

EXHIBIT "B"

Schedule of Lands Entitled to Participate

|                              |   |
|------------------------------|---|
| Lease:                       | SF-078061   |
| Lessee:                      | Shell Oil Company   |
| Participating Acreage:       | 440.00  |
| Percentage of Participation: | 14.8543   |
| Description:                 | <u>T. 25N., R. 11W., N.M.P.M.</u><br>Section 17: $W\frac{1}{2}$ SE $\frac{1}{4}$ , SW $\frac{1}{4}$<br>Section 20: NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$                   |
| Lease:                       | SF-078062   |
| Lessee:                      | Shell Oil Company   |
| Participating Acreage:       | 160.00  |
| Percentage of Participation: | 5.4016  |
| Description:                 | <u>T. 25N., R. 11W., N.M.P.M.</u><br>Section 18: SE $\frac{1}{4}$   |
| Lease:                       | SF-078063   |
| Lessee:                      | Shell Oil Company   |
| Participating Acreage:       | 321.03  |
| Percentage of Participation: | 10.8379   |
| Description:                 | <u>T. 25N., R. 11W., N.M.P.M.</u><br>Section 19: Lots 1 and 2, E $\frac{1}{2}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$  |
| Lease:                       | SF-078064   |
| Lessee:                      | Shell Oil Company   |
| Participating Acreage:       | 920.00  |
| Percentage of Participation: | 31.0590   |
| Description:                 | <u>T. 25N., R. 12W., N.M.P.M.</u><br>Section 13: S $\frac{1}{2}$ , SW $\frac{1}{4}$ NW $\frac{1}{4}$ , E $\frac{1}{2}$ NE $\frac{1}{4}$<br>Section 24: N $\frac{1}{2}$ , SE $\frac{1}{4}$ |
| Lease:                       | Indian Allotted Lands 14-20-603-1440  |
| Lessee:                      | Skelly Oil Company  |
| Participating Acreage:       | 80.00   |
| Percentage of Participation: | 2.7008  |
| Description:                 | <u>T. 25N., R. 11W., N.M.P.M.</u><br>Section 20: W $\frac{1}{2}$ NE $\frac{1}{4}$   |
| Lease:                       | Indian Allotted Lands 14-20-603-1285  |
| Lessee:                      | Phillips Petroleum Company  |
| Participating Acreage:       | 161.07  |
| Percentage of Participation: | 5.4377  |
| Description:                 | <u>T. 25N., R. 11W., N.M.P.M.</u><br>Section 18: Lots 3 and 4, E $\frac{1}{2}$ SW $\frac{1}{4}$   |

## Schedule of Lands Entitled to Participate

2

Lease: SF-078067  
Lessee: Shell Oil Company  
Participating Acreage: 880.00  
Percentage of Participation: 29.7087  
Description: T. 25N., R. 12W., N.M.P.M.  
Section 11:  $S\frac{1}{2}$  SW $\frac{1}{4}$   
Section 14: All  
Section 23:  $N\frac{1}{2}$  NW $\frac{1}{4}$ ,  $N\frac{1}{2}$  NE $\frac{1}{4}$

| Summary:                  | <u>Acres</u>  | <u>Percent</u> |
|---------------------------|---------------|----------------|
| Total Federal Lands:      | 2721.03       | 91.8615%       |
| Total Indian Lands:       | <u>241.07</u> | <u>8.1385%</u> |
| Total Productive Acreage: | 2962.10       | 100.0000%      |

## EXHIBIT "B"

Schedule of Lands Entitled to Participate

|                              |  |
|------------------------------|--|
| Lease:                       | SF-078061  |
| Lessee:                      | Shell Oil Company  |
| Participating Acreage:       | 440.00   |
| Percentage of Participation: | 14.8543  |
| Description:                 | <u>T. 25N., R. 11W., N.M.P.M.</u><br>Section 17: $W\frac{1}{2}$ $SE\frac{1}{4}$ , $SW\frac{1}{4}$<br>Section 20: $NW\frac{1}{4}$ , $NE\frac{1}{4}$ $SW\frac{1}{4}$                 |
| Lease:                       | SF-078062  |
| Lessee:                      | Shell Oil Company  |
| Participating Acreage:       | 160.00   |
| Percentage of Participation: | 5.4016   |
| Description:                 | <u>T. 25N., R. 11W., N.M.P.M.</u><br>Section 18: $SE\frac{1}{4}$   |
| Lease:                       | SF-078063  |
| Lessee:                      | Shell Oil Company  |
| Participating Acreage:       | 321.03   |
| Percentage of Participation: | 10.8379  |
| Description:                 | <u>T. 25N., R. 11W., N.M.P.M.</u><br>Section 19: Lots 1 and 2, $E\frac{1}{2}$ $NW\frac{1}{4}$ , $NE\frac{1}{4}$  |
| Lease:                       | SF-078064  |
| Lessee:                      | Shell Oil Company  |
| Participating Acreage:       | 920.00   |
| Percentage of Participation: | 31.0590  |
| Description:                 | <u>T. 25N., R. 12W., N.M.P.M.</u><br>Section 13: $S\frac{1}{2}$ , $SW\frac{1}{4}$ $NW\frac{1}{4}$ , $E\frac{1}{2}$ $NE\frac{1}{4}$<br>Section 24: $N\frac{1}{2}$ , $SE\frac{1}{4}$ |
| Lease:                       | Indian Allotted Lands 14-20-603-1440   |
| Lessee:                      | Skelly Oil Company   |
| Participating Acreage:       | 80.00  |
| Percentage of Participation: | 2.7008   |
| Description:                 | <u>T. 25N., R. 11W., N.M.P.M.</u><br>Section 20: $W\frac{1}{2}$ $NE\frac{1}{4}$  |
| Lease:                       | Indian Allotted Lands 14-20-603-1285   |
| Lessee:                      | Phillips Petroleum Company   |
| Participating Acreage:       | 161.07   |
| Percentage of Participation: | 5.4377   |
| Description:                 | <u>T. 25N., R. 11W., N.M.P.M.</u><br>Section 18: Lots 3 and 4, $E\frac{1}{2}$ $SW\frac{1}{4}$  |

## Schedule of Lands Entitled to Participate

2

Lease: SF-078067  
Lessee: Shell Oil Company  
Participating Acreage: 880.00  
Percentage of Participation: 29.7087  
Description: T. 25N., R. 12W., N.M.P.M.  
Section 11:  $S\frac{1}{2}$  SW $\frac{1}{4}$   
Section 14: All  
Section 23:  $N\frac{1}{2}$  NW $\frac{1}{4}$ ,  $N\frac{1}{2}$  NE $\frac{1}{4}$

| Summary:                  | <u>Acres</u>  | <u>Percent</u> |
|---------------------------|---------------|----------------|
| Total Federal Lands:      | 2721.03       | 91.8615%       |
| Total Indian Lands:       | <u>241.07</u> | <u>8.1385%</u> |
| Total Productive Acreage: | 2962.10       | 100.0000%      |



IN REPLY REFER TO:

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
P. O. Box 6721  
Roswell, New Mexico

April 2, 1938

Shell Oil Company  
101 South Behrend Avenue  
Farmington, New Mexico

Attention: Mr. R. R. Robinson

Gentlemen:

Your plan of development dated March 11, 1938, for the Carson unit area, San Juan County, New Mexico, No. 14-08-001-3485, proposing the drilling of four wells to the Gallup sandstone has been approved on this date, subject to like approval by the appropriate officials of the State of New Mexico.

It is suggested that future plans of development be submitted to cover specific periods of time in accordance with section 10 of the unit agreement.

Four approved copies of the plan of development are enclosed.

Very truly yours,

JAMES A. KNAUF  
Acting Oil and Gas Supervisor

Copy to: Washington (w/copy of plan)  
Farmington (w/copy of plan)  
✓ Oil Conservation Commission, Santa Fe (letter only)  
Commissioner of Public Lands, Santa Fe (letter only)

**OIL CONSERVATION COMMISSION**

P. O. BOX 871

SANTA FE, NEW MEXICO

**March 28, 1958**

**Shell Oil Company  
101 South Behrend Avenue  
Farmington, New Mexico**

**Attention: Mr. R. Robison**

**Re: Carson Unit Area  
San Juan County, N.M.  
Fourth Supplemental Plan  
of Development**

**Gentlemen:**

**This is to advise that the New Mexico Oil Conservation Commission has this date approved the Fourth Supplemental Plan of Development for the Carson Unit Area, dated March 11, 1958, subject to like approval by the United States Geological Survey and by the Commissioner of Public Lands of the State of New Mexico.**

**Very truly yours,**

**A. L. PORTER, Jr.,  
Secretary-Director**

**ALP:RLS:ir**



## SHELL OIL COMPANY

101 South Behrend Avenue  
Farmington, New Mexico

March 11, 1958

Re: Carson Unit Agreement  
14-08-001-3485  
Fourth Supplemental Plan  
of Development

New Mexico Oil Conservation Commission  
125 Mabry Hall  
Capitol Building  
Santa Fe, New Mexico

Attention Mr. D. S. Nutter

Gentlemen:

We enclose two copies of the Fourth Supplemental Plan of Development for the Carson Unit dated March 11, 1958, for your use. If this Plan of Development meets with your approval, please send one approved copy to the United States Geological Survey, Post Office Box 6721, Roswell, New Mexico.

Yours very truly,

R. R. Robison  
Division Production Manager

Enclosures

*1 copy of 14-08-001-3485*



# SHELL OIL COMPANY

101 South Behrend Avenue  
Farmington, New Mexico

MAR 11 1958

Re: Carson Unit Agreement  
14-08-001-3485  
Fourth Supplemental Plan  
of Development

Approved.....March 28.....1958

*A. L. Porter, Jr.*  
Secretary-Director

Mr. John A. Anderson, Supervisor  
United States Geological Survey  
Roswell, New Mexico

NEW MEXICO OIL CONSERVATION COMMISSION

Dear Mr. Anderson:

We submit for your consideration our Fourth Supplemental Plan of Development which would involve the drilling of four additional wells which by designation and description are:

| <u>Well</u>       | <u>Location</u>   |
|-------------------|---|
| Carson Unit 21-13 | NE $\frac{1}{4}$ NW $\frac{1}{4}$ Section 13, T. 25 N., R. 12 W., N. M. P. M. |
| Carson Unit 32-13 | SW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 13, T. 25 N., R. 12 W., N. M. P. M. |
| Carson Unit 23-24 | NE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 24, T. 25 N., R. 12 W., N. M. P. M. |
| Carson Unit 32-17 | SW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 17, T. 25 N., R. 11 W., N. M. P. M. |

Knowledge gained in drilling since filing the Third Supplemental Plan of Development indicates that these four wells will probably develop commercial production. We request your early approval of the wells so that they may be drilled starting in the latter half of April 1958 with the drilling rig we currently have operating in the field.



For your information, we are attaching a copy of Shell's request for rehearing in the Bisti Field spacing matter.

Yours very truly,



R. R. Robison  
Division Production Manager

Attachments

- cc - Humble Oil & Refining Company  
P. O. Box 2180  
Houston 1, Texas
- Phillips Petroleum Company  
Bartlesville, Oklahoma  
Attention L. E. Fitzjarrald
- Phillips Petroleum Company  
1200 Denver Club Building  
Denver 2, Colorado  
Attention Mr. W. M. Schull
- Skelly Oil Company  
P. O. Box 1650  
Tulsa 2, Oklahoma  
Attention Mr. C. L. Blacksher  
Attention Mr. Thompson - Land Department
- El Paso Natural Gas Products Company  
P. O. Box 1161  
El Paso, Texas  
Attention Mr. R. L. Hamblin
- Commissioner of Public Lands
- New Mexico Oil Conservation Commission



## FOUR CORNERS PIPE LINE COMPANY

SHELL BUILDING  
P. O. BOX 2648  
HOUSTON 1, TEXAS  
January 29, 1958

TELEPHONE: CAPITOL 2-1181

New Mexico Conservation Commission  
District No. 3  
Aztec, New Mexico

Attention Mr. Emery C. Arnold

Gentlemen:

This is further to our letter of January 9, 1958, concerning gathering operations of the Four Corners Pipe Line Company from the Shell Oil Company L. M. Phillips No. 2 Lease (referred to as the Phillips No. 2 Unit in our previous correspondence) and the Shell Oil Company Carson Unit, both in San Juan County.

Since our letter of January 9, additional information has been furnished us concerning the L. M. Phillips No. 2 Lease and we now agree that Four Corners Pipe Line Company should be shown on all applicable C-110's as the gatherer from this lease.

