 15 BWPD**
Total	**1,676 mcfd, 118 BWPD**

The allocation method that was agreed upon between Mallon Oil Company and the Jicarilla Apache Tribe is to use a percentage based on the initial test.

Pictured Cliffs Formation:	**138 / 1676 = .0823 (08.23%)**
Ojo Alamo Formation:	**358/ 1676 = .2136 (21.36%)**
Nacimiento Formation:	**610 / 1676 = .3640 (36.40%)**
San Jose Formation;	**570 / 1676 = .3401 (34.01%)**

I hope this information will help expedite the administrative approval for the commingling of the above referenced well. If you should require any additional information concerning this matter please contact me at (907) 382-9100. I appreciate the help and attention you have shown on this matter.

Sincerely,

Terry Lindeman
Operations Superintendent

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
811 South First St., Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd, Aztec, NM 87410
DISTRICT IV
2040 S. Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 S. Pacheco
Santa Fe, New Mexico 87505-6429

Form C-107-A
Revised August 1999

APPROVAL PROCESS:
___ Administrative __Hearing

EXISTING WELLBORE
___ YES ___ NO

APPLICATION FOR DOWNHOLE COMMINGLING

Mallon Oil Company | P. O. Box 2797 Durango, Colorado 81302
Operator | Address

Jicarilla 30-03-27 | 2 | M 27 – 30N – 03W | Rio Arriba
Lease | Well No. | Unit Ltr. - Sec - Twp - Rge | County

Spacing Unit Lease Types: (check 1 or more)

OGRID NO. 13925 Property Code 00024237 API NO. 30-039-26100 Federal __X__, State ___, (and/or) Fee ____

The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediate Zone	Lower Zone
1. Pool Name and Pool Code	Cabresto Canyon San Jose Ext 96822	Cabresto Canyon Nacimiento Ext 96821 Cabresto Canyon Ojo Alamo Ext 96538	East Blanco Pictured Cliffs Ext 72400
2. Top and Bottom of Pay Section (Perforations)	1458' – 1 908' – San Jose	2447' – 2948' – Nacimiento 3058' – 3133' – Ojo Alamo	3566" – 3640' – Pictured Cliffs
3. Type of production (Oil or Gas)	Gas	Gas Gas	Gas
4. Method of Production (Flowing or Artificial Lift)	Flowing	Flowing Flowing	Flowing
5. Bottomhole Pressure Oil Zones - Artificial Lift: Estimated Current Gas & Oil - Flowing: Measured Current All Gas Zones: Estimated Or Measured Original	a. (Current)	a.	a.
	b. (Original) 305 psi	b 1100 psi	b. 1250 psi
6. Oil Gravity (EAPI) or Gas BTU Content	Each zone will be isolated and	tested for gas analysis and rate	for allocation percentages.
7. Producing or Shut-In?	Intent	Intent	Intent
Production Marginal? (yes or no)	No	No	No
* If Shut-In, give date and oil/gas/ water rates of last production	Date: Rates:	Date: Rates:	Date: Rates:
Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data * If Producing, give date andoil/gas/ water rates of recent test (within 60 days)	Date: Rates:	Date: Rates:	Date: Rates:
8. Fixed Percentage Allocation Formula -% for each zone (total of %'s to equal 100%)	Oil: % Gas: %	Oil: % Gas: %	Oil: % Gas: %

9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.

10. Are all working, overriding, and royalty interests identical in all commingled zones? __X__ Yes ___ No
If not, have all working, overriding, and royalty interests been notified by certified mail? ___ Yes ___ No

11. Will cross-flow occur? __X__ Yes ___ No If yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. __X__ Yes ___ No (If No, attach explanation)

12. Are all produced fluids from all commingled zones compatible with each other? __X__ Yes ___ No

13. Will the value of production be decreased by commingling? ___ Yes __X__ No (If Yes, attach explanation)

14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this application. __X__ Yes ___ No

15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). _____

16. ATTACHMENTS:
* C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
* Production curve for each zone for at least one year. (If not available, attach explanation.)
* For zones with no production history, estimated production rates and supporting data.
* Data to support allocation method or formula.
* Notification list of working, overriding, and royalty interests for uncommon interest cases.
* Any additional statements, data, or documents required to support commingling.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE _____ TITLE Operation Superintendent DATE 6/29/00

TYPE OR PRINT NAME Terry G. Lindeman TELEPHONE NO. (970-382-9100)

P.O. Box 1980, Hobbs, N.M. 88241-1980 — Energy, Minerals & Natural Resources Department — Revised February 21, 199
Instructions on back
Submit to Appropriate District Office
State Lease – 4 Copies
Fee Lease – 3 Copies

DISTRICT II
P.O. Drawer DD, Artesia, N.M. 88211-0719

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV
PO Box 2088, Santa Fe, NM 87504-2088

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, NM 87504-2088

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-039-26100	72400	East Blanco, Pictured Cliffs Ext.

