



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION  
AZTEC DISTRICT OFFICE

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

OIL CONSERVATION DIVISION  
BOX 2088  
SANTA FE, NEW MEXICO 87501

DATE April 28, 1982

RE: Proposed MC \_\_\_\_\_  
Proposed DHC a \_\_\_\_\_  
Proposed NSL \_\_\_\_\_  
Proposed SWD \_\_\_\_\_  
Proposed WFX \_\_\_\_\_  
Proposed PMX \_\_\_\_\_

Gentlemen:

I have examined the application dated April 21, 1982  
for the Oxygen Prod. Corp. MF#4 H-14-24N-10W  
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Approve  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Yours truly,

Frank J. Long

dugan production corp.

April 7, 1982

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

Re: Application for Downhole Commingling  
MF #4 Well  
Basin Dakota Pool and Undesignated Gallup Pool  
T-24-N, R-10-W, NMPM  
Sec. 14: SE/4 NE/4  
San Juan County, New Mexico

Dear Mr. Ramey:

Enclosed please find duplicate copies of the above referenced Application for Downhole Commingling which we would like to have administratively approved under Rule 303-C.

The criteria for commingling under Rule 303-C would require the well to be completed dually and each zone tested separately. However, we feel that we can forego this requirement on the grounds that data collected from nearby wells imply that the criteria will be met by the subject well. This would save the costs of a dual completion, the additional separator and meter, and the pump which would be required. Our experience in the area indicates that the production from both the Basin Dakota and the Undesignated Gallup formations in this well would be marginal. Gas chromatograph analyses of the Sixteen G's #1 Well, (Unit letter E, Sec. 7, T24N, R9W)(Undesignated Gallup formation) and the MF #1 Well, (Unit letter L, Sec. 18, T24N, R9W)(Basin Dakota formation) indicate that these flow streams will be miscible.

Also, our successful commingling of these zones in nearby wellbores shows that the liquid flowstreams are compatible and mutually non-damaging to their counterpart zones. This experience also serves to show that, in this area, there is not enough pressure disparity at the flowing conditions to create a crossflow problem. The commingling of the zones further will facilitate the production of the Undesignated Gallup zone by the device of gas lift. The mixture of the Dakota gas and Gallup effluent will be lighter than the Gallup fluids alone. This will allow production from the Gallup without the need for a pump, lower operating costs, extend the production until abandonment and prevent waste.

New Mexico Oil Conservation Commission  
March 31, 1982  
Page Two

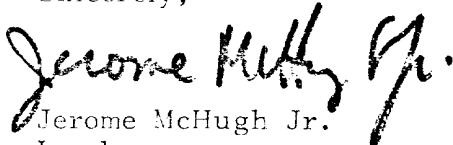
In this case, the price for which the production will be sold is not the same for the two zones. The Basin Dakota formation has been designated a Tight Gas Sand in this area, and the price for the Dakota gas will be twice that of the Gallup gas. By the use of an appropriate allocation formula, we can be sure that the value of the commingled production will not be less than the sum of the values of the individual streams.

There is a common ownership of the two zones, and the distribution of royalties is the same for both zones. For this reason, there is no danger to correlative rights which would arise from the commingling of the zones in this wellbore.

We have notified all off-set operators and/or lessees of surrounding federal leases of the proposed downhole commingling application.

We trust that all is in order for this application. If there are any questions concerning this matter, please feel free to contact either of us.

Sincerely,

  
Jerome McHugh Jr.  
Landman

  
Eric Eckelberg  
Engineer

JM/EE:nw

cc: Frank Chavez  
New Mexico Oil Conservation Commission  
1000 Rio Brazos Rd.  
Aztec, NM 87410