As far as the Carson Unit is concerned, we are agreeable to comply, on a temporary basis, with your verbal request of January 28 to our Mr. H. A. Schneider and have Four Corners Pipe Line Company shown as the gatherer of the Carson Unit on all applicable C-110's. From the above mentioned conversation, it is our understanding that Four Corners will be responsible only for running that total quantity of oil from the Carson Unit as is determined by the sum of the individual well allowables multiplied by the calendar days in the respective month. These individual well allowables will be available to us for the Carson Unit as well as the Phillips Lease from a regular published monthly proration schedule furnished by the New Mexico Conservation Commission. It is our further understanding that any breakdown of the total quantity run from the Carson Unit by individual wells or leases within or outside the participating boundaries of the Unit will not be the responsibility of Four Corners Pipe Line Company.

Should actual gathering operations now or in the future alter this procedure, we will be obliged to review our position with you at that time.

In order to expedite the handling of our copies of the Form C-110 and C-115, we would appreciate receiving them at the following address: Four Corners Pipe Line Company, P. O. Box 403, Flagstaff, Arizona, Attention Mr. J. K. Alfred.

Attached is a corrected monthly report, Form C-112, for the month of December 1957.

Very truly yours,  
ORIGINAL SIGNED BY  
G. H. MILLER

HAS:mb

For: J. B. Thompson

cc: New Mexico Conservation Commission, Santa Fe, New Mexico  
Shell Oil Company, Farmington, New Mexico

Four Corners Pipe Line Company, Flagstaff, Ariz., Att: Mr. J. K. Alfred  
Attachment



# SHELL OIL COMPANY

101 South Behrend Avenue  
Farmington, New Mexico

December 6, 1957

Phillips Petroleum Company  
Bartlesville, Oklahoma  
Attention Mr. L. E. Fitzjarrald

Skelly Oil Company  
P. O. Box 1650  
Tulsa 2, Oklahoma  
Attention Mr. J. H. McCulloch

Gentlemen:

Pursuant to Article 4.6 (Consent to Drilling) of the Amendment to the Unit Operating Agreement for the Development and Operation of the Carson Unit Area, San Juan County, New Mexico, dated August 1, 1956, we submit for your approval the attached AFE's for drilling and completing twelve wells on the Carson Unit, inside the Participating Area. The wells by designation and description are:

| <u>80 Acre Wells</u> | <u>Location</u>               | <u>Estimated<br/>Depth</u> |
|----------------------|-------------------------------|----------------------------|
| Carson Unit 12-13    | SW/4 NW/4 Sec. 13, T25N, R12W | 5015'                      |
| Carson Unit 23-13    | NE/4 SW/4 Sec. 13, T25N, R12W | 5110'                      |
| Carson Unit 14-18    | SW/4 SW/4 Sec. 18, T25N, R11W | 5015'                      |
| Carson Unit 23-18    | NE/4 SW/4 Sec. 18, T25N, R11W | 5005'                      |
| Carson Unit 43-18    | NE/4 SE/4 Sec. 18, T25N, R11W | 5050'                      |
| Carson Unit 32-19    | SW/4 NE/4 Sec. 19, T25N, R11W | 5005'                      |
| Carson Unit 41-19    | NE/4 NE/4 Sec. 19, T25N, R11W | 4985'                      |
| Carson Unit 43-24    | NE/4 SE/4 Sec. 24, T25N, R12W | 4985'                      |

| <u>40 Acre Wells</u> | <u>Location</u>               | <u>Depth</u> |
|----------------------|-------------------------------|--------------|
| Carson Unit 13-17    | NW/4 SW/4 Sec. 17, T25N, R11W | 5045'        |
| Carson Unit 44-18    | SE/4 SE/4 Sec. 19, T25N, R11W | 5070'        |
| Carson Unit 11-19    | NW/4 NW/4 Sec. 19, T25N, R11W | 5010'        |
| Carson Unit 31-19    | NW/4 NE/4 Sec. 19, T25N, R11W | 5000'        |

The wells are among the 53 wells included in our Third Supplemental Plan of Development dated July 8, 1957, forwarded to the U.S.G.S. on July 10, 1957, the N.M.O.C.C. and the New Mexico Commissioner of Public Lands. State approvals were obtained on July 23, 1957 and July 24, 1957. U.S.G.S. approval was obtained on October 15, 1957. Copies of this correspondence have been furnished you. These wells are shown on the accompanying plat. The cost of drilling

and completing each of these wells is estimated to be \$39,000, or a total of approximately \$468,000. The approximate percentage cost to each working interest owner as of the present is shown on the enclosed AFE's and the final costs will be allocated based upon the Investment Adjustment as set forth under Article 5 of the Unit Operating Agreement for the Development and Operation of the Carson Unit Area, San Juan County, New Mexico, dated August 1, 1956.

You will note that eight of the proposed wells are 80-acre locations, which were approved in principle by TWX from Phillips dated September 4, 1957 signed by Mr. L. E. Fitzjarrald, and a telegram from Skelly dated August 12, 1957 signed by Mr. C. L. Blacksher in reply to our telegram of August 9, 1957. The remaining four wells are infilling 40-acre locations.

As you know, we have developed our acreage outside the Carson Unit on 40-acre spacing in accordance with the New Mexico Oil Conservation Commission's Order No. R.1069 in Case 1308 including their latest order dated November 4, 1957, and we intend to drill our acreage in the Unit outside the Participating Area on 40-acre spacing. Specifically, we intend drilling Carson Units 11-14, 21-14, 23-14, 33-14, 34-14, 43-14, and 44-14 in the immediate future.

We shall appreciate your early consent to the drilling for which we have enclosed AFE's in duplicate. Your approval may be evidenced by signing and returning one copy for each well approved. Two strings of tools are being used continuously in development drilling and the economic advantage of this continuity prompts us to request that you give this matter your immediate attention.

Very truly yours,



R. R. Robison  
Division Production Manager

cc - Humble Oil and Refining Co.  
P. O. Box 2180  
Houston 1, Texas

Phillips Petroleum Co.  
1200 Denver Club Building  
Denver 2, Colorado  
Attention Mr. W. M. Schul

El Paso Natural Gas Products Co.  
El Paso, Texas

U. S. Geological Survey  
Roswell, New Mexico  
Attention Mr. J. R. Anderson

New Mexico Oil Conservation Commission  
Santa Fe, New Mexico  
Attention Mr. A. L. Porter

Commissioner of Public Lands  
Santa Fe, New Mexico  
Attention Mr. Murray Morgan





## SHELL OIL COMPANY

1901 Main Avenue  
Durango, Colorado

November 7, 1957

Subject: Carson Area  
Carson Unit Agreement  
No. 2576

New Mexico Oil Conservation Commission  
125 Mabry Hall  
Capitol Building  
Santa Fe, New Mexico

Attention Mr. D. S. Nutter

Gentlemen:

We refer to our Third Revision of the Gallup Participating Area under the Carson Unit Agreement which was approved by your office on September 25, 1957.

Enclosed herewith for your information and files is a copy of said Application showing the approval of the U. S. Geological Survey on October 30, 1957, effective July 1, 1957.

Very truly yours,

  
F. W. Nantker  
Division Land Manager

Enclosure

# PHILLIPS PETROLEUM COMPANY

MAIN OFFICE 000

BARTLESVILLE, OKLAHOMA

1957 OCT 23 AM 7:57      October 21, 1957

*File 1085*  
Re: Carson Area  
Carson Unit Agreement

Shell Oil Company  
1901 Main Avenue  
Durango, Colorado

Attention: Mr. F. W. Nantker

Gentlemen:

By your letter of October 8, 1957, we were notified of your Application for Approval of the Fourth Revision of the Participating Area for the Gallup (Upper Cretaceous) Pool - Carson Unit, San Juan County, New Mexico, No. 14-08-001-3485, dated October 4, 1957, to include 120 acres on which there were two wells completed, one for an initial potential of 51 BOPD and the other for 77 BOPD. From the above dates, it is obvious you did not desire an expression from Phillips Petroleum Company prior to filing the application.

As far back as January 15, 1957, I wrote your Mr. H. P. Crandall at Los Angeles with respect to establishing the initial participating area that while we offered no objection to the initial participating area we did state that "this is a stratigraphic accumulation from sands having erratic deposition and production potentials, particularly after fracturing, and we feel more production history from wells completed should be obtained and furnished than is presently available prior to establishing or enlarging participating areas." If these two wells pumped only the amount of oil reported immediately after recovery of free and load oil, it is questionable whether they are capable of producing oil and gas in paying quantities as defined in both the Unit Agreement and the Unit Operating Agreement.

It is possible Mr. Crandall did not forward to your office a copy of our letter of January 15, 1957, and in order that your files will contain a copy thereof, one is enclosed.

October 21, 1957

I do not know whether you polled the other working interest owners prior to filing this application for the Fourth Revision, but as partners in this venture, we certainly feel we are entitled to our opinion prior to submittal of such applications; and, for that matter, we feel that a pumping or flowing gauge of at least 100 barrels of oil per day for a specified period of time should be established as a minimum qualification for inclusion of a well and the 80 acres upon which it is drilled in a participating area.

This is for the simple reason we are quite confident that when wells of the nature of the two presently under consideration are produced for any length of time, you will find a rapid decline with the possibility of not repaying cost much less a reasonable profit; and contraction of a participating area is unpleasant and an arduous task.

Yours very truly,

R. F. Rood, Manager  
Northwest Region  
Land & Geological Department

RFR:lh

Enc.

cc - Supervisor  
United States Geological Survey  
Roswell, New Mexico

New Mexico Oil Conservation Commission COPY FOR  
125 Mabry Hall, Capitol Building  
Santa Fe, New Mexico

Commissioner of Public Lands  
125 Mabry Hall, Capitol Building  
Santa Fe, New Mexico

Shell Oil Company  
Shell Building  
Los Angeles, California

Mr. C. W. Corbett

Phillips Petroleum Company  
Durango Office







IN REPLY REFER TO:

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

P. O. Box 6721  
Roswell, New Mexico

October 15, 1957

Shell Oil Company  
1901 Main Avenue  
Durango, Colorado

Attention: Mr. F. W. Nantker  
Division Land Manager

Gentlemen:

The 1957 third supplemental plan of development, dated July 8, 1957, for the Carson unit area, San Juan County, New Mexico, No. 14-08-001-3485, proposes the drilling of 53 wells to the Gallup sandstone at locations indicated on an accompanying map. This plan of development was approved by the appropriate officials of the State of New Mexico on July 23 and 24, 1957. Your letter of July 24, 1957, requested that consideration of the plan be deferred because of the lack of unanimity among the working interest owners of the Carson Unit. Apparently, the objections to 40-acre spacing have now been resolved and you request our further consideration of the plan.

The first interim plan of development for the Carson Unit, dated August 19, 1957, covering the drilling of nine wells included in the third supplemental plan of development, was approved by this office on August 23, 1957.

The third supplemental plan of development for the Carson Unit has been approved today. Four copies of the approved plan are enclosed.

Very truly yours,

JOHN A. ANDERSON  
Regional Oil and Gas Supervisor

Copy to: Washington (w/copy of plan)  
Farmington (w/copy of plan)  
Oil Conservation Commission, Santa Fe (letter only)



SHELL OIL COMPANY MAIN OFFICE OCC

1901 Main Avenue  
Durango, Colorado

1957 OCT 14 AM 8:22

October 10, 1957

Subject: Carson Area  
Carson Unit Agreement

New Mexico Oil Conservation Commission  
125 Mabry Hall  
Capitol Building  
Santa Fe, New Mexico

Attention Mr. D. S. Nutter

Gentlemen:

Enclosed find a copy of our interim Plan of Development  
which we sent to the U. S. Geological Survey on October 9, 1957.

Very truly yours,

  
F. W. Nantker  
Division Land Manager

Enclosure

cc - Commissioner of Public Lands  
Santa Fe, New Mexico



## SHELL OIL COMPANY

1901 Main Avenue  
Durango, Colorado

October 9, 1957

Subject: Carson Area  
Carson Unit Agreement - No. 2576  
San Juan County, New Mexico

U. S. Geological Survey  
P. O. Box 6721  
Roswell, New Mexico

Gentlemen:

We refer to our letter of August 19, 1957, wherein we requested approval of an interim Plan of Development of 9 wells based upon our 53 well program submitted to you under our letter of July 10, 1957, from Salt Lake City. As you know, this interim plan was approved by you on August 23, 1957. We have now reached the position where we have nearly completed drilling all wells authorized under approved plans of development. An interim plan is necessary while we are awaiting the decision of the New Mexico Oil Conservation Commission on the application of Sunray Mid-Continent Oil Company for 80-acre spacing for lower Gallup sand wells in the Bisti Field.