4 Property Code	5 Property Name	6 Well Number
	JICARILLA 30-3-27	2

7 OGRID No.	8 Operator Name	9 Elevation
	MALLON OIL COMPANY	7089'

10 Surface Location

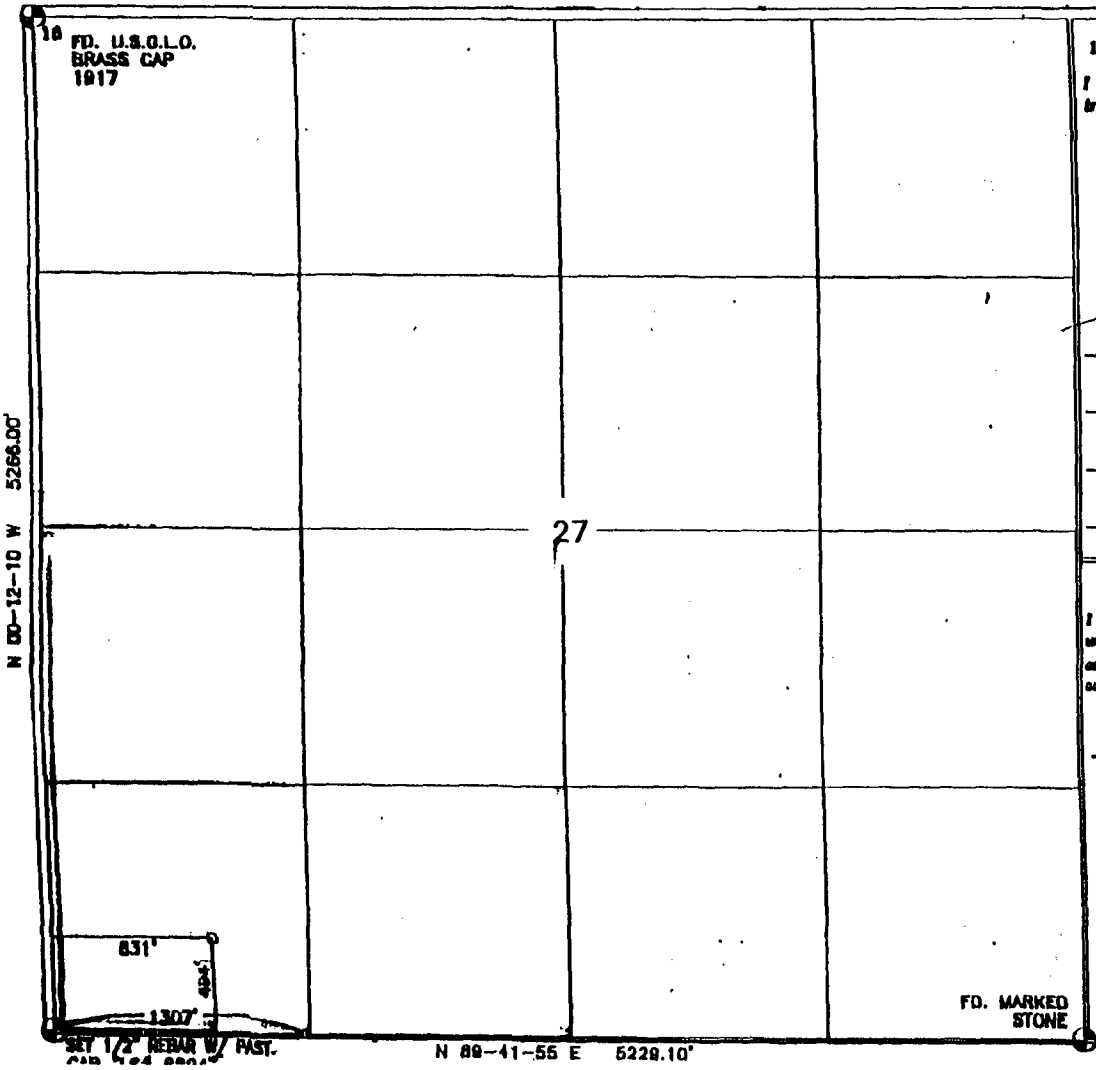
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	27	30-N	3-W		494	SOUTH	831	WEST	RIO ARRIBA

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
160			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Signature

Terrance G. Lindeman
Printed Name

Operations Superintende
Title

Date

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my

10-1[illegible]-9[illegible]

Date of Survey

Signature and Seal of Professional Surveyor

NEW MEXICO 8894 REGISTERED PROFESSIONAL LAND SURVEYOR

8894

Certificate Number

P.O. Box 1980, Hobbs, N.M. 88241-1980 — Energy, Minerals & Natural Resources Department

Revised February 21, 1994
Instructions on back
Submit to Appropriate District Office
State Lease – 4 Copies
Fee Lease – 3 Copies

DISTRICT II
P.O. Drawer DD, Artesia, N.M. 88211-0719

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV
PO Box 2088, Santa Fe, NM 87504-2088

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, NM 87504-2088

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-039-26100	96538	Cabresto Canyon, Ojo Alamo Ext.

4 Property Code	5 Property Name	6 Well Number
	JICARILLA 30-3-27	2

7 OGRID No.	8 Operator Name	9 Elevation
	MALLON OIL COMPANY	7089'

10 Surface Location

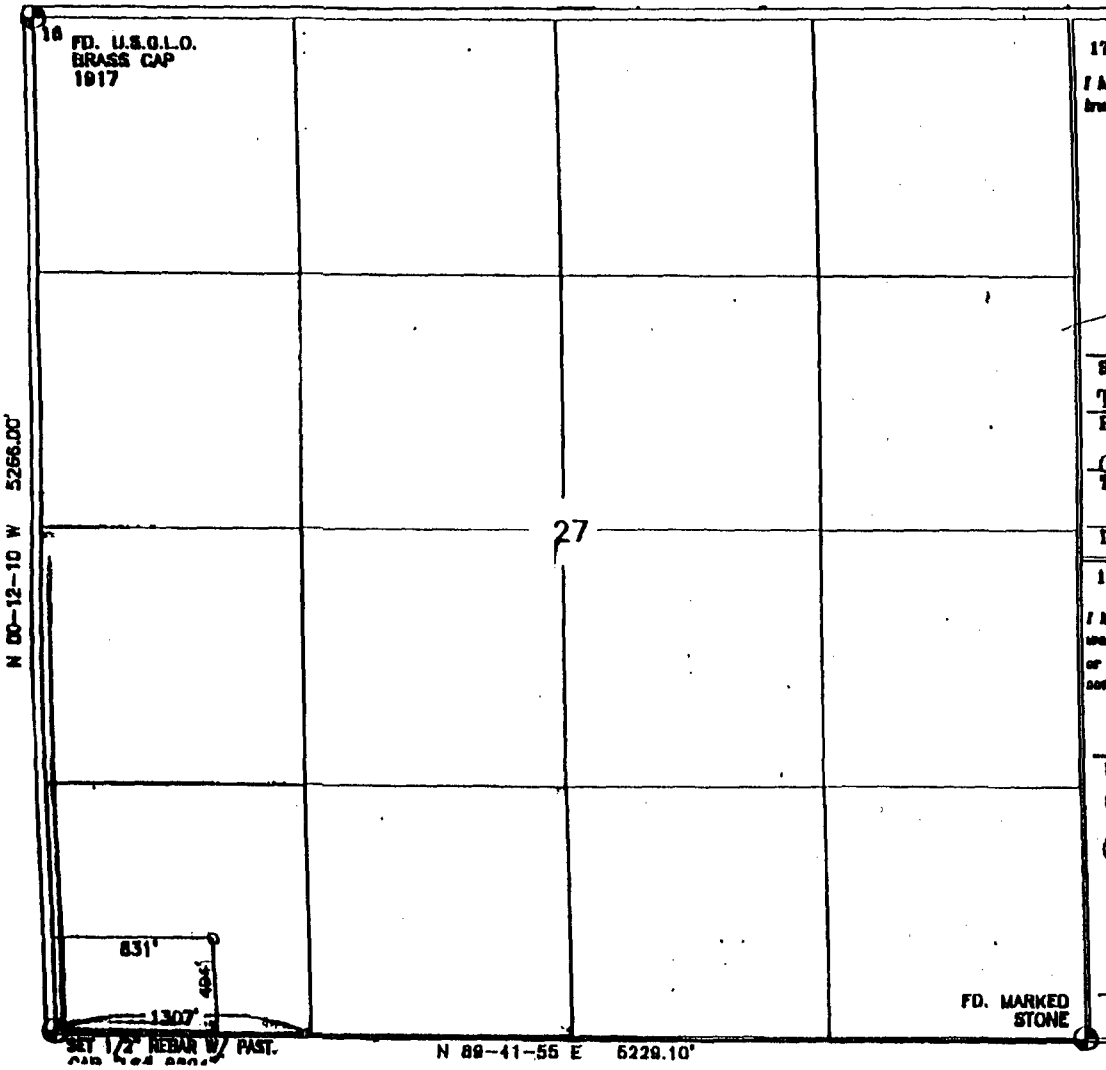
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	27	30-N	3-W		494	SOUTH	831	WEST	RIO ARRIBA