T24N - R10W N.M.P.M

|    |                                                                                        |                                      |                           |                                                                                                         |
|----|----------------------------------------------------------------------------------------|--------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------|
| 10 | Indian w/draw Application not open for leasing<br>Unleased Fed.<br>Tenneco Oil Company | 11<br>Tenneco Oil Company<br>NM16763 | Gulf Oil Corp.<br>NM40502 | 12<br>Chevron USA $\frac{3}{8}$<br>Energy Reserves Group $\frac{5}{8}$<br>H.B.P.<br>SF 078301<br>Supron |
| 15 |                                                                                        | 14<br>Dugan Production<br>NM 16760   | NO. 4 MF *                | NM45210 13<br>Dugan                                                                                     |
| 22 | NM25841<br>Dugan 0                                                                     | NM 16760<br>R.K. Cramer              | NO. 3 MF *                | NM16760<br>Unleased Federal EXPIRED                                                                     |
|    | NM15654                                                                                | NM30019<br>23                        |                           | NM03245 24                                                                                              |

DUGAN PRODUCTION CORP.  
MF #4

NE/4 Sec 14 T24N R10W  
San Juan County, NM

Proration Unit: N/2 Sec 14 T24N R10W

APPLICATION FOR DOWNHOLE COMMINGLING

Offset Operators

Township 24 North Range 10 West

Section 10: SE/4 Unleased Federal

Section 11: S/2 (except NE/4 SE/4 Sec 11) Tenneco Oil Co.  
NE/4 SE/4 Gulf Oil Corp.

Section 12: SW/4 Chevron USA 3/8  
Energy Reserves Group 5/8

Section 13: NW/4 Supron Energy Corp.

Section 14: SW/4 Dugan Production Corp.

Section 15: S/2 Dugan Production Corp.

Section 15: E/2 Tenneco Oil Co.

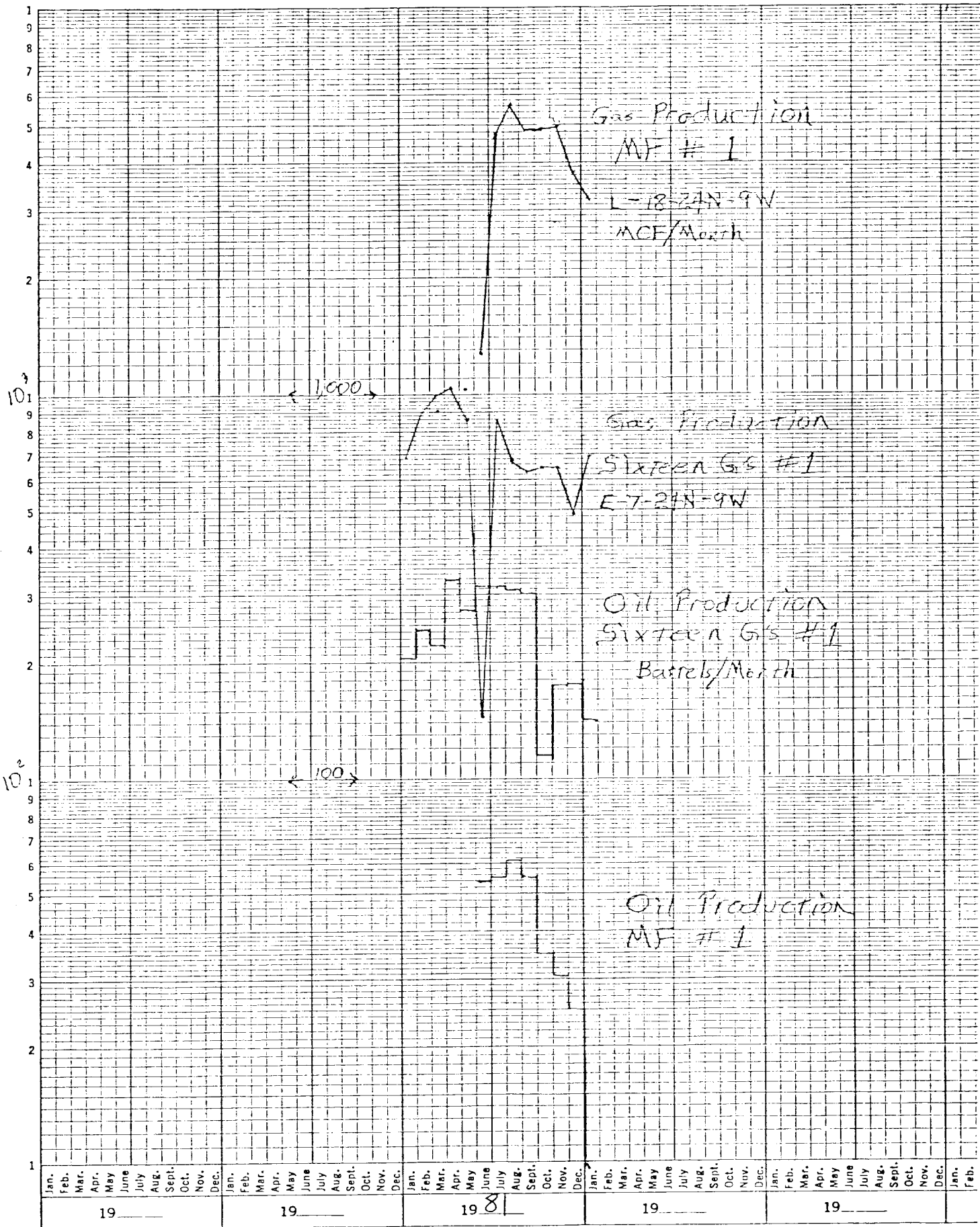
RULE 303-C (§ 2e and § 2i)