As a second interim plan we propose to drill the 80-acre location wells shown in the 53 well plan of July 10, 1957. These wells would be the center of the northeast quarter and the southwest quarter of each quarter section. We have not changed our position with regard to spacing, feeling that 40-acre wells are necessary for adequate development of the field, but to maintain continuous operations, it is necessary that a temporary plan be approved.

The other working interest owners in the Carson Unit, Skelly, El Paso, Humble, and Phillips, have heretofore approved the drilling of these 80-acre locations and we attach copies of telegrams from them to this effect. The New Mexico Oil Conservation Commission and the Commissioner of Public Lands have already approved the 53 well program.

Your early approval of this interim plan would be appreciated.

Very truly yours,

F. W. Nantker  
Division Land Manager

CLASS OF SERVICE

This is a **Day Letter** unless otherwise indicated by the proper symbol.

# WESTERN UNION TELEGRAM

W. P. MARSHALL, President

1201

SYMBOLS

DL = Day Letter

NL = Night Letter

LT = International Letter Telegram

The filing time shown in the date line on domestic telegrams is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination.

LA78

AUG 12 PM 12 01

(43)

L EPA170 PD=FAX EL PASO TEX 12 1137AMM=

SNELL OIL CO, ATTN R R ROBINSON=

FARMINGTON NEW MEXICO=

RE: THIRD SUPPLEMENTAL DRILLING PROGRAM, CARSON UNIT.  
EL PASO NATURAL GAS PRODUCTS COMPANY HAS SUCCEEDED TO  
INTEREST OF EL PASO NATURAL GAS COMPANY IN OUR ACREAGE  
IN THE CARSON UNIT. WE HEREBY APPROVE THE DRILLING OF  
ANY WELLS INCLUDED ON YOUR PLAN OF DEVELOPMENT SO LONG  
AS, AND ONLY SO LONG AS, THEY ARE DRILLED ON 80-ACRE  
LOCATIONS. IT IS OUR UNDERSTANDING THAT THEY WILL BE  
LOCATED IN THE NE/4 AND SW/4 OF EACH QUARTER SECTION=R

L HANBLIN MGR LAND DEPT

CONCERNING ITS SERVICE

CLASS OF SERVICE

This is a  
unless  
water is  
properly  
disposed of.

The following is a

# WESTERN UNION TELEGRAM

(10) 20

LA15 DC263

D MDA221 LONG PD=MIDLAND TEX 14 232PMC=

R R ROBINSON=

SHELL OIL CO FARMINGTON NMEX=

HUMBLE APPROVES YOUR PLAN TO DRILL ON 80 ACRE SPACING  
IN CARSON UNIT, SAN JUAN COUNTY, NEW MEXICO AS OUTLINED  
IN YOUR WIRE TO OUR HOUSTON OFFICE. WE ARE PRESENTLY  
STUDYING YOUR MOST RECENT PLAN OF DEVELOPMENT AND  
PROBABLY WILL HAVE A REPRESENTATIVE PRESENT AT THE NEXT  
MEETING TO DISCUSS SPACING OF WELLS IN THE UNIT.  
HUMBLE OIL & REFINING CO BY W L MCWILLAN=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS

FOR BETTER SERVICE

CLASS OF SERVICE

This is a service unless its letter is indicated by proper symbol.

# WESTERN UNION TELEGRAM

W. U. TELEGRAMS ARE SENT BY

SYMBOLS

DL = Day Letter

NL = Night Letter

IT = International Letter Telegram

1201

The following time shown

is for the time

Domestic telegrams in STAN

is for the time

of TIME at point of destination

LA45 KB101

K TUC085 PD=FAX TULSA OKLA 12 1039AMC=

R R ROBISON:

SNELL OIL CO FARMINGTON NMEX:

RETEL CARSON UNIT SKELLY APPROVES 80 ACRE LOCATIONS  
ON YOUR MOST RECENT PLAN OF DEVELOPMENT. IN VIEW OF  
POSSIBLE ORDER RESULTING FROM SEPTEMBER 18 HEARING  
ON SUNDAY MID-CONTINENT APPLICATION WOULD SUGGEST  
FLEXIBLE SPACING OF 660 FEET MINIMUM RATHER THAN NEAR  
PATTERN LOCATIONS AS LONG AS WELLS ARE IN DIAGONALLY  
OPPOSITE CORNERS IN EACH GOVERNMENTAL QUARTER LOCATIONS.  
IN EITHER EVENT WE ARE AGREEABLE TO 80-ACRE DENSITY

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

ON FIXED OR FLEXIBLE PATTERNS

SKELLY OIL CO C L BLACKSHER:

*mm*

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE



BARTLESVILLE O. 1 307 P SEPT 8 1957

SHELL OIL COMPANY

1901 MAIN AVENUE

DURANGO COLORADO

ATTN F W NANTKER

RE YOUR LETTER 8-22-57 CARSON AREA. PHILLIPS, REPLIED TO THE TELEGRAM OF 8-9-57 QUOTED IN THE REFERENCE LETTER BY WIRE TO MR. R R ROBISON DATED 8-12-57. MR. ROBISON ACKNOWLEDGED RECEIPT OF OUR WIRE BY HIS WIRE DATED 8-19-57. FOR YOUR INFORMATION OUR REPLY TO MR ROBISON WAS AS FOLLOWS.. "RETEL 8-9-57 CARSON UNIT. PHILLIPS PETROLEUM COMPANY APPROVES PLAN OF DEVELOPMENT INsofar AS 80 ACRE SPACED WELLS ARE CONCERNED. REQUEST YOU SUBMIT INDIVIDUAL WELL PROPOSALS AND AFE'S FOR THOSE WELLS INCLUDED WITHIN THE PARTICIPATING AREA FOR SEPARATE APPROVAL BY PHILLIPS PETROLEUM COMPANY".

L E FITZJARRALD

PHILLIPS PETROLEUM COMPANY

M



MAIN OFFICE SHELL OIL COMPANY

MI 7:55

1901 Main Avenue  
Durango, Colorado

October 4, 1957

Subject: Carson Area  
Carson Unit

*file*

Supervisor  
United States Geological Survey  
P. O. Box 6721  
Roswell, New Mexico

Attention Mr. James A. Knauf  
Acting Oil and Gas Supervisor

Gentlemen:


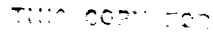

Enclosed please find the formal application for the expansion of the Participating Area, as requested by your letter of October 1, 1957.

Very truly yours,

Original Signed By  
H. V. COWNIE

For F. W. Nantker  
Division Land Manager

RMCC:MLM  
Enclosure

cc - New Mexico Oil Conservation Commission (with enclosure)    
Commissioner of Public Lands (with enclosure) 



## SHELL OIL COMPANY

1901 Main Avenue  
Durango, Colorado

October 4, 1957

Subject: Application for Approval of  
the Third Revision of the  
Participating Area for the  
Gallup (Upper Cretaceous)  
Pool - Carson Unit  
San Juan County, New Mexico  
No. LH-08-001-3485

Director  
United States Geological Survey  
Washington, D. C.  
Through  
Supervisor  
United States Geological Survey  
Roswell, New Mexico

New Mexico Oil Conservation Commission  
125 Mabry Hall  
Capitol Building  
Santa Fe, New Mexico

Commissioner of Public Lands  
125 Mabry Hall  
Capitol Building  
Santa Fe, New Mexico

Gentlemen:

Shell Oil Company, as Unit Operator under that certain Unit Agreement for the Carson Unit Area, approved by the Acting Commissioner of Indian Affairs and by the Acting Director of the United States Geological Survey, effective November 15, 1956, pursuant to the provision of Section 11 thereof requiring the revision of a participating area to include additional land when the same shall have been reasonably proved to be productive of unitized substances in paying quantities, respectfully submits for the approval of said Director, the selection of the following described lands to be added to the participating area to constitute the third revision of the participating area for the Gallup (Upper Cretaceous) Pool in the Carson Unit Area, to wit:

Director, U. S. Geological Survey  
Washington, D. C.  
Through  
Supervisor, U. S. Geological Survey  
Roswell, New Mexico

New Mexico Oil Conservation Commission

Commissioner of Public Lands

Township 25 North, Range 12 West, N.M.P.M.

Section 13: SW-1/4 NW-1/4

Section 14: NE-1/4

containing 200.00 acres, more or less

In support of this application, applicant attaches hereto, and makes a part of, the following:

1. A map, marked Exhibit "A", showing thereon the boundary of the present participating area and the proposed revision thereof.
2. A schedule, marked Exhibit "B", showing the various lands entitled to participate in the unitised substances produced from the Gallup (Upper Cretaceous) formation, with the percentage of participation of each lease or tract indicated thereon.

Applicant has submitted separately, in triplicate, its Geologic and Engineering report, with enclosures, supporting its suggested selection of the proposed participating area.

This proposed revision of the participating area is predicated upon the knowledge and information first obtained upon the completion of Unit Well No. 41-14. Carson Unit No. 41-14 is located in the northeast quarter of the northeast quarter (NE-1/4 NE-1/4) of Section 14, Township 25 North, Range 12 West, N.M.P.M., and was completed July 30, 1957 in the Gallup (Upper Cretaceous) intervals 4872-97 feet, 4902-08 feet, 4948-61 feet, and 4965-75 feet with an initial production of 198 b/d oil. We consider Carson Unit 41-14 as a paying well under the Unit Agreement.

Therefore, applicant respectfully requests that the said Director approve the hereinabove selection of said lands to be added to

Director, U. S. Geological Survey  
Washington, D. C.  
Through  
Supervisor, U. S. Geological Survey  
Roswell, New Mexico

3

New Mexico Oil Conservation Commission  
Commissioner of Public Lands

the participating area to constitute the third revision of the partici-  
pating area to be effective July 1, 1957.

Very truly yours,

SHELL OIL COMPANY

*[Signature]*  
For E. W. Nantker  
Division Land Manager

Attachments

Approved this \_\_\_\_\_ day of  
\_\_\_\_\_, 1957

New Mexico Oil Conservation Commission

By \_\_\_\_\_

Approved this \_\_\_\_\_ day of  
\_\_\_\_\_, 1957

Commissioner of Public Lands

by \_\_\_\_\_

Approved this \_\_\_\_\_ day of  
\_\_\_\_\_, 1957

U. S. Geological Survey

By \_\_\_\_\_

MAIN OFFICE OCC  
1957 AUG 22 AM 8:23

Geological and Engineering Report  
Proposed Third Revision of Participating Area  
Gallup (Upper Cretaceous) Pool-Carson Unit  
San Juan County, New Mexico

The following data are submitted in support of the application for approval of the Third Revision of the Participating Area in the Carson Unit area. This revision adds 200 acres to the Second Revised Participating Area and increases the area of participation to 1962.10 acres. Enclosure 1 illustrates the existing and proposed participating areas.

Well Data

Carson Unit 41-14 was completed in the Gallup (Upper Cretaceous) Pool of the Carson Unit.

Location: 660' S and 660' W of the NE Corner, Section 14,  
T. 25 N., R. 12 W., N.M.P.M.

Total Depth: 5090'

Perforated Intervals: 4872-97', 4902-08', 4948-61', 4965-75'

Feet Microlog Pay: 9'

Feet Pay Without Separation: 6'

Initial Production: Flowed 108 B/D oil with 0.1% cut on a  
42/64" choke after recovering 162  
barrels load and frac oil.

Completion Date: July 30, 1957

Current Status: Production Testing

Carson Unit 41-14 was fracture treated employing a radioactive tracer as part of a completion method study. The tracer log indicated only the lowermost Gallup sands - those having a very low order of permeability - were fractured. The upper Gallup sand ("G<sub>c</sub>" sand) is believed to have contributed to the production, but at a lesser rate than would be possible if the sand had been effectively treated. We believe Carson Unit 41-14 to be a paying well in its present condition and further stimulation will undoubtedly increase the potential.