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
160			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Signature

Terrance G. Lindeman
Printed Name

Operations Superintendent
Title

Date

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my [illegible]

10-1[illegible]
Date of Survey

Signature and Seal of Professional Surveyor

RONALD A. RUSH
NEW MEXICO
8894
REGISTERED PROFESSIONAL LAND SURVEYOR

8894
Certificate Number

P.O. Box 1980, Hobbs, N.M. 88241-1980 — Energy, Minerals & Natural Resources Department

Revised February 21, 1994
Instructions on back
Submit to Appropriate District Office
State Lease – 4 Copies
Fee Lease – 3 Copies

DISTRICT II
P.O. Drawer DD, Artesia, N.M. 88211-0719

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV
PO Box 2088, Santa Fe, NM 87504-2088

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, NM 87504-2088

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-039-26100	96821	Cabresto Canyon, Nacimiento Ext.

4 Property Code	5 Property Name	6 Well Number
	JICARILLA 30-3-27	2

7 OGRID No.	8 Operator Name	9 Elevation
	MALLON OIL COMPANY	7089'

10 Surface Location

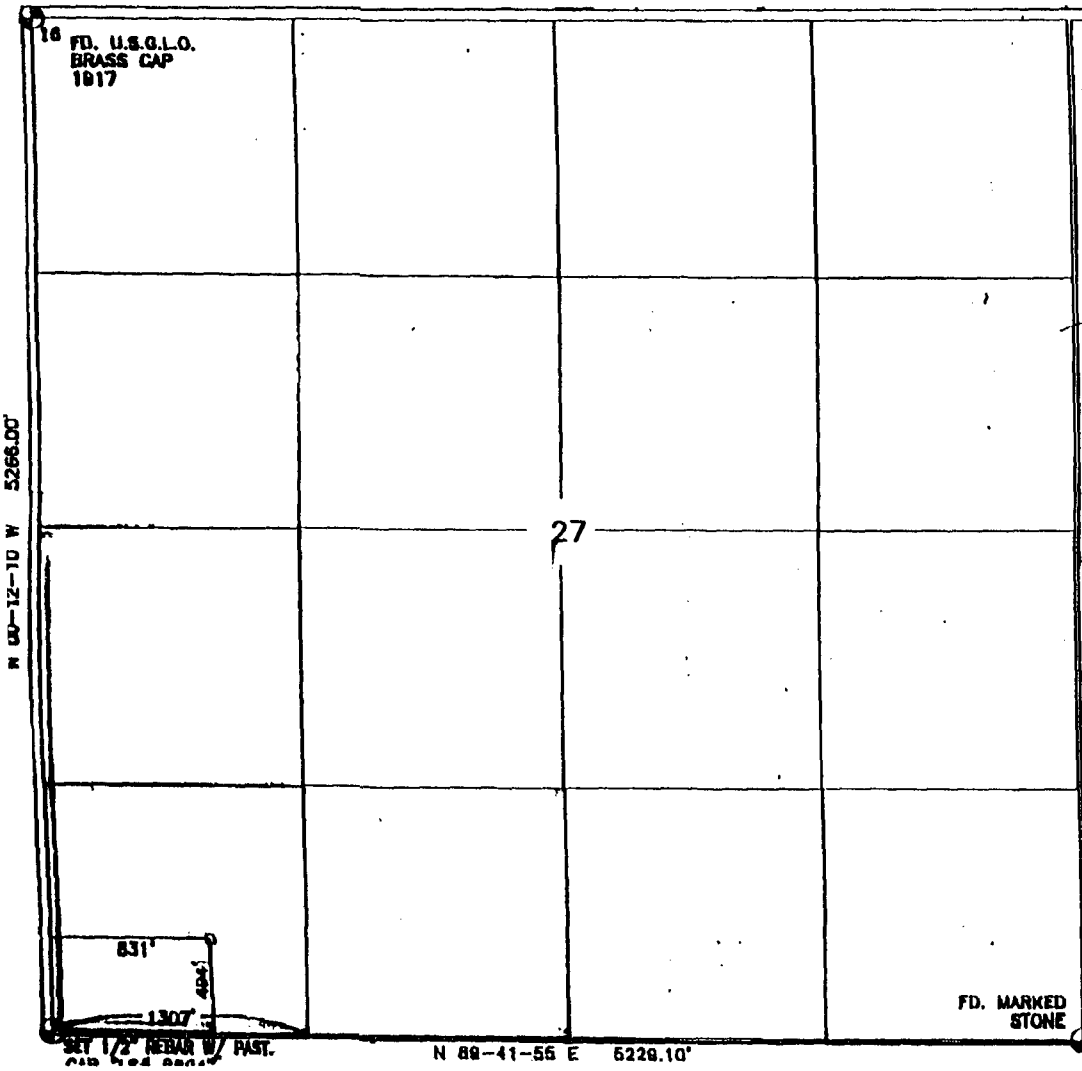
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	27	30-N	3-W		494	SOUTH	831	WEST	RIO ARRIBA

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
160			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Signature

Terrance G. Lindeman
Printed Name

Operations Superintendent
Title

Date

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge.

10-13-94
Date of Survey

Signature and Seal of Professional Surveyor

JOHN A. RUSH
NEW MEXICO
8894
REGISTERED PROFESSIONAL LAND SURVEYOR

8894
Certificate Number

...rgy, Minerals & Natural Resources Department

Revised February 21, 199
Instructions on back
Submit to Appropriate District Office
State Lease – 4 Copies
Fee Lease – 3 Copies

DISTRICT II
P.O. Drawer DD, Artesia, N.M. 88211-0719

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV
PO Box 2088, Santa Fe, NM 87504-2088

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, NM 87504-2088

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-039-26100	96822	Cabresto Canyon, San Jose Ext.