The following information shows a segment of the decline curves from the MF #1 Well, Unit letter L, Sec. 18, T24N, R9W, a Dakota producer, and the Sixteen G's #1 Well, Unit letter E, Sec. 7, T24N, R9W, an Undesignated Gallup producer. This will serve as a prognostication of future production from these zones in this area, and as an example of their relative productions, for use in arriving at an allocation formula.

For eight months, from June, 1981 until January, 1982, both the Sixteen G's and the MF #1 Wells were producing. For this period the average contribution of the Gallup well to the total production of both wells was 85.66% of the oil and 12.47% of the gas.

Two other wells in the same area are producing the commingled fluids from these zones. The July Jubilee #1 Well, Unit letter G, Sec. 30, T24N, R9W, has the gas allocated 90% to the Dakota and 10% to the Gallup, while the oil is allocated 10% to the Dakota and 90% to the Gallup. The Merry May #1 Well, Unit letter I, Sec. 24, T24N, R10W, has the gas allocated 85% to the Dakota and 15% to the Gallup. The oil from this well is allocated 15% to the Dakota and 85% to the Gallup.

Using this data as a guideline, we feel it would be appropriate to allocate the gas production from the July Jubilee #2 Well 85% to the Dakota and 15% to the Gallup. Since the oil is all valued the same, its allocation here is not critical, and the allocation of 15% of the oil to the Dakota and 85% to the Gallup should be acceptable.



11/13/81

EL PASO NATURAL GAS DEPARTMENT  
MEASUREMENT DEPARTMENT  
POST OFFICE BOX 1492  
EL PASO, TEXAS 79999

## CHROMATOGRAPHIC GAS ANALYSIS REPORTS

DUGAN PRODUCTION CORP.  
P.O. BOX 208  
FARMINGTON, NM 87401

ANAL DATE 11 11 81

METER STATION NAME  
GOOD TIMES METER SITEMETER STA 93757  
OPER 1862

| TYPE CODE | SAMPLE DATE | EFF. DATE | USE NOS. | SCALE | H2S GRAINS | LOCATI |
|-----------|-------------|-----------|----------|-------|------------|--------|
| CO        | 11 10 81    | 11 13 81  | 06       |       |            | 4 F    |

|              | NORMAL<br>MOL% | GPM   |
|--------------|----------------|-------|
| CO2          | .58            | .000  |
| H2S          | .00            | .000  |
| N2           | .73            | .000  |
| METHANE      | 87.10          | .000  |
| ETHANE       | 6.56           | 1.753 |
| PROPANE      | 2.62           | .721  |
| ISO-BUTANE   | .57            | .186  |
| NORM-BUTANE  | .72            | .227  |
| ISO-PENTANE  | .36            | .132  |
| NORM-PENTANE | .28            | .101  |
| HEXANE PLUS  | .48            | .210  |