Twelve Carson Unit wells have been drilled or are drilling but have not been completed. Completions on five of these wells are expected in August. The status of these wells is tabulated on the following page.

| <u>Well</u> | <u>Location</u>                                     | <u>TD</u> | <u>Status</u>   |
|-------------|---|-----------|---|
| Unit 3      | 530' E & 1818' N of SW Corner, Sec. 7, T25N, R11W   | 5004'     | Installing pumping unit                                 |
| Unit 41-13  | 660' S & 660' W of NE Corner Sec. 13, T25N, R12W    | 5050'     | Pumping unit installed, testing                         |
| Unit 23-20  | 1977' N & 1766' E of SW Corner, Sec. 20, T25N, R11W | 5079'     | Pumping unit installed, testing                         |
| Unit 32-14  | 1980' S & 1980' W of NE Corner, Sec. 14, T25N, R12W | 5073'     | Fracture treating                                       |
| Unit 41-23  | 660' S & 660' W of NE Corner, Sec. 23, T25N, R12W   | 5072'     | Fracture treated in poor pay only, awaiting completion. |
| Unit 34-13  | 660' N & 1976' W of SE Corner, Sec. 13, T25N, R12W  | 5104'     | Fracture treated in poor pay only, awaiting completion  |
| Unit 34-17  | 660' N & 1942' W of SE Corner, Sec. 17, T25N, R11W  | 5032'     | Not perforated  |
| Unit 43-17  | 1880' N & 660' W of SE Corner, Sec. 17, T25N, R11W  | 5100'     | Not perforated  |
| Unit 12-20  | 1980' S & 660' E of NW Corner, Sec. 20, T25N, R11W  | 5065'     | Not perforated  |
| Unit 21-19  | 660' S & 1980' E of NW Corner, Sec. 19, T25N, R11W  | 5026'     | Not perforated  |
| Unit 34-19  | 660' N & 1980' W of SE Corner, Sec. 19, T25N, R11W  | 5000'     | Fracture treating                                       |
| Unit 14-17  | 660' N & 660' E of SW Corner, Sec. 17, T25N, R11W   | -         | Drilling  |

### Geology and Reservoir

In previous proposals for participating areas (see Geological and Engineering Reports supporting the proposals of Initial Participating Area and First Revision of the Participating Area, January 18, 1957 and April 26, 1957 respectively) data were presented suggesting fair continuity of sand development along the northwest-southeast pay trend, and poor continuity in the transverse direction. Also, better sand development was to be found toward the center

of the trend. Subsequent well data has generally supported these observations and substantiates our feeling that the participating area can be extended along trend with confidence but that transverse extensions are less predictable.

### Conclusion

It is recommended that the participating area of the Carson Unit be extended to include the lands in the vicinity of Carson Unit 41-14, these lands having been reasonably proven productive by the completion of the paying well. Accordingly, we recommend that an area of 200 acres be added to the participating area outlined in our proposal for the Second Revision of the Participating Area. The lands in the participating area, thus revised, should be described as follows:

#### Township 25 North, Range 11 West, NMPM

Section 17: W/2 SE/4, SW/4  
Section 18: Lots 3 and 4, E/2 SW/4, SE/4  
Section 19: Lots 1 and 2, E/2 NW/4, NE/4  
Section 20: NW/4, W/2 NE/4

#### Township 25 North, Range 12 West, NMPM

Section 13: SW/4 NW/4, S/2  
Section 14: NE/4  
Section 24: E/2

It is further recommended that the effective date of the above described Third Revision to the Participating Area be July 1, 1957, the first of the month in which Carson Unit 41-14 was completed.

SEP 26 1957

Approved.....19.....

*A. L. Carter, Jr.*  
.....  
Secretary-Director

NEW MEXICO OIL CONSERVATION COMMISSION

SHELL OIL COMPANY

*R. S. MacAlister, Jr.*  
R. S. MacAlister, Jr.  
Division Exploitation Engineer  
Farmington Division

### Attachments

Net microlog pay - Gallup sandstone  
G<sub>c</sub> sand pay  
G<sub>d</sub> sand pay

Approved *Sept. 27, 1957*

*W. H. M. Rye*  
COMMISSIONER OF PUBLIC LANDS





PLAIN OFFICE 000

SHELL OIL COMPANY

1901 Main Avenue  
Durango, Colorado

October 3, 1957

Subject: Carson Area  
Carson Unit Agreement - No. 2576  
Third Revision, Gallup Participating  
Area

U. S. Geological Survey  
P. O. Box 6721  
Roswell, New Mexico

Attention Mr. John A. Anderson

Gentlemen:

Reference is made to our Application for Approval of the Third Revision of the Participating Area for the Gallup Pool for the Carson Unit Area, which was forwarded to you for approval by the New Mexico State Land Board.

In preparing our Fourth Revision of Exhibit "B" of our Application, we noted three typographical errors appearing in the Third Revision. Therefore, we are forwarding herewith seven copies of a corrected Exhibit "B" and request that you substitute them for the Exhibit "B" which accompanied the Application for the Third Revision.

Very truly yours,

Original Signed By  
H. V. GOWNIE

For F. W. Nantker  
Division Land Manager

cc - Mr. Ted Bilberry, Supervisor (with enclosure)

Enclosures

cc - Mr. Ted Bilberry, Supervisor (with enclosure)  
State Land Office  
P. O. Box 1251  
Santa Fe, New Mexico

Mr. A. L. Porter, Secretary-Director (with enclosure)  
New Mexico Oil Conservation Commission  
P. O. Box 871  
Santa Fe, New Mexico

THIS COPY FOR

# EXHIBIT "B"

## Schedule of Lands Entitled to Participate

|                              |   |
|------------------------------|---|
| Lease:                       | SF-078061   |
| Lessee:                      | Shell Oil Company   |
| Participating Acreage:       | 100.00  |
| Percentage of Participation: | 20.386%   |
| Description:                 | T. 25 N., R. 11 W., N.M.P.M.<br>Section 17: $\frac{1}{2}$ SW $\frac{1}{4}$ , SW $\frac{1}{4}$<br>Section 20: NW $\frac{1}{4}$   |
| Lease:                       | SF-078062   |
| Lessee:                      | Shell Oil Company   |
| Participating Acreage:       | 160.00  |
| Percentage of Participation: | 8.1545%   |
| Description:                 | T. 25 N., R. 11 W., N.M.P.M.<br>Section 18: NE $\frac{1}{4}$  |
| Lease:                       | SF-078063   |
| Lessee:                      | Shell Oil Company   |
| Participating Acreage:       | 321.03  |
| Percentage of Participation: | 16.3616%  |
| Description:                 | T. 25 N., R. 11 W., N.M.P.M.<br>Section 19: Lots 1 and 2, E $\frac{1}{2}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$                   |
| Lease:                       | SF-078064   |
| Lessee:                      | Shell Oil Company   |
| Participating Acreage:       | 680.00  |
| Percentage of Participation: | 34.6567%  |
| Description:                 | T. 25 N., R. 12 W., N.M.P.M.<br>Section 13: SE $\frac{1}{4}$ , SW $\frac{1}{4}$ NW $\frac{1}{4}$<br>Section 24: E $\frac{1}{2}$ |
| Lease:                       | Indian Allotted Lands 14-20-603-1440  |
| Lessee:                      | Skelly Oil Company  |
| Participating Acreage:       | 80.00   |
| Percentage of Participation: | 4.0773%   |
| Description:                 | T. 25 N., R. 11 W., N.M.P.M.<br>Section 20: W $\frac{1}{2}$ NE $\frac{1}{4}$  |
| Lease:                       | Indian Allotted Lands 14-20-603-1285  |
| Lessee:                      | Phillips Petroleum Company  |
| Participating Acreage:       | 161.07  |
| Percentage of Participation: | 8.2091%   |
| Description:                 | T. 25 N., R. 11 W., N.M.P.M.<br>Section 18: Lots 3 and 4, E $\frac{1}{2}$ SW $\frac{1}{4}$                                      |

# **Schedule of Lands Entitled to Participate**

2

|                              |   |
|------------------------------|---|
| Lease:                       | SP-078067   |
| Lessee:                      | Shell Oil Company   |
| Participating Acreage:       | 160.00  |
| Percentage of Participation: | 8.1545%   |
| Description:                 | T. 25 N., R. 12 W., N.H.P.M.<br>Section 14: NE <sub>1</sub> |

|                           |         |           |
|---------------------------|---------|-----------|
| Summary:                  | Acrea   | Percent   |
| Total Federal Lands:      | 1781.03 | 87.7137%  |
| Total Indian Lands:       | 241.07  | 12.2863%  |
| Total Productive Acreage: | 1952.10 | 100.0000% |

MAIL OFFICE OCC

1957 SEP 29 AM 3:08

September 27, 1957

In reply refer to:  
Unit Division

Shell Oil Co.  
1901 Main Avenue  
Durango, Colorado

Re: Carson Unit Agreement -  
Third Revision,  
Gallup Participating Area

Attention: Mr. F. W. Nantker

Gentlemen:

This is to advise you that the Commissioner of Public Lands has today approved the above designated participating area, subject to like approval by the United States Geological Survey.

Eight copies of this revision were handed to us by the New Mexico Oil Conservation Commission, and under carbon copy of this letter we are transmitting seven copies to Mr. Anderson, Director of the United States Geological Survey, Roswell, New Mexico.

Very truly yours,

MURRAY E. MORGAN  
Commissioner of Public Lands

By: Ted Bilberry, Supervisor  
Oil and Gas Department

MEM:MMR/m  
Enc.

cc: USGS-Roswell  
OCC-Santa Fe

File  
1075

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

September 25, 1957

Shell Oil Company  
1901 Main Avenue  
Durango, Colorado

Attention: Mr. F. W. Nantker

Re: Carson Unit Area  
Third Revision, Gallup  
Participating Area

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Third Revision of the Gallup Participating Area, Carson Unit Area, subject to like approval by the United States Geological Survey and by the Commissioner of Public Lands of the State of New Mexico.

By carbon copy of this letter, we are transmitting eight copies of said revision to the Land Commissioner for his consideration thereof and transmittal to the Geological Survey, Roswell, New Mexico.

Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director

DSN:omg

cc: U. S. Geological Survey, Roswell, N. Mex.  
Commissioner of Public Lands, Santa Fe, N. Mex.



OFFICE SHELL OIL COMPANY

1901 Main Avenue  
Durango, Colorado

September 24, 1957

Subject: Carson Area  
Carson Unit Agreement - No. 2576

New Mexico Oil Conservation Commission  
125 Mabry Hall  
Capitol Building  
Santa Fe, New Mexico

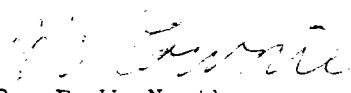
Attention Mr. D. S. Nutter

Gentlemen:

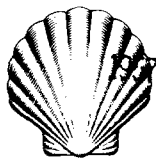
We refer to our application for the Second Revision of the Gallup Participating Area under the Carson Unit Agreement which was approved by your office on July 23, 1957.

Enclosed herewith for your information and files is a copy of said Application showing the approval of the United States Geological Survey on September 13, 1957, effective May 1, 1957.

Very truly yours,

  
For F. W. Nantker  
Division Land Manager

Enclosure



MAIN OFFICE OCC

# SHELL OIL COMPANY

SEP 10 AM 8:02

1901 Main Avenue  
Durango, Colorado

September 10, 1957

Subject: Carson Area  
Carson Unit Agreement

New Mexico Oil Conservation Commission  
125 Mabry Hall  
Capitol Building  
Santa Fe, New Mexico

Attention Mr. D. S. Nutter

Gentlemen:

Reference is made to our letter of August 19, 1957 forwarding to you nine copies of our application for approval of the proposed Third Revision of Participating Area for the Carson Unit Area. We also refer to your conversation with our Mr. F. W. Nantker wherein you requested that we supply you with a land map of the Participating Area of the Carson Unit Area and a "Schedule of Lands Entitled to Participate" for attachment to our application as Exhibits "A" and "B" respectively.

Enclosed herewith please find nine copies of the "Schedule of Lands Entitled to Participate" and nine copies of the land map for attachment to our application.

Thank you very much for your courtesy and cooperation in this matter.

Very truly yours,

For F. W. Nantker  
Division Land Manager

Enclosures

Geological and Engineering Report  
Proposed Third Revision of Participating Area  
Gallup (Upper Cretaceous) Pool-Carson Unit  
San Juan County, New Mexico

1957 AUG 24 AM 8:23

The following data are submitted in support of the application for approval of the Third Revision of the Participating Area in the Carson Unit area. This revision adds 200 acres to the Second Revised Participating Area and increases the area of participation to 1962.10 acres. Enclosure 1 illustrates the existing and proposed participating areas.

Well Data

Carson Unit 41-14 was completed in the Gallup (Upper Cretaceous) Pool of the Carson Unit.

Location: 660' S and 660' W of the NE Corner, Section 14,  
T. 25 N., R. 12 W., N.M.P.M.

Total Depth: 5090'

Perforated Intervals: 4872-97', 4902-08', 4948-61', 4965-75'

Feet Microlog Pay: 9'

Feet Pay Without Separation: 6'

Initial Production: Flowed 108 B/D oil with 0.1% cut on a  
42/64" choke after recovering 1,162  
barrels load and frac oil.