4 Property Code	5 Property Name	6 Well Number
	JICARILLA 30-3-27	2

7 OGRID No.	8 Operator Name	9 Elevation
	MALLON OIL COMPANY	7089'

10 Surface Location

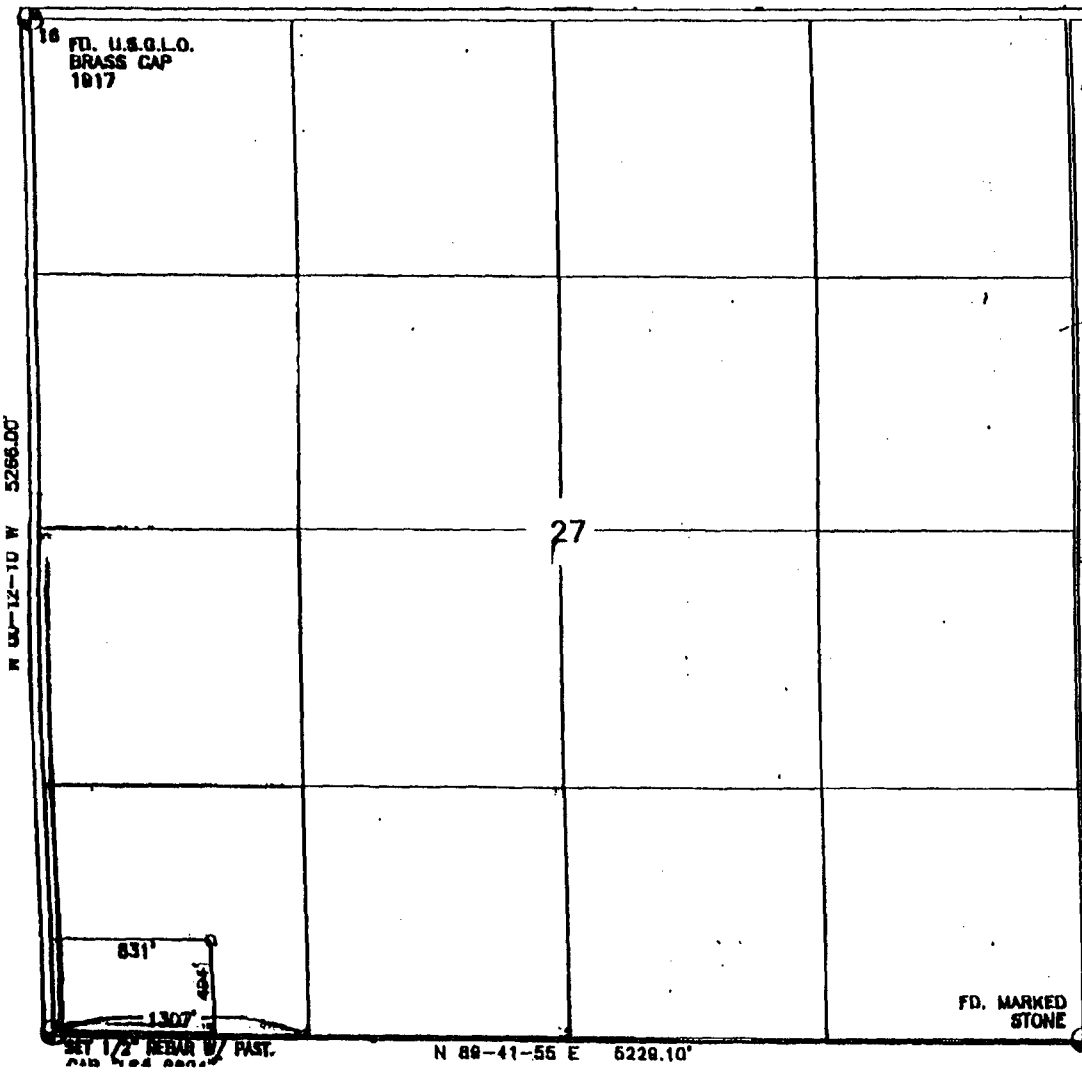
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	27	30-N	3-W		494	SOUTH	831	WEST	RIO ARRIBA

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
160			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Signature

Terrance G. Lindeman
Printed Name

Operations Superintende
Title

Date

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my [illegible]

10-17-9[illegible]
Date of Survey

Signature and Seal of Professional Surveyor

RONALD A. RUSH
NEW MEXICO
8894
REGISTERED PROFESSIONAL LAND SURVEYOR

8894
Certificate Number

Mallon Oil Company

a Mallon Resources Subsidiary

Denver/Colorado ♦ Durango/Colorado ♦ Carlsbad/New Mexico

Supplemental Statement

The Jicarilla 30-03-27 No. 2 well is located on the Jicarilla reservation in Northwestern New Mexico.

Attachment 1 outlines the benefits of commingling the zones applied for, as well as the Jicarilla Tribal Council Resolution of their approval and stipulations.

Attachment 2 exhibits the conditions under which the Bureau of Land Management concurred to the down hole commingling.

The bottom hole pressures used for item 5 were averaged from offset wells within the same lease.

Each zone will be isolated and tested to insure proper allocation and individual gas analysis.

♦ P.O. Box 2797 ♦ Durango, Colorado 81302 ♦ Phone: (970) 382-9100 ♦ Fax: (970) 382-7650 ♦

ATTACHMENT 1

THE JICARILLA APACHE TRIBE
P.O. BOX 507 • DULCE, NEW MEXICO 87528
(505) 759-3242

RESOLUTION OF THE TRIBAL COUNCIL

OIL AND GAS ADMINISTRATION
RE: Oil and Gas/Mallon Oil Company
Amending Resolution No. 97-R-530-07

Resolution No. 2000-R-153-04

WHEREAS, on July 3, 1997, the Tribal Council enacted Resolution No.97-R-530-07 approving the Plan of Development submitted by Mallon Oil Company for the construction and operation of an Amine Plant for the treatment of sour gas from certain listed oil and gas leases on the Reservation; and

WHEREAS, the approved Plan of Development required Mallon to isolate the Ojo Alamo formation from all other formations; and

WHEREAS, Mallon has engaged in extensive development of its leases since 1997 and has requested the Tribe's permission for down-hole commingling of gas that will be treated in the Mallon Amine Plant; and

WHEREAS, the Oil and Gas Administration and the Revenue and Taxation Department have reviewed Mallon's proposal and recommend certain conditions be placed on any down-hole commingling of gas by Mallon; and

WHEREAS, the Tribal Council has determined that the recommendation of the Oil and Gas Administration and the Revenue and Taxation Department should be adopted.