TOTALS

100.00

3.330

SPECIFIC GRAVITY

.665

MIXTURE HEATING VALUE  
(BTU/CF AT 14.73 PSIA, 60 DEGREES, DRY) 1,159

RATIO OF SPECIFIC HEATS

1.291

NO TEST SECURED FOR H2S CONTENT

11/13/81

EL PASO NATURAL GAS COMPANY  
MEASUREMENT DEPARTMENT  
POST OFFICE BOX 1492  
EL PASO, TEXAS 79999

## CHROMATOGRAPHIC GAS ANALYSIS REPORTS

DUCAN PRODUCTION CORP.  
P.O. BOX 208  
FARMINGTON, NM 87401

ANAL DATE 11 11 81

METER STATION NAME  
SIXTEEN G'S #1METER STA 99925  
OPER 1862

| TYPE CODE | SAMPLE DATE | EFF. DATE | USE MOS. | SCALE | H2S GRAINS | LOCATI |
|-----------|-------------|-----------|----------|-------|------------|--------|
| CO        | 11 10 81    | 11 13 81  | 03       |       |            | 4 F    |

|              | NORMAL<br>MOL% | GPM   |
|--------------|----------------|-------|
| CO2          | .82            | .000  |
| H2S          | .00            | .000  |
| N2           | .91            | .000  |
| METHANE      | 65.93          | .000  |
| ETHANE       | 13.47          | 3.601 |
| PROPANE      | 11.02          | 3.032 |
| ISO-BUTANE   | 1.38           | .451  |
| NORM-BUTANE  | 3.66           | 1.153 |
| ISO-PENTANE  | .85            | .315  |
| NORM-PENTANE | .93            | .337  |
| HEXANE PLUS  | 1.02           | .446  |

TOTALS

100.00

9.335

SPECIFIC GRAVITY

.877

MIXTURE HEATING VALUE  
(BTU/CF AT 14.73 PSIA, 60 DEGREES, DRY) 1,479

RATIO OF SPECIFIC HEATS

1.257

NO TEST SECURED FOR H2S CONTENT



## GAS-OIL RATIO TESTS

| Dugan Production Corp.        |          | Bisti Lower Gallup |   | County                                          |              | San Juan                            |             |                                  |                      |                   |              |           |            |                |                   |
|-------------------------------|----------|--------------------|---|-------------------------------------------------|--------------|-------------------------------------|-------------|----------------------------------|----------------------|-------------------|--------------|-----------|------------|----------------|-------------------|
| Box 234, Farmington, NM 87401 |          | TYPE OF TEST - (X) |   | SCHEDULED <input checked="" type="checkbox"/> X |              | COMPLETION <input type="checkbox"/> |             | SPECIAL <input type="checkbox"/> |                      |                   |              |           |            |                |                   |
| LEASE NAME                    | WELL NO. | LOCATION           |   |                                                 | DATE OF TEST | CHOKE SIZE                          | TBG. PRESS. | DAILY ALLOW-ABLE                 | LENGTH OF TEST HOURS | PROD. DURING TEST |              |           |            | GAS - O M.C.F. | GAS RATIO CU.FT/B |
|                               |          | U                  | S | T                                               |              |                                     |             |                                  |                      | R                 | WATER BBL.S. | GRAV. OIL | OIL BBL.S. |                |                   |
| Sixteen G's                   | 1        | E                  | 7 | 24N                                             | 9W           | 12-28-77                            | P           | 8                                | 24                   | 1/2               | 37.5         | 10        | 35         | 3,500          |                   |

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

...the amount of oil produced on the official test.

No well will be assigned an allowable greater than the amount of oil produced during the preceding 12 months.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity bases will be 0.60.

... of tubing pressure for any well producing through casing.

Report casing pressure in lieu of tubing pressure for any well producing

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 101 and appropriate pool rules.

*Bud Craine*  
(Signature)

production Superintendent

(2111c)

December 30, 1977

(1) (b)(1)