Completion Date: July 30, 1957

Current Status: Production Testing

Carson Unit 41-14 was fracture treated employing a radioactive tracer as part of a completion method study. The tracer log indicated only the lowermost Gallup sands - those having a very low order of permeability - were fractured. The upper Gallup sand ("G<sub>c</sub>" sand) is believed to have contributed to the production, but at a lesser rate than would be possible if the sand had been effectively treated. We believe Carson Unit 41-14 to be a paying well in its present condition and further stimulation will undoubtedly increase the potential.

Twelve Carson Unit wells have been drilled or are drilling but have not been completed. Completions on five of these wells are expected in August. The status of these wells is tabulated on the following page.



| <u>Well</u> | <u>Location</u>                                     | <u>TD</u> | <u>Status</u>   |
|-------------|---|-----------|---|
| Unit 3      | 530' E & 1818' N of SW Corner, Sec. 7, T25N, R11W   | 5004'     | Installing pumping unit                                 |
| Unit 41-13  | 660' S & 660' W of NE Corner Sec. 13, T25N, R12W    | 5050'     | Pumping unit installed, testing                         |
| Unit 23-20  | 1977' N & 1766' E of SW Corner, Sec. 20, T25N, R11W | 5079'     | Pumping unit installed, testing                         |
| Unit 32-14  | 1980' S & 1980' W of NE Corner, Sec. 14, T25N, R12W | 5073'     | Fracture treating                                       |
| Unit 41-23  | 660' S & 660' W of NE Corner, Sec. 23, T25N, R12W   | 5072'     | Fracture treated in poor pay only, awaiting completion. |
| Unit 34-13  | 660' N & 1976' W of SE Corner, Sec. 13, T25N, R12W  | 5104'     | Fracture treated in poor pay only, awaiting completion  |
| Unit 34-17  | 660' N & 1942' W of SE Corner, Sec. 17, T25N, R11W  | 5032'     | Not perforated  |
| Unit 43-17  | 1880' N & 660' W of SE Corner, Sec. 17, T25N, R11W  | 5100'     | Not perforated  |
| Unit 12-20  | 1980' S & 660' E of NW Corner, Sec. 20, T25N, R11W  | 5065'     | Not perforated  |
| Unit 21-19  | 660' S & 1980' E of NW Corner, Sec. 19, T25N, R11W  | 5026'     | Not perforated  |
| Unit 34-19  | 660' N & 1980' W of SE Corner, Sec. 19, T25N, R11W  | 5000'     | Fracture treating                                       |
| Unit 14-17  | 660' N & 660' E of SW Corner, Sec. 17, T25N, R11W   | -         | Drilling  |

### Geology and Reservoir

In previous proposals for participating areas (see Geological and Engineering Reports supporting the proposals of Initial Participating Area and First Revision of the Participating Area, January 18, 1957 and April 26, 1957 respectively) data were presented suggesting fair continuity of sand development along the northwest-southeast pay trend, and poor continuity in the transverse direction. Also, better sand development was to be found toward the center

of the trend. Subsequent well data has generally supported these observations and substantiates our feeling that the participating area can be extended along trend with confidence but that transverse extensions are less predictable.

### Conclusion

It is recommended that the participating area of the Carson Unit be extended to include the lands in the vicinity of Carson Unit 41-14, these lands having been reasonably proven productive by the completion of the paying well. Accordingly, we recommend that an area of 200 acres be added to the participating area outlined in our proposal for the Second Revision of the Participating Area. The lands in the participating area, thus revised, should be described as follows:

#### Township 25 North, Range 11 West, NMPM

Section 17: W/2 SE/4, SW/4  
Section 18: Lots 3 and 4, E/2 SW/4, SE/4  
Section 19: Lots 1 and 2, E/2 NW/4, NE/4  
Section 20: NW/4, W/2 NE/4

#### Township 25 North, Range 12 West, NMPM

Section 13: SW/4 NW/4, S/2  
Section 14: NE/4  
Section 24: E/2

It is further recommended that the effective date of the above described Third Revision to the Participating Area be July 1, 1957, the first of the month in which Carson Unit 41-14 was completed.

SEP 26 1957

Approved.....19.....

*A. L. Carter, Jr.*  
.....  
Secretary-Director

NEW MEXICO OIL CONSERVATION COMMISSION

SHELL OIL COMPANY

*R. S. MacAlister, Jr.*  
.....  
R. S. MacAlister, Jr.

Division Exploitation Engineer  
Farmington Division

### Attachments

Net microlog pay - Gallup sandstone  
G<sub>c</sub> sand pay  
G<sub>d</sub> sand pay

HILLIPS PETROLEUM COMPANY

|              |                            |  |
|--------------|----------------------------|--|
| FULL RATE    | IMMEDIATE DELIVERY         |  |
| DAY LETTER   | 2 TO 4 HOURS DELIVERY      |  |
| NIGHT LETTER | DELIVERY 8:00 NEXT MORNING |  |

TELEGRAM

INDICATE CHARGE

Production

12000

1957 SEP 5

INDICATE TYPE OF SERVICE. OTHERWISE FULL RATE WILL APPLY

M 8:12

September 4, 1957

SHELL OIL COMPANY  
1901 MAIN AVENUE  
DALLAS, TEXAS

ATTENTION P. O. BOX 6721

RE YOUR LETTER 8-24-57 DALLAS TEX. PHILLIPS PETROLEUM COMPANY DALLAS TEX 8-9-57

ADVISE IN YOUR LETTER THAT YOU WERE IN DALLAS TEX. AND WOULD BE DUE 8-12-57.

RE. YOUR LETTER DATED 8-12-57 DALLAS TEX. AND YOUR LETTER DATED 8-19-57. FOR YOUR

INFORMATION THE COPY TO THE PHILLIPS PETROLEUM COMPANY DALLAS TEX 8-9-57 DALLAS TEX.

PHILLIPS PETROLEUM COMPANY APPROVES PLAN OF DEVELOPMENT DATED 80 APR. 1956 AND

RECORDS AND DOCUMENTS. REQUEST YOU SUBMIT ORIGINAL COPY OF PRODUCTION AND AHEAD

FOR PHILLIPS PETROLEUM COMPANY DALLAS TEX. AND YOUR LETTER DATED 8-9-57 DALLAS TEX.

PHILLIPS PETROLEUM COMPANY.

L. S. PETERSON

PHILLIPS PETROLEUM COMPANY

cc:

United States Geological Survey  
Post Office Box 6721  
New Mexico, New Mexico

United States Geological Survey  
P. O. Box 965  
Washington, New Mexico

New Mexico Oil Conservation Commission  
125 Mabry Hall, Capitol Bldg.  
Santa Fe, New Mexico

Mr. Murray Morgan  
Commissioner of Public Lands  
125 Mabry Hall, Capitol Building  
Santa Fe, New Mexico

ILLEGIBLE



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
P. O. Box 6721  
Roswell, New Mexico

1957 AUG 23 10 37

August 23, 1957

Shell Oil Company  
1901 Main Avenue  
Durango, Colorado

*File*

Gentlemen:

By a third supplemental plan of development dated July 8, 1957, for the Carson unit area, San Juan County, New Mexico, No. 14-08-001-3485, you proposed the drilling of 53 wells to the Gallup sand at locations plotted on an accompanying map. Said plan of development was approved by the Oil Conservation Commission and the Commissioner of Public Lands, State of New Mexico, on July 23, 1957. By letter of July 24, 1957, to this office, you requested that we defer action looking to approval of the plan pending your further negotiations with certain working interest owners in the Carson unit area.

Your interim plan of development dated August 19, 1957, for the Carson unit area, proposing the immediate drilling of nine wells included in the third supplemental plan of development, has been approved by this office on this date. In view of the hearing set for September 18 before the Oil Conservation Commission on the application of Sunray Mid-Continent Oil Company for 80-acre spacing for Gallup sand wells in the Bisti field, we suggest that if practicable you schedule the drilling of unit wells Nos. 11-14, 24-14, and 31-23 to be commenced after the other six wells in the program have been drilled.

One approved copy of the interim plan of development is enclosed.

Very truly yours,

(Orig. Sgd.) JOHN A. ANDERSON

JOHN A. ANDERSON

Regional Oil and Gas Supervisor

Copy to: Washington w/copy of plan  
Farmington w/copy of plan  
Oil Conservation Commission, Santa Fe



# SHELL OIL COMPANY MAIN OFFICE 000

1901 Main Avenue  
Durango, Colorado

1957 AUG 15 AM 8:17

August 22, 1957

Subject: Carson Area  
Carson Unit Agreement #2576  
San Juan County, New Mexico

El Paso Natural Gas Company  
Post Office Box 1492  
El Paso, Texas

Humble Oil & Refining Company  
Box 2180  
Houston, Texas

Phillips Petroleum Company  
Bartlesville, Oklahoma

Skelly Oil Company  
Post Office Box 1650  
Tulsa Oklahoma

Gentlemen:

As Unit Operator of the Carson Unit, we have submitted several plans of development, the last approved plan being that of June 14, 1957, embracing some eight wells in addition to the 17 previously drilled. This plan was forwarded to the U.S.G.S. under cover of our letter of July 8, 1957, and has been approved by you. On July 10, 1957, we submitted a final plan for the primary development of the Carson Unit which embraced 53 additional wells within the Carson Unit Area as shown on the map attached to that plan. Some of you had reservation regarding that plan, so to continue active development of the field we sent you on August 9, 1957, the following wire:

"Request your approval drill 80 acre locations included in our most recent plan of development involving 53 wells within Carson Unit at Bisti the 80 acre locations would be center of NE and SW quarters of each quarter section our views unchanged regarding 40 acre wells but for sake of maintaining continuous operations pending settlement spacing controversy suggest above course of action appreciate early wire reply so that we may clear with USGS."

Favorable replies were received from Skelly, El Paso and Humble; but to date we have received no response from Phillips. Meanwhile as we are close to concluding the drilling of the last approved plan and pending approval of our 53 well program, we found it necessary to submit an interim

El Paso Natural Gas Company  
Humble Oil & Refining Company  
Phillips Petroleum Company  
Skelly Oil Company

2

plan to continue efficient and economical operations on the Unit. This interim plan of development addressed to the Supervisor (See attachment) would involve drilling on Shell only dry hole risk acreage and is outside any existing or proposed participating area. Approval of this plan by the Supervisor will permit continued economic operation in the Bisti Field with the two strings of tools which are now employed by Shell.

Pending final agreement as to our 53 well plan of development which we feel necessary to develop the Unit, we shall keep you advised.

Very truly yours,



F. W. Nantker  
Division Land Manager

Attachment

cc - United States Geological Survey  
Post Office Box 6721  
Roswell, New Mexico

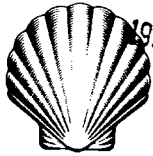
United States Geological Survey  
Post Office Box 965  
Farmington, New Mexico

New Mexico Oil Conservation Commission ← THIS COPY FOR  
125 Mabry Hall, Capitol Building  
Santa Fe, New Mexico

Mr. Murray Morgan  
Commissioner of Public Lands  
125 Mabry Hall, Capitol Building  
Santa Fe, New Mexico

Phillips Petroleum Company  
301 Korber Building  
Albuquerque, New Mexico

Phillips Petroleum Company  
Denver Club Building  
Denver, Colorado



MAIN OFFICE OGC

SHELL OIL COMPANY

1957 AUG 22 AM

8:32

DESERT NEWS BUILDING  
3 RICHARDS STREET  
SALT LAKE CITY 1, UTAH

DAvis 2-04/1  
TELEPHONE 2-2-0474

August 20, 1957

Subject: Carson Area  
Carson Unit Agreement  
No. 2576

*file*

New Mexico Oil Conservation Commission  
125 Mabry Hall  
Capitol Building  
Santa Fe, New Mexico

Gentlemen:

We refer to our application for the first revision of the Gallup participating area, under the Carson Unit Agreement, which was approved by your office on June 20, 1957.

Enclosed herewith, for your information and files, is a copy of said application showing the approval of the United States Geological Survey on August 5, 1957, effective March 1, 1957.