NOW, THEREFORE, BE IT RESOLVED by the Jicarilla Apache Tribal Council that the Plan of Development of the Mallon Amine Plant approved by Resolution No. 97-R-530-07 is hereby amended to allow down-hole commingling of gas production by Mallon Oil Company on the following conditions:

1. This resolution applies only to production from BIA Oil and Gas Leases No(s). 451, 452, 457, 458, 459, 460, 461, 462, and 464, and Mineral Development Agreements No(s). 701-90-0002 and 701-98-0013.

2. Mallon will apply to the Oil and Gas Administration (OGA) for approval of down-hole commingling on a well-by-well basis.

3 Mallon will test each well drilled, including a 48-hour stabilized flow test for each producing zone and gas analysis testing for each producing zone.

4 Mallon will submit OGA the same application for permission to commingle that is submitted to the New Mexico Oil Conservation Division and the Bureau of Land Management. The application will include the test results specified in par. 3, the proposed completion program, and a proposed method of allocating production rates and Btu content to each zone.

5 OGA and Revenue & Taxation will approve/disapprove the application within ten working days after receipt of the application.

6 The Tribe will not approve down-hole commingling of production from zones that are subject to different royalty rates.

7 The cumulated total of MMBtus allocated to all producing zones of a well shall not be less than the total MMBtus measured at the wellhead.

8 The allocation formula (Btu content and production rates) shall be subject to review by the OGA and Revenue and Taxation annually.

9 Under normal operating procedures sour gas will not be allowed to enter any other formation.

10 The commingled steam of gas will be metered at the wellhead and will be tested for Btu content semi-annually.

11 The Tribe's consent to down-hole commingling for a well shall be subject to withdrawal if there is damage to any producing formation or if the allocation formula results in royalty payments to the Tribe that are less than the royalty that would be payable from separate completions of each zone.

BE IT FURTHER RESOLVED that nothing in this resolution released Mallon from compliance with the normal permitting and approval requirements imposed by federal or tribal law in connection with any oil and gas well drilled or to be drilled on the leases or mineral development agreements identified above.

Ronald R Quelo

Tribal President

CERTIFICATION

The foregoing Resolution was enacted by the Tribal Council of the Jicarilla Apache Tribe on the 6th day of **April, 2000**, by a vote of **5** for, **0** against, **1** abstaining, at a duly called meeting at which a quorum of the Tribal Council members was present.

Corinne Lucero

TRIBAL SECRETARY

Mallon Oil Company

a Mallon Resources Subsidiary

Denver/Colorado ♦ Durango/Colorado ♦ Carlsbad/New Mexico

April 4, 2000

Mr. Thurman Velarde
Oil & Gas Administration
Jicarilla Apache Tribe
PO Box 507
Dulce, NM 87528

Dear Mr. Velarde:

A commingling review meeting was held in Farmington on October 21, 1999. The purpose of the meeting was to begin discussion about the potential for down hole commingling in the Mallon operated wells located in the East Blanco Field. The area of Mallon's interest in the East Blanco Field is within the Jicarilla Tribal Reservation and is located in T28-31N R2-3W. The meeting participants included representatives from the Jicarilla Tribe, Bureau of Land Management, New Mexico Oil Conservation Division and Mallon Oil Company. The list of attendees is attached (Exhibit 1). Mallon Oil Company plans to request approval of down hole commingling of separately pooled formations on a well by well basis once Jicarilla Tribal approval is obtained for the reasons described below and requests your support of this process.

The development of the natural gas reserves in this area began in 1986 with the completion of wells in the Pictured Cliffs formation. Mallon Oil Company is actively developing three additional Tertiary age formations in this area. These formations are the San Jose, Nacimiento, and Ojo Alamo. Some basic geologic and reservoir information is included on the attached reservoir summary sheet (Exhibit 2). Mallon is currently limited to completing only two zones at a time in each well bore. This limitation is due to the requirement that two tubing strings with a packer be used to separate the two producing zones. The separate tubing strings produce to separate surface and metering facilities at the surface before being combined into the common gathering system (Exhibit 3) to transport the gas to Mallon's compression and treating facility. All zones require compression to produce and the treating facility removes H2S from the combined gas stream before entering the El Paso system.

Some of the completed wells have four to five potentially productive intervals that could be completed and put on production (Exhibit 4) under a commingling plan of operation. The commingling of zones down hole would eliminate the need to drill shallow twin wells to produce the San Jose intervals (Exhibit 5), thus minimizing surface and environmental disturbances as well as increasing the revenue to the Jicarilla Tribe.

♦ P.O. Box 2797 ♦ Durango, Colorado 81302 ♦ Phone: (970) 382-9100 ♦ Fax: (970) 382-7650 ♦

Additionally, the two zone two tubing string completion does not allow for maximum production flexibility to ensure that gas rates from each well bore are maximized. The Ojo Alamo and shallower reservoirs produce water at some locations. Allowing down hole commingling of reservoirs would allow the wells to more optimally produce these reservoirs by increasing the lift efficiency.

The advantages of down hole commingling are:

- Production can be increased from the current well bores by opening more than two zones. This will increase recoverable reserves and maximize revenues to the Jicarilla Tribe.

- Production rates can be maintained at a higher level by reducing liquid in the well bores. This will be accomplished by commingling gas with lower associated water production to help lift well bore liquid. Efficient down hole mechanical configurations such as artificial lift could be installed, which can not be effectively applied now because of the two tubing string completions.

- Reducing the total number of wells required for each spacing unit would minimize surface disturbances. Commingling would also reduce the required surface equipment from one set of equipment for each reservoir/tubing string to one set per well.

- Down hole commingling will allow artificial lift to be installed to extend the wells producing life.

- Ultimate gas recoveries will be increased by allowing development into marginal field areas that can not be developed if more than one tubing string and surface equipment set are required.

- Jicarilla revenues will increase in the new MDA areas by allowing reduced investments and subsequently earlier well pay outs that result in increased Jicarilla royalty rates at interest reversion.

- Down hole commingling will allow Mallon to hydraulically fracture and complete more than one reservoir at a time which will reduce the time that completion equipment is on the well site, reduce investment costs, and allow development of marginal areas.

Down hole commingling is not being applied for in zones with different royalty rates.

The point of gas measurement and royalty payment will remain the same and will not be changed by down hole commingling. Royalty payments will be paid based on production allocated to each producing formation.

Current spacing for all reservoirs being discussed is 160 acres.

Mallon intends to pursue down hole commingling to accomplish the above recovery and revenue improvements. This process will include:

- Applying for down hole commingling for San Jose, Nacimiento and Ojo Alamo production on a well by well basis.
- Applying for down hole commingling of new Pictured Cliffs producers with new or prior Ojo Alamo, Nacimiento or San Jose zones on a well by well basis.
- Evaluate and apply for field wide commingling after adequate well by well commingled cases have been approved and commingled well performance reviewed by appropriate agencies.