Yours very truly,

*J. E. Mohr*

For J. E. Mohr  
Division Land Manager

Enclosure

MAIN OFFICE OCC

1957 AUG 22 8:28



## SHELL OIL COMPANY

1901 Main Avenue  
Durango, Colorado

August 19, 1957

Subject: Carson Area  
Carson Unit  
Proposed Third Revision  
of Participating Area

*ret. to J. H. Nutter*

New Mexico Oil Conservation Commission  
125 Mabry Hall  
Capitol Building  
Santa Fe, New Mexico

Attention Mr. D. S. Nutter

Gentlemen:

We enclose for your consideration and approval, nine copies of our proposed Third Revision of Participating Area to our Carson Unit, together with nine copies of map of G D sand, G C sand, and nine copies of map of Isopach of Net Microlog Pay - Gallup sandstone. Also enclosed are nine copies of Geological and Engineering Report. We request that you approve this proposed Revision and also obtain the approval of the Commissioner of Public Lands. We would then appreciate your forwarding seven copies to the U. S. Geological Survey in Roswell, New Mexico, retaining one copy for your files and one copy for the Commissioner of Public Lands.

If you have any questions regarding these papers, please do not hesitate to call us.

Very truly yours,

*R. L. Freeman*

For F. W. Nantker  
Division Land Manager

- cc - Commissioner of Public Lands  
- U. S. Geological Survey  
Roswell, New Mexico  
- U. S. Geological Survey  
Farmington, New Mexico





## SHELL OIL COMPANY

1901 Main Avenue  
Durango, Colorado

August 19, 1957

Subject: (Carson Area)  
Carson Unit Agreement #2576  
San Juan County, New Mexico

United States Geological Survey  
Post Office Box 6721  
Roswell, New Mexico

Gentlemen:

Reference is had to the letter of July 10, 1957 from our Salt Lake City Division proposing a drilling program of 53 additional wells within the Carson Unit Area and to the enclosure attached thereto showing the proposed location of said wells. Reference here also to our letter of July 24, 1957 wherein we requested that you withhold action on the plan of development submitted with our letter of July 10, 1957.

Since dispatching the last referred to letter, we have continued to develop the unit according to the last approved plan of development (that of June 14, 1957 forwarded to you under our letter of July 8), but find that we must have an interim plan to continue development of the field. As you are probably aware, we are operating in the Bisti Area with two strings of tools. Thus, we feel it necessary to drill the following wells: Carson Units Nos. 14-11, 11-14, 12-14, 14-14, 24-14, 34-14, 21-23, 31-23 and 12-24 which are on wholly owned Shell land and outside the participating area or any proposed participating area.

As you know, the State of New Mexico Oil Conservation Commission and the Commissioner of Public Lands have approved the plan submitted with the letter of July 10 and we would appreciate your early approval of this interim plan.

We, as Unit Operator, will ask approval of a final plan for the primary development of the Carson Unit upon arriving at an agreement with the other working interest owners.

Very truly yours,



F. W. Nantker  
Division Land Manager

cc - United States Geological Survey  
Farmington, New Mexico

New Mexico Oil Conservation Commission  
125 Mabry Hall, Capitol Building  
Santa Fe, New Mexico

Mr. Murray Morgan  
Commissioner of Public Lands  
125 Mabry Hall, Capitol Building  
Santa Fe, New Mexico

Phillips Petroleum Company  
301 Korber Building  
Albuquerque, New Mexico

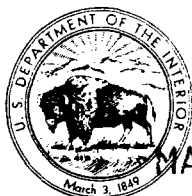
Phillips Petroleum Company  
Denver Club Building  
Denver, Colorado

Phillips Petroleum Company  
Bartlesville, Oklahoma

Skelly Oil Company  
Post Office Box 1650  
Tulsa, Oklahoma

Humble Oil & Refining Company  
Box 2180  
Houston, Texas

El Paso Natural Gas Company  
Post Office Box 1492  
El Paso, Texas



MAIN OFFICE OCC

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

1957 JUL 23 AM 8:30 P. O. Box 6721  
Roswell, New Mexico

July 25, 1957

Shell Oil Company  
Deseret News Building  
32 Richards Street  
Salt Lake City 1, Utah

Attention: Mr. J. E. Mohr

Gentlemen:

Your second Supplemental Plan of Development for 1957 dated June 14, 1957, for the Carson Unit Area, San Juan County, New Mexico, has been approved on this date. Evidence of approval by the New Mexico Oil Conservation Commission and the Commissioner of Public Lands, given on July 23, 1957, and July 11, 1957, respectively, is on file in this office.

Four approved copies of the plan are returned herewith.

Very truly yours,

(Orig. Sgd.) JOHN A. ANDERSON

JOHN A. ANDERSON  
Regional Oil and Gas Supervisor

Copy to: Washington w/copy of plan  
Farmington w/copy of plan  
Oil Conservation Commission, Santa Fe (letter only)

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

July 23, 1957

Shell Oil Company  
Deseret News Building  
33 Richards Street  
Salt Lake City 1, Utah

Attention: Mr. J. E. Mohr

Re: Carson Unit Area  
San Juan County, N.M.  
Second Revision, Gallup  
Participating Area

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved your application for approval of the Second Revision of the Participating Area for the Gallup Sand, Carson Unit Area, subject to like approval by the United States Geological Survey and by the Commissioner of Public Lands of the State of New Mexico.

Seven approved copies of the application, already approved by the Commissioner of Public Lands, are being forwarded today to the Supervisor, United States Geological Survey, Roswell, New Mexico, for his consideration.

Very truly yours,

A. L. PORTER, Jr.,  
Secretary-Director

By: DANIEL S. NUTTER,  
Petroleum Engineer

DSN/ir

cc: U. S. G. S. - Roswell, New Mexico  
Commissioner of Public Lands, Santa Fe, N. M.

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

1085

July 23, 1957

Shell Oil Company  
Deseret News Building  
33 Richards Street  
Salt Lake City 1, Utah

Attention: Mr. J. E. Mohr

Re: Carson Unit Area  
San Juan County, New Mexico  
Second and Third Supplemental  
Plans of Development

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Second and Third Supplemental Plans of Development for the Carson Unit Area, subject to like approval by the United States Geological Survey and by the Commissioner of Public Lands of the State of New Mexico.

One approved copy of each of the plans, dated June 14, 1957, and July 8, 1957, respectively is being forwarded to the Supervisor, United States Geological Survey, Roswell, New Mexico.

Very truly yours,

A. L. PORTER, Jr.,  
Secretary-Director

By: DANIEL S. NUTTER,  
Petroleum Engineer

DSN/ir

cc: U. S. Geological Survey - Roswell, New Mexico  
Commissioner of Public Lands, Santa Fe, New Mexico

C  
O  
P  
Y

MAIN OFFICE OCC

1957 JUL 25 AM 8:21

July 23, 1957

In reply refer to:  
Unit Division

Shell Oil Co.  
Desert News Building  
33 Richards Street  
Salt Lake City 1, Utah

Re: Carson Unit Area  
Plan of Development

Attention: Mr. J. E. Mohr

Gentlemen:

This is to advise you that the Commissioner of Public Lands has this date approved your Plan of Development for the Carson Unit Area dated July 8, 1957. This approval is subject to like approval by the United States Geological Survey and the New Mexico Oil Conservation Commission.

One approved copy of this plan is being forwarded to the Supervisor of the United States Geological Survey, Roswell, New Mexico.

Very truly yours,

MURRAY E. MORGAN  
Commissioner of Public Lands

By: Ted Bilberry, Supervisor  
Oil and Gas Department

MEM:MMR/m

cc: USGS-Roswell (enclosure)  
OCC-Santa Fe

X

# El Paso Natural Gas Company

El Paso, Texas

July 22, 1957

Mr. John A. Anderson  
Regional Supervisor  
United States Geological Survey  
P. O. Box 6721  
Roswell, New Mexico

Mr. Pete Porter  
New Mexico Oil Conservation Commission  
125 Mabry Hall, Capitol Building  
Santa Fe, New Mexico

Mr. Murray Morgan  
Commissioner of Public Lands  
125 Mabry Hall, Capitol Building  
Santa Fe, New Mexico

Re: Proposed Third Supplemental  
Plan of Development  
Carson Unit Agreement  
San Juan County, New Mexico

Dear Sir:

We have just received copy of the Third Supplemental Plan of Development for the above unit which has been filed for approval in your office and with the State of New Mexico Oil Conservation Commission and the Commissioner of Public Lands.

We are a working interest owner in the Carson Unit, although we do not have any acreage within the present participating area, nor are any of the proposed wells located on our lands. However, we would like to advise you that we are unable to approve the proposed Plan of Development submitted to you by Shell Oil Company for the reason that it contemplates 40 acre spacing and development. As you are no doubt well aware, the Bisti Pool has, so far, been developed on an 80 acre spacing pattern by voluntary agreement of the operators. We feel that 40 acre spacing at the present time is premature and may not be in the best interest of conservation.

COPY

Mr. John A. Anderson  
Regional Supervisor  
United States Geological Survey

-2-

July 22, 1957

As you are well aware, Sunray-Midcontinent, as operator, is commencing a pilot program for a miscible phase secondary recovery project in the Gallup Formation in the vicinity of the Carson Unit. We would like, at least, to await the information to be gained by this pilot test secondary recovery program before agreeing to go to the 40 acre spacing in the Bisti Pool. As you can see, the approval and development of Shell's proposed Plan of Development will, in effect, mean 40 acre spacing for the entire Bisti Pool.

Copies of this letter are being sent to Shell Oil Company, as operator, and the other working interest owners in the Carson Unit.

Yours very truly,

EL PASO NATURAL GAS COMPANY

By: R. L. Hamblin  
R. L. Hamblin, Manager  
Lease Department

RLH:jf

cc: Shell Oil Company  
Deseret News Building  
33 Richards Street  
Salt Lake City 1, Utah

Skelly Oil Company  
P. O. Box 1650  
Tulsa, Oklahoma

Humble Oil & Refining Company  
Box 2180  
Houston, Texas

Phillips Petroleum Company  
Attention: Mr. E. J. Lewis  
Bartlesville, Oklahoma



X

# PHILLIPS PETROLEUM COMPANY

BARTLESVILLE, OKLAHOMA

July 19, 1957

PRODUCTION DEPARTMENT  
L. E. FITZJARRALD  
MANAGER

EARL GRIFFIN  
GENERAL SUPERINTENDENT  
JACK TARNER  
TECHNICAL ADVISER TO MGR  
H. S. KELLY  
CHIEF ENGINEER

In re: Carson Unit - San Juan County, New Mexico - Third Supplemental Plan of Development

Mr. J. E. Mohr  
Shell Oil Company  
33 Richards Street  
Salt Lake City, Utah

Dear Sir:

Reference is made to your letter to Mr. John A. Anderson dated July 10, 1957, in regard to the subject unit.

The third paragraph of your letter states in part "- - - Phillips has, however, in later conversations, indicated to our Mr. MacAlister that they will go along with this final Plan of Development - - -". Inasmuch as Phillips Petroleum Company remains opposed to development of any part of the Carson Unit and Bisti Area on 40 acre spacing at this time, we consider it necessary to correct the implied approval of 40 acre spacing contained in the above quoted statement. Phillips has not and will not now approve a Plan of Development including the drilling of 40 acre spaced wells. Approval of individual 40 acre well proposals will be made only to avoid suffering the 200% penalty which may be imposed under the terms of the Unit Operating Agreement for non-joinder in the drilling of wells located within a participating area.

Phillips' letter to you dated April 15, 1957, outlined our objections to 40 acre spacing and the Plan of Development submitted with your letter of April 2, 1957. No new information has been developed which would justify a change in Phillips' position. The statements contained in the above letter are quoted herein for the information of those receiving copies of this letter:

"Although it is recognized that a technical justification for 40 acre spacing in certain areas of the Unit may exist, on the assumption of a reasonable rate of oil production, Phillips would be reluctant to approve 40 acre wells in the absence of an immediate market outlet. Deferral of income from the intensive development program you propose may reduce the rate of return on investment to an unattractive level.

"The operators in the Bisti-Gallup Pool, including your company

Mr. J. E. Mohr

In re: Carson Unit - San Juan County, New Mexico - Third Supplemental  
Plan of Development

July 19, 1957

Page 2

are at the present time attempting to negotiate an agreement to cooperatively test a new type of recovery mechanism; that is, LPG-high pressure gas injection. The recovery anticipated from this method, which may range up to 95 percent of the oil in place, and the cost of LPG injection are directly related to the stage of depletion of the reservoir at the time of initial injection. A substantial decrease in recovery efficiency and an increase in injection costs occur when the reservoir pressure falls below the bubble-point pressure of the reservoir oil. Development of certain areas in the field on 40 acre spacing will permit a more rapid depletion of the primary reserve while sacrificing as much as 50 percent of the secondary recovery reserve for the entire field.

"The money which you propose to spend in development on 40 acre spacing, a density which is not considered necessary to deplete the reservoir, may be spent to greater advantage and at a higher rate of return on investment on the early development of a pressure maintenance program. This would satisfy your needs for high uniform deliverability to the projected pipeline and the objective of all operators in the Unit and in the Bisti area to obtain the highest recovery at a maximum return on investment."

It would appear from your continuing with plans to develop a part of the Bisti Area and Carson Unit Area on 40 acre spacing that you anticipate some advantage to be accorded the 40 acre wells over the 80 acre wells in the allocations received from the pipeline purchaser since it is recognized that the difference in ultimate recovery which may be expected from the two spacing programs is of insignificant economic importance. It follows that you would anticipate producing from two 40 acre wells at a greater total rate than the capacity of one 80 acre well or there would be no economic advantage to drilling on the closer spacing. The rate of depletion of the field reserves and bottom hole pressure decline which would result from capacity production in the field would surely obviate the possibility of successful application of a field wide LPG-high pressure gas injection program. Commencement of the pilot injection program mentioned above now awaits only final approval by the interested regulatory bodies. It is imperative to the conservation of reserves of oil and gas contained in the Bisti Field that no drilling or producing program be adopted which will reduce the ultimate economic recovery from the field.

Phillips Petroleum Company again requests that you reconsider your proposed development program and defer development on 40 acre

Mr. J. E. Mohr

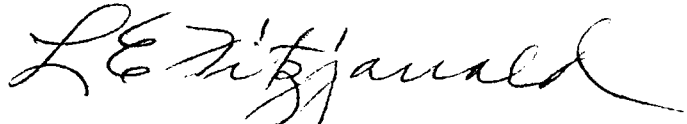
In re: Carson Unit - San Juan County, New Mexico - Third Supplemental  
Plan of Development

July 19, 1957

Page 3

spacing until it is clear as to how the best interests of all parties  
will be served.

Yours very truly,

A handwritten signature in cursive script, reading "L E Fitzjarrald". The signature is written in dark ink and is positioned above the printed name.

L. E. Fitzjarrald

LEF:EFL:HD

cc: United States Geological Survey

Post Office Box 6721

Roswell, New Mexico

Attn: Mr. John A. Anderson, Supervisor

New Mexico Oil Conservation Commission

125 Mabry Hall, Capitol Building

Santa Fe, New Mexico

Mr. Murray Morgan

Commissioner of Public Lands

125 Mabry Hall, Capitol Building

Santa Fe, New Mexico

All Bisti Field Operators

July 11, 1957

In reply refer to:  
Unit Division

United States Geological Survey  
P. O. Box 6721  
Roswell, New Mexico

Attention: Mr. John A. Anderson, Supervisor

Shell Oil Company  
Desert News Building  
33 Richards Street  
Salt Lake City 1, Utah

*File*

Re: Carson Unit - San Juan County, N. Mex.

Gentlemen:

We are enclosing one copy of the Second Supplemental Plan of Development for the Carson Unit, which was approved by the Commissioner of Public Lands July 11, 1957.

This is being forwarded directly to you, as requested by Shell Oil Company's letter of July 8.

Very truly yours,

MURRAY E. MORGAN  
Commissioner of Public Lands

By: Ted Bliberry, Supervisor  
Oil and Gas Department

MEM:MMR/m  
enc: 1

cc: OCC-Santa Fe



## SHELL OIL COMPANY

DESERET NEWS BUILDING  
33 RICHARDS STREET  
SALT LAKE CITY 1, UTAH

DAVIS 2-0471

TELEPHONE ~~2-0471~~

July 10, 1957

Subject: Carson Area  
Carson Unit Agreement #2576  
San Juan County, New Mexico

New Mexico Oil Conservation Commission  
125 Mabry Hall  
Capitol Building  
Santa Fe, New Mexico

Attention Mr. D. S. Nutter

Gentlemen:

We enclose a carbon copy of a letter to the U. S. Geological Survey in Roswell, New Mexico, whereby we requested their approval of our Third Supplemental Plan of Development to our Carson Unit. We also enclose two copies of said Supplemental Plan of Development for your use.

We submitted the Initial Plan of Development for the Carson Unit Area and the Initial Participating Area for the Carson Unit in nine copies to the New Mexico Oil Conservation Commission by letter dated April 8, 1957, requesting that they and the Commissioner of Public Lands approve the Initial Plan and Participating Area and send seven copies to the U. S. Geological Survey with State approval. Since then the U. S. Geological Survey has advised us that they wish to have these plans submitted to the New Mexico Oil Conservation Commission, to the Commissioner of Public Lands and to themselves concurrently. On April 19, 1957 we submitted the First Supplemental Plan of Development providing for eight additional wells and on July 8, 1957 our Salt Lake City Division office submitted the Second Supplemental Plan of Development which also provides for eight additional wells.

Therefore, if this Supplemental Plan is satisfactory to you, would you kindly forward one copy which shows your approval to the U. S. Geological Survey, P. O. Box 6721, Roswell, New Mexico.

Yours very truly,

  
J. E. Mohr  
Division Land Manager

Enclosures



## SHELL OIL COMPANY

DESERET NEWS BUILDING  
33 RICHARDS STREET  
SALT LAKE CITY 1, UTAH

DAvis 2-0471  
TELEPHONE ~~2-0471~~

July 10, 1957

Subject: Carson Area  
Carson Unit Agreement #2576  
San Juan County, New Mexico

United States Geological Survey  
Post Office Box 6721  
Roswell, New Mexico

Attention Mr. John A. Anderson, Supervisor

Gentlemen:

As we have verbally advised you, we plan to drill fifty-three additional wells within the Carson Unit area and enclose seven copies of Third Supplemental Plan of Development for 1957 for your approval. By carbon copy of this letter we are submitting two copies of this Supplemental Plan to the New Mexico Oil Conservation Commission and two copies to the Commissioner of Public Lands of the State of New Mexico for their approval. We will request the respective State agencies to send an approved copy of the Plan to you.

We submitted the Initial Plan of Development for the Carson Unit Area and the Initial Participating Area for the Carson Unit in nine copies to the New Mexico Oil Conservation Commission by letter dated April 8, 1957, requesting that they and the Commissioner of Public Lands approve the Initial Plan and Participating Area and send seven copies to you with their approval. Since then you have advised us that you wish to have these plans submitted to the New Mexico Oil Conservation Commission, to the Commissioner of Public Lands and to yourself concurrently. On April 19, 1957 we submitted the First Supplemental Plan of Development providing for eight additional wells and on July 8, 1957 our Salt Lake City Division office submitted the Second Supplemental Plan of Development which also provides for eight additional wells.

Concurrently, in this connection, we are submitting copies of this Third Supplemental Plan of Development to Phillips, Skelly, El Paso and Humble requesting their concurrence in the Plan. We have heretofore discussed this

matter with these companies and since the so-called Bisti pay has not as yet approached the El Paso and Humble land within the unit, they have indicated that as long as we remain within the present confines of the field they will go along with Shell and Shell's Plan of Development. Phillips and Skelly have acreage within the initial and expanded participating areas and accordingly we have discussed this matter at length with them. Skelly has advised that they are quite agreeable to this program and only Phillips had some reservations regarding our Plan of Development. Phillips has, however, in later conversations, indicated to our Mr. MacAlister that they will go along with this final Plan of Development of the initial phase of development of the Carson Unit field.

If you have any questions regarding these papers do not hesitate to contact any of our people and we will be pleased to discuss this matter with you either by telephone or in person.

Yours very truly,

  
J. E. Mohr  
Division Land Manager

Enclosures

cc - United States Geological Survey  
Farmington, New Mexico

New Mexico Oil Conservation Commission  
125 Mabry Hall, Capitol Building  
Santa Fe, New Mexico  
(with enclosures)

Mr. Murray Morgan  
Commissioner of Public Lands  
125 Mabry Hall, Capitol Building  
Santa Fe, New Mexico  
(with enclosures)

Phillips Petroleum Company  
301 Korber Building  
Albuquerque, New Mexico

Phillips Petroleum Company  
Denver Club Building  
Denver, Colorado

Phillips Petroleum Company  
Bartlesville, Oklahoma

Skelly Oil Company  
Post Office Box 1650  
Tulsa, Oklahoma

Humble Oil & Refining Company  
Box 2180  
Houston, Texas

El Paso Natural Gas Company  
Post Office Box 1492  
El Paso, Texas

July 9, 1957

In reply refer to:  
Unit Division

Shell Oil Co.  
1901 Main Ave.  
Durango, Colo.

*File*

Re: ~~Carson Unit~~  
Second Revision of  
the Participating Area

Attention: Mr. F. W. Nantker  
District Land Agent

Gentlemen:

We are enclosing one copy of the Second Revision of the Participating Area for the Carson Unit Agreement, which was approved by the Commissioner of Public Lands July 9, 1957.

This proposed revision is to become effective May 1, 1957, subject to like approval by the United States Geological Survey.

Very truly yours,

MURRAY E. MORGAN  
Commissioner of Public Lands

By: Ted Bilberry, Supervisor  
Oil and Gas Department

MEM:MMR/m

enc: 1

cc: USGS-Roswell  
OCC-Santa Fe





MAIN OFFICE 006

# SHELL OIL COMPANY

2:00 PM 8:02

1901 Main Avenue  
Durango, Colorado

October 22, 1957

Subject: Carson Area  
Carson Unit Agreement  
Third Supplemental Plan  
of Development

New Mexico Oil Conservation Commission ← THIS COPY FOR  
125 Mabry Hall  
Capitol Building  
Santa Fe, New Mexico

Mr. Murray E. Morgan  
Commissioner of Public Lands  
125 Mabry Hall  
Capitol Building  
Santa Fe, New Mexico

Gentlemen:

We refer to our Third Supplemental Plan of Development which was dated July 8, 1957, and forwarded to you under cover of our letter of July 10, 1957, by our Salt Lake City Division office. The Oil Conservation Commission approved this plan on July 23 and the Commissioner of Public Lands on July 24, 1957.

We enclose herewith a copy of the U. S. Geological Survey approval of this plan together with a copy of their covering letter.

Very truly yours,

F. W. Nantker  
Division Land Manager

Enclosures



## SHELL OIL COMPANY

DESERET NEWS BUILDING  
33 RICHARDS STREET  
SALT LAKE CITY 1, UTAH

DAVIS 2-0471  
TELEPHONE 2-2047

July 8, 1957

Subject: Carson Area  
Carson Unit Agreement  
San Juan County, New Mexico

New Mexico Oil Conservation Commission  
125 Mabry Hall, Capitol Building  
Santa Fe, New Mexico

Attention Mr. D. S. Nutter

Mr. Murray Morgan,  
Commissioner of Public Lands  
Post Office Box 791  
Santa Fe, New Mexico

Gentlemen:

We enclose herewith two copies of Second Supplemental Plan of Development for the Carson Unit, together with a copy of letter by which this Plan was forwarded to the United States Geological Survey in Roswell, New Mexico. After approving the enclosed Plan, will you kindly forward one copy, showing your approval, to the United States Geological Survey, Post Office Box 6721, Roswell, New Mexico.

If you have any questions regarding the enclosed Plan of Development do not hesitate to call on us.