Mallon respectfully requests your assistance in obtaining Jicarilla Tribe approval of down hole commingling of gas production. If you have any questions please do not hesitate to contact me at 970-382-9100. Thank you for your cooperation and assistance in this matter.

Sincerely,

Mallon Oil Company

Robert E. Blaylock
District Manager

EXHIBIT 1

MEETING ATTENDEES
OCTOBER 21, 1999
FARMINGTON, NEW MEXICO

NAME	COMPANY	PHONE
Duane C. Winkler	Mallon Oil Company	970-382-9100
John Zellitti	Mallon Oil Company	970-382-9100
Terry Lindeman	Mallon Oil Company	970-382-9100
Wayne Townsend	BLM/FFO	505-599-6359
Ray Hager	BLM/FFO	970-490-2942
Ernie Busch	NMOCD Aztec	
Ray Jones	Mallon Oil Company	303-293-2333, Ext. 1450
Wendell Bond	Mallon Oil Company	303-293-2333, Ext 1430
John Kilpatrick	Jicarilla Oil & Gas Administration	505-759-3485, Ext. 23
Joe Hewitt	BLM/FFO	505-599-6365

Typical Wellbore Schematics

East Blanco Field
Rio Arriba County, NM

Mallon Oil Company

Wellbore Diagrams

Existing Dually Completed Well

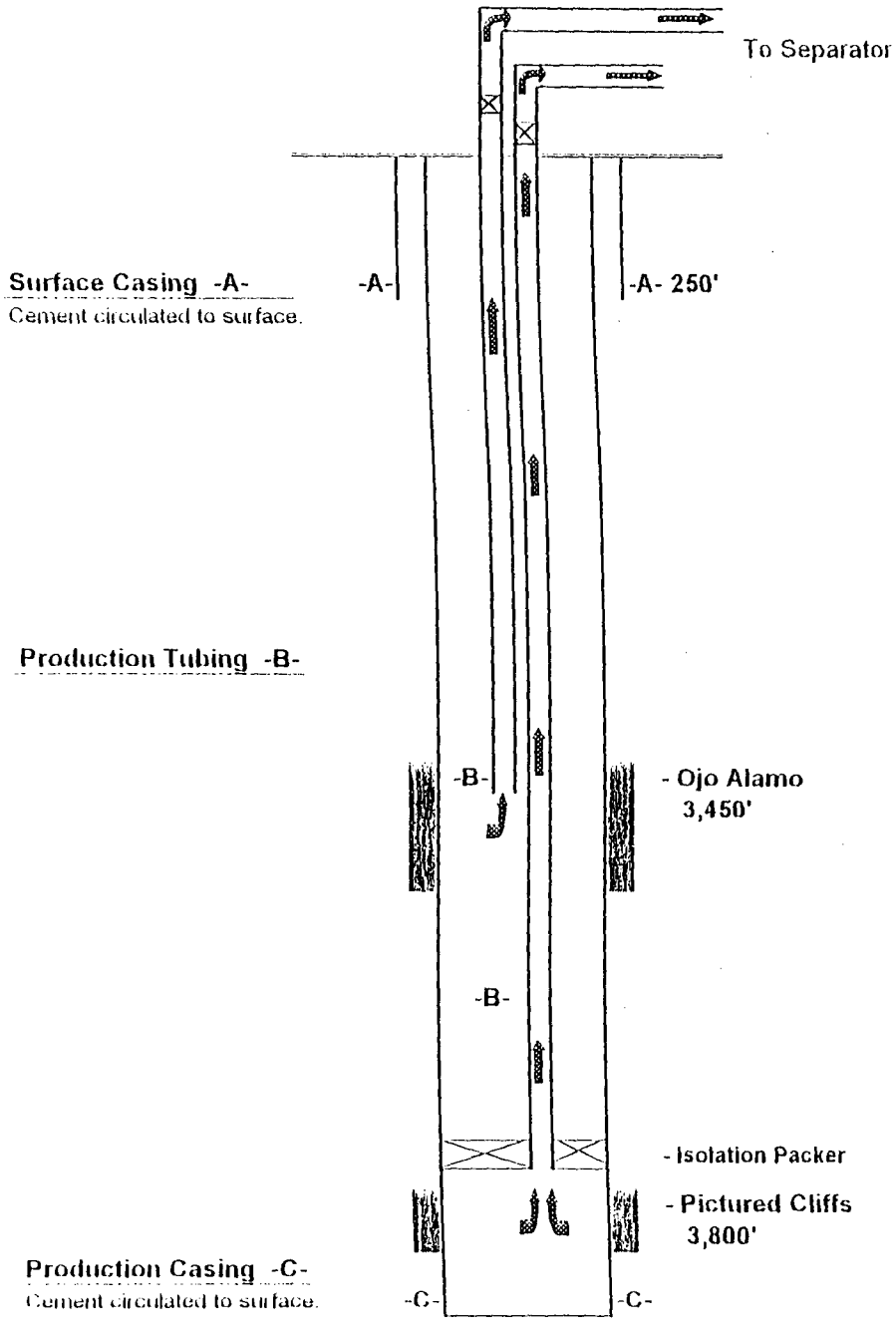


Exhibit 3

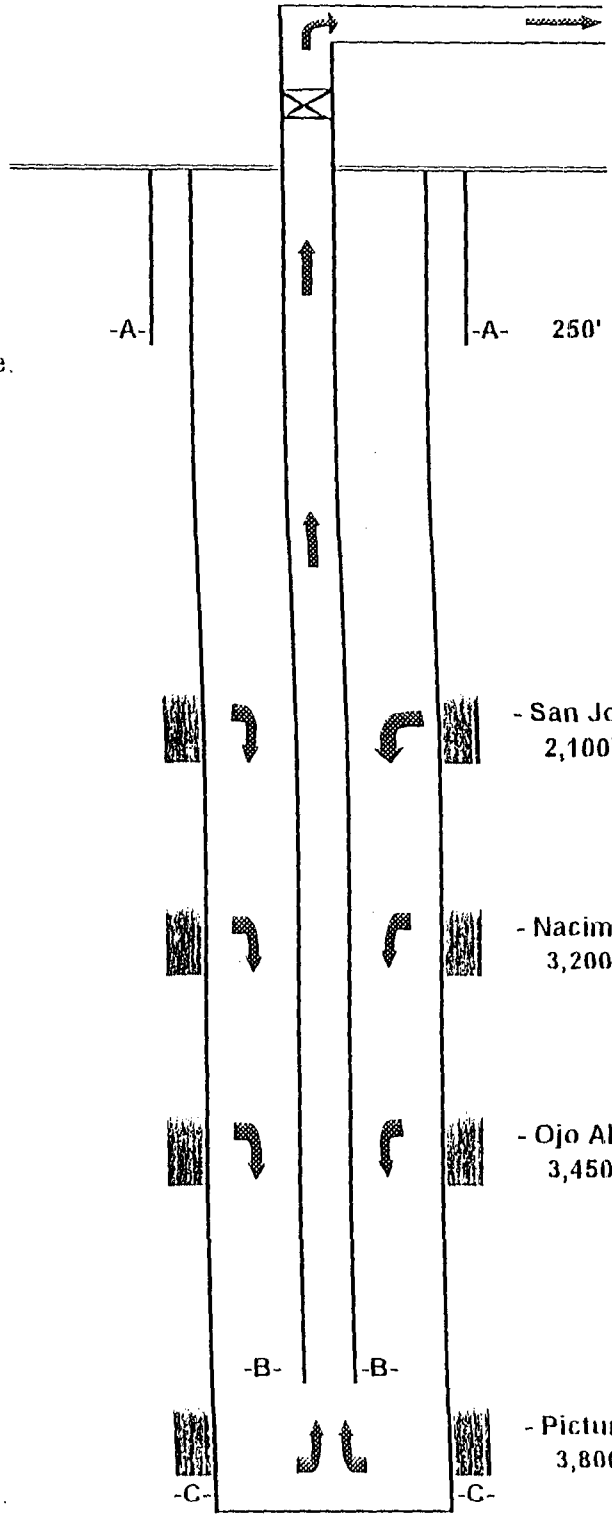
Typical Wellbore Schematic

East Blanco Field
Rio Arriba County, NM

Mallon Oil Company

Wellbore Diagram

Proposed Downhole Commingled Well



Surface Casing -A-
Cemented circulated to surface.

Tubing -B-
Typically 2-3/8" to handle large production volumes.

Production Casing -C-
Cement circulated to surface.

Exhibit 4

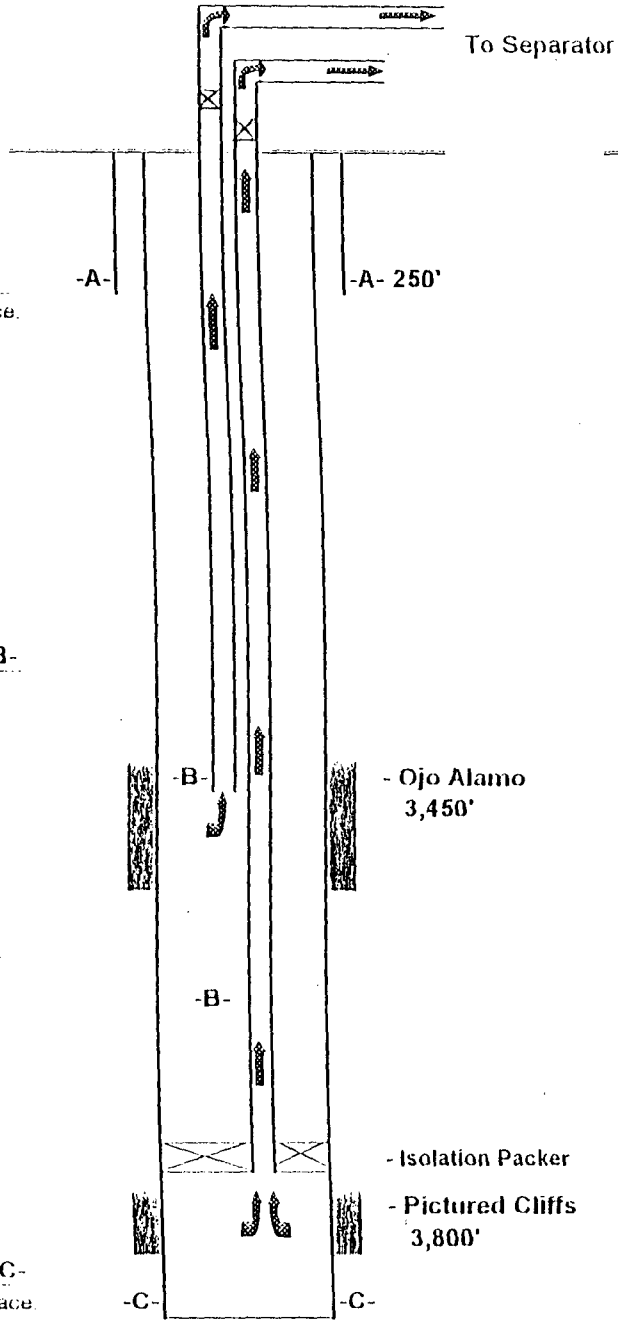
Typical Wellbore Schematics

East Blanco Field
Rio Arriba County, NM

Mallon Oil Company

Wellbore Diagrams

Existing Dually Completed Well



Surface Casing -A-
Cement circulated to surface.

Production Tubing -B-

Production Casing -C-
Cement circulated to surface.

Existing San Jose Twin Well

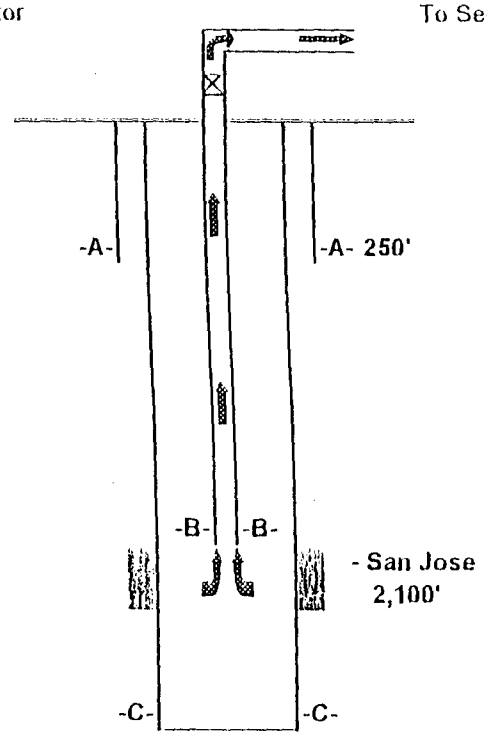


Exhibit 5

Mallon Oil Company

♦ Denver & Durango, Colorado ♦
♦ Carlsbad, New Mexico ♦

a Mallon Resources subsidiary

December 17, 1999

Mr. Thurman Valarde
Oil & Gas Administration
Jicarilla Apache Tribe
PO Box 507
Dulce, NM 87528

ATTACHMENT 2

Dear Mr. Valarde:

A commingling review meeting was held in Farmington on October 21, 1999. The purpose of the meeting was to begin discussion about the potential for downhole commingling in the Mallon operated wells located in the East Blanco Field. The area of Mallon's interest in the East Blanco Field is within the Jicarilla Tribal Reservation and is located in T28-31N R2-3W as shown on the attached map (Exhibit 1). The meeting participants included the Jicarilla Tribe, Bureau of Land Management, New Mexico Oil Conservation Division and Mallon Oil Company. The list of attendees is attached (Exhibit 2).

There are currently five producing formations in the Mallon operated project. The producing formations are the San Jose, Nacimiento, Ojo Alamo, Fruitland Coal and Pictured Cliffs. Downhole commingling will improve the volumetric and economic recovery of these reservoirs while minimizing surface disturbances. Mallon Oil Company plans to pursue downhole commingling of the above formations once Jicarilla Tribal approval is obtained for the reasons described below and requests your support of this process.

The Fruitland Coal and Pictured Cliffs formations were the initial reservoirs of interest when the development of this area began in 1986. Recently Mallon has been developing the San Jose, Nacimiento and Ojo Alamo formations. Some basic geologic and reservoir information is included on the attached reservoir summary sheet (Exhibit 3). Mallon is currently completing only two zones in each wellbore with two tubing strings and a packer separating the zones. The tubing strings produce to separate surface and metering facilities at the surface before entering a common gathering system to transport the gas to Mallon's compression and treating facility. The treating facility removes H2S from the gas and compresses all gas to enter the El Paso system. All zones require compression to produce. Some wellbores have four or five potential commercial formations that could be completed and commingled.

The current completion method only allows two zones to produce from one wellbore. Adding San Jose production to a well producing Pictured Cliffs and Ojo Alamo currently requires drilling an additional wellbore which is not economic in the marginal portions of this field. By allowing downhole commingling, the second wellbore would not be required and well economics can be improved to continue development into marginal field areas.

Additionally, the two zone two tubing string completion does not allow for maximum production flexibility to ensure that gas rates from each wellbore are maximized. The Ojo Alamo and shallower reservoirs produce water at some locations. Allowing downhole commingling of reservoirs would allow Mallon to more optimally produce these reservoirs by increasing the lift efficiency.

♦ 999 18th Street ♦ Suite 1700 ♦ Denver, Colorado 80202 ♦ Phone: 303.293.2333 ♦ Fax: 303.293.3601 ♦
♦ P.O. Box 2797 ♦ Durango, Colorado 81302 ♦ Phone: 970.382.9100 ♦ Fax: 970.382.7650 ♦
♦ P.O. Box 3256 ♦ Carlsbad, New Mexico 88220 ♦ Phone: 505.885.4596 ♦ Fax: 505.885.0022 ♦

The advantages of downhole commingling are:

- Production can be increased from the current wellbores by opening more than two zones. This will increase recoverable reserves and maximize revenues to the Jicarilla Tribe.

- Production rates can be maintained at a higher level by reducing liquid in the wellbores. This will be accomplished by commingling gas with lower associated water production to help lift wellbore liquid. Efficient downhole mechanical configurations such as artificial lift could be installed, which can not be effectively applied now because of the two tubing string completions.

- Surface disturbances will be minimized by reducing the total number of wells required for each spacing unit. Commingling would also reduce the required surface equipment from one set of equipment for each reservoir/tubing string to one set per well.

- Downhole commingling will allow artificial lift to be installed to extend the wells producing life.

- Ultimate gas recoveries will be increased by allowing development into marginal field areas that can not be developed if more than one tubing string and surface equipment set are required.

- Jicarilla revenues will increase in the new MDA areas by allowing reduced investments and subsequently earlier well payouts that result in increased Jicarilla royalty rates at interest reversion.

- Downhole commingling will allow Mallon to hydraulically fracture and complete more than one reservoir at a time which will reduce the time that completion equipment is on the well site, reduce investment costs, and allow development of marginal areas.

Mallon's activities on Jicarilla reservation lands and royalty rates are very uniform. Original leases had a 0.16666 royalty rate for all zones except the Fruitland Coal which had a 0.1875 royalty rate. One original lease had a royalty rate of 0.20 for all zones. New Mineral Development Agreements have a uniform royalty rate of 0.20 for all reservoirs. Downhole commingling will not affect royalty rates from wells with uniform royalty rates for all reservoirs. Downhole commingling of the Fruitland Coal reservoir on original leases with a 0.1875 royalty rate would not be applied for without appropriate production allocation to assure proper royalty payments.

The point of gas measurement and royalty payment will remain the same and will not be changed by downhole commingling. Gas properties vary by zone but test calculations were made that determined the royalty rate paid for the gas will not be affected by downhole commingling. Royalty payment test calculations are further explained in Exhibit 4.

Current spacing is 160 acres for all reservoirs except the Fruitland Coal which is 320 acre spacing. Downhole commingling of the Fruitland Coal would be limited to one completion per 320 acres as long as the Fruitland coal spacing is 320 acres.

Mallon intends to pursue downhole commingle to accomplish the above recovery and revenue improvements. This process will include:

- Applying for downhole commingling for San Jose, Nacimiento and Ojo Alamo production on a well by well basis.

- Continue with the Nacimiento formation analysis by completing the Nacimiento in additional wellbores to establish the extent of reservoir continuity/variability and establish a production characteristic curve to use in production allocation.

- Applying for downhole commingling of new Pictured Cliffs producers with new or prior Ojo Alamo, Nacimiento or San Jose zones on a well by well basis. Applications involving the Pictured Cliffs will be accompanied by pressure tests/information for this zone. The application may include a packer and backpressure valve configuration to ensure no crossflow into the Pictured Cliffs.

- Evaluate Fruitland Coal potential individually and apply for commingling with other zones after performance curves have been established for this zone.

- Evaluate and apply for field wide commingling after adequate well by well commingled cases have been approved and commingled well performance reviewed by appropriate agencies.

Mallon respectfully requests your concurrence that downhole commingling should begin on a well by well basis and be approved by the appropriate parties. Please sign below to show your concurrence and return a copy to Mallon Oil Company. If you have any questions please do not hesitate to contact me at 303-293-2333, ext. 1450. Thank you for your cooperation and assistance in this matter.

Sincerely,

Mallon Oil Company

Ray E. Jones
Vice President - Engineering

12-23-99
Date

Bureau of Land Management
Albuquerque Field Office

12-23-99
Date

Bureau of Land Management
Farmington Field Office

Date

Jicarilla Tribal Minerals

cc: Joe Muniz, Executive Director of Natural Resources
David Wong, Executive Director of Revenue and Taxation