Yours very truly,

*Jack D. Jones*  
For J. E. Mohr  
Division Land Manager

Enclosures



# SHELL OIL COMPANY

108 North Behrend Avenue  
Farmington, New Mexico

July 8, 1957

Re: Carson Unit Area  
San Juan County, New Mexico  
Plan of Development

United States Geological Survey  
Post Office Box 6721  
Roswell, New Mexico

Attention Mr. John A. Anderson

Gentlemen:

We submit for your consideration the following plan of development to cover the drilling of 53 Gallup sand wells on the Carson Unit, San Juan County, New Mexico (see map). This program should conclude the primary development of the Unit, but further drilling may be necessary depending on the information gained from drilling and producing these wells. At the present time sixteen wells have been drilled on the Unit for Gallup production, and one well is currently being drilled. A recapitulation of the development completed thus far follows:

| <u>Well</u>       | <u>Total Depth</u> | <u>Date Completed</u> | <u>Initial Production</u> | <u>Status</u> |
|-------------------|--------------------|-----------------------|---------------------------|---------------|
| Carson Unit 1     | 5983'              | 9-27-56               | Flowed 806 B/D            | Shut in       |
| Carson Unit 2     | 5000'              | 3-6-57                | Pumped 21 B/D             | Pumping       |
| Carson Unit 3     | 5004'              |                       | Awaiting pumping unit     |               |
| Carson Unit 4     | 5043'              | 11-15-56              | Flowed 657 B/D            | Shut in       |
| Carson Unit 33-24 | 5030'              | 3-9-57                | Flowed 470 B/D            | Shut in       |
| Carson Unit 43-13 | 5054'              | 2-23-57               | Flowed 219 B/D            | Shut in       |
| Carson Unit 41-13 | 5050'              |                       | Awaiting pumping unit     |               |
| Carson Unit 23-17 | 5075'              | 3-14-57               | Flowed 312 B/D            | Shut in       |
| Carson Unit 23-20 | 5075'              |                       | Awaiting pumping unit     |               |
| Carson Unit 34-13 | 5100'              |                       | Awaiting completion       |               |
| Carson Unit 14-13 | 5040'              | 5-12-57               | Flowed 741 B/D            | Shut in       |
| Carson Unit 32-14 | 5073'              |                       | Awaiting completion       |               |
| Carson Unit 41-23 | 5072'              |                       | Awaiting completion       |               |
| Carson Unit 41-14 | 5090'              |                       | Awaiting completion       |               |
| Carson Unit 34-17 | 5032'              |                       | Awaiting completion       |               |
| Carson Unit 12-20 | 5065'              |                       | Awaiting completion       |               |
| Carson Unit 21-19 |                    |                       |                           | Drilling      |

A supplemental plan of development for the drilling of eight wells was submitted for approval on June 14, 1957. The plan of development we now submit is in addition to the eight well plan and will begin about the time of drilling of the third well of the plan.

Development

We expect to use two strings of tools drilling continuously on the Unit with a third string operating periodically in order to conclude this drilling program by early 1958 at which time the Four Corners Pipeline Company's crude line to the Pacific Coast should be nearing completion. The locations to be drilled by the three rigs and the tentative order in which they are expected to be drilled are shown on the attached drilling schedule.

We intend to develop areas of undefined sand development on 80 acres per well spacing while exploring for the commercial limits of the Unit. Forty acre spaced wells will be drilled on those portions of the field where the sand development is known and it is believed reasonable profits can be realized.

Field Facilities

The field facilities proposed for the Carson Unit basically will consist of (1) approximately six test stations strategically located throughout the Unit, (2) an oil gathering system, and (3) a central plant. The test stations will obtain individual well test information by the use of oil and gas meters and an oil sampler. Crude from the test stations will be transported to the central plant by means of the oil gathering system. The central plant will serve as a royalty metering point for all participating wells in the Unit and well contain surge tankage, automatic custody transfer equipment and dehydration facilities (if required). The non-participating wells in the Unit will be handled at the test stations along with the participating wells so that the test meter reading will constitute a royalty gauge for the non-participating wells.

Inasmuch as our field facilities proposal does not conform to New Mexico Oil Conservation Commission Rule 309, we have obtained a formal hearing for the purpose of requesting an exception to Rule 309. At this hearing, which will be held in Santa Fe on July 17, 1957, the proposed facilities will be explained in detail. We understand that your Mr. John Anderson will be present at the hearing, prior to which he will have received a formal description of the proposed field facilities. After the meeting we will request your written approval of the facilities plan provided the State of New Mexico and Mr. Anderson concur with the testimony presented at the meeting.

Your early approval of this plan of development is respectfully

requested.

Approved.....JUL 23 1957.....19.....

*A. L. Porter Jr.*

Secretary-Director

NEW MEXICO OIL CONSERVATION COMMISSION

*Daniel S. Nutter*

Attachments

DANIEL S. NUTTER  
Petroleum Engineer

Very truly yours,

*R. R. Robison*

R. R. Robison  
Division Production Manager



# SHELL OIL COMPANY

DESERET NEWS BUILDING  
33 RICHARDS STREET  
SALT LAKE CITY 1, UTAH

DAvis 2-0471  
TELEPHONE ~~██████~~

July 8, 1957

Subject: Carson Area  
Carson Unit Agreement  
San Juan County, New Mexico

United States Geological Survey  
Post Office Box 6721  
Roswell, New Mexico

Attention Mr. John A. Anderson, Supervisor

Gentlemen:

We enclose herewith, for your consideration and approval, seven copies of proposed Second Supplemental Plan of Development for the Carson Unit Agreement. This Plan, providing for the drilling of an additional eight wells in the unit area, is being submitted for your approval at this time in order to maintain continuous operations. We are presently preparing, and will submit in the near future, a complete Plan of Development for the first phase of drilling in the Carson Unit. On April 8, 1957 we submitted the Initial Plan of Development and the First Supplemental Plan of Development was submitted for your approval.

Kindly be advised that by carbon copy of this letter we are submitting two copies of the enclosed Plan of Development to the New Mexico Oil Conservation Commission and two copies to the New Mexico Commissioner of Public Lands for their approval, and we hereby request that they forward one approved copy to the United States Geological Survey, Roswell, New Mexico.

If you have any questions concerning the enclosed Plan of Development kindly so advise.

Yours very truly,

For J. E. Mohr *sent*  
Division Land Manager

Enclosures

cc - New Mexico Oil Conservation Commission ← THIS COPY FOR ←  
125 Mabry Hall, Capitol Building  
Santa Fe, New Mexico  
Attention Mr. D. S. Nutter (with 2 encls.)  
Mr. Murray Morgan,  
Commissioner of Public Lands  
Post Office Box 791  
Santa Fe, New Mexico (with 2 encls.)



# SHELL OIL COMPANY

DESERET NEWS BUILDING  
33 RICHARDS STREET  
SALT LAKE CITY 1, UTAH

DAVIS 2-0471

TELEPHONE ~~2-0471~~

*file*

July 8, 1957

Subject: Carson Unit  
San Juan County, New Mexico  
No. 14-08-001-3485  
(First Revision of the  
Participating Area)

Mr. R. F. Rood, Manager  
Northwest Region  
Land and Geological Department  
Phillips Petroleum Company  
Bartlesville, Oklahoma

Dear Mr. Rood:

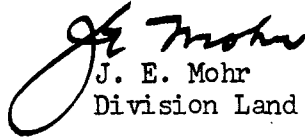
Reference is made to your letter of July 1 and to our telephone conversation of July 3, 1957 concerning the First Revision of the Participating Area for the Gallup (Upper Cretaceous) pool in the Carson Unit.

We wish to thank you for bringing your objections to the inclusion of the  $S\frac{1}{2}SE\frac{1}{4}$  Section 24, T. 25 N., R. 12 W., N.M.P.M. in the First Revision of the Participating Area to our attention and to assure you of our wishes to co-operate in handling all unit matters. As we explained to you on the phone, Shell had originally contemplated that the First Revision of the Participating Area would include only the  $N\frac{1}{2}$  of the  $SE\frac{1}{4}$  of Section 24, but at the advice and request of the U. S. Geological Survey the Participating Area was revised to include the entire quarter section.


We also wish to thank you for advising us verbally that the Phillips Petroleum Company will approve the inclusion of the  $SW\frac{1}{4}$  of

Section 13, T. 25 N., R. 12 W. in the Second Revision of the Carson  
Unit Participating Area.

Yours very truly,

  
J. E. Mohr  
Division Land Manager

cc - Supervisor,  
U. S. Geological Survey  
Roswell, New Mexico (2)

New Mexico Oil Conservation Commission ← THIS COPY FOR   
125 Mabry Hall  
Capitol Building  
Santa Fe, New Mexico

Commissioner of Public Lands  
125 Mabry Hall  
Capitol Building  
Santa Fe, New Mexico

Humble Oil Company  
Box 2180  
Houston, Texas

Skelly Oil Company  
Post Office Box 1650  
Tulsa, Oklahoma

El Paso Natural Gas Company  
Post Office Box 1492  
El Paso, Texas

Phillips Petroleum Company  
Denver Club Building  
Denver, Colorado  
Attention: C. W. Corbett  
and M. W. Freeman

July 3, 1957

In reply refer to:  
Unit Division

United States Geological Survey  
P. O. Box 6721  
Roswell, New Mexico

*File*

Re: Carson Unit Agreement

Attention: Mr. John A. Anderson  
Supervisor

Gentlemen:

We are enclosing one copy of the first Revision of the Participating Area for the Carson Unit, which was approved by the Commissioner of Public Lands June 18, 1957.

Mr. Nantker of Shell Oil Co., in his letter of June 26, requested that we furnish this approved copy.

Very truly yours,

MURRAY E. MORGAN  
Commissioner of Public Lands

By: Ted Bilberry, Supervisor  
Oil and Gas Department

MEM:MMR/m  
enc: 1

cc: Shell Oil Co.  
1901 Main Ave.-Durango, Colo.  
OCC-Santa Fe





SHELL OIL COMPANY

1901 Main Avenue  
Durango, Colorado

July 2, 1957

Subject: Carson Area  
Carson Unit  
Second Revision of the  
Participating Area

U. S. Geological Survey  
P. O. Box 6721  
Roswell, New Mexico

Attention Mr. John A. Anderson  
Supervisor

Gentlemen:

We refer to our letter of June 14, 1957 wherein we forwarded our First Revision of the Initial Participating Area for the Carson Unit. We enclose herewith, for your approval, our Second Revision of the Participating Area in seven copies, together with a Geological and Engineering Report in three copies. By carbon copy of this letter we are submitting one copy of our Second Revision and Geological and Engineering Report to the New Mexico Oil Conservation Commission and one copy to the Commissioner of Public Lands of the State of New Mexico for their approval.

If you have any questions regarding these papers, please do not hesitate to call us.

Very truly yours,

Original Signed by  
E. W. Nantker

E. W. Nantker  
District Land Agent

Enclosures

- cc - U. S. Geological Survey (without enclosure)  
Farmington, New Mexico  
- New Mexico Oil Conservation Commission (with enclosure) ✓  
- Mr. Murray E. Morgan (with enclosure)  
Commissioner of Public Lands



## SHELL OIL COMPANY

1901 Main Avenue  
Durango, Colorado

July 2, 1957

Subject: Carson Area  
Carson Unit  
Second Revision of the  
Participating Area

*Approved 7/29/57*

New Mexico Oil Conservation Commission  
125 Mabry Hall  
Capitol Building  
Santa Fe, New Mexico

Attention Mr. D. S. Nutter

Gentlemen:

We enclose a carbon copy of a letter to the U. S. Geological Survey in Roswell, New Mexico whereby we requested their approval of our Second Revision of the Participating Area to our Carson Unit. We also enclose two copies of our Second Revision and one copy of our Geological and Engineering Report for your use. We respectfully request that you favorably consider our application and advise Mr. Anderson of the U. S. Geological Survey, and us of your approval. We would appreciate your returning to us one copy of our Second Revision so that we may photostat it and forward it to Mr. Anderson.

If you have any questions regarding these papers, please do not hesitate to call us.

Very truly yours,

*F. W. Nantker*

F. W. Nantker  
District Land Agent

Enclosures

cc - U. S. Geological Survey  
Roswell, New Mexico

# PHILLIPS PETROLEUM COMPANY

BARTLESVILLE, OKLAHOMA

July 1, 1957

Re: Carson Unit  
San Juan County  
New Mexico  
No. 14-08-001-3435

Shell Oil Company  
33 Richards Street  
Salt Lake City 1, Utah

Attention: Mr. J. L. Mohr

Gentlemen:

We have your letter of June 12, 1957, being application for approval of the first revision of the participating area for the Gallup (Upper Triassic) Pool in this unit and, by this means, are advising you we cannot agree to the inclusion in that first revision of the S/4 SE/4 Section 24-25-12N . . . .

The basis for this disagreement is reflected by your own maps, the first being an isopach of the "CC" sand, Bisti Field (being enclosure 2), and the other an isopach of the "CB" sand, Bisti Field (being enclosure 3), which show this 60 acres predominantly outside the zero sand thickness line.

Saying this another way, the inclusion of the S/4 Section 24-25-12N is apparently based on completion of two wells -- Shell No. 1 Unit in the NE/4 SW/4 Section 25-25N-12E which had 0' of microlog porosity in the "A" (your "CC") and "B" (your "CB") zones of the Gallup, and your No. 33-24 in the NW/4 SE/4 Section 24-25N-12E, which had 3' of microlog porosity in the "A" zone and 7' of microlog porosity in the "B" zone. The "B" zone, or your "CB" sand, in general, is very erratic, very limited in areal extent, and very unpredictable. In contrast, the "A" zone is predictable, produces throughout most of Bisti, the Carson Unit and the South Bisti areas and is the main producing zone in this general area.

Shell Oil Company

-2-

July 1, 1957

By the very erratic nature of the "B" zone, the south 80 acres of this SE/4 Section 24 (or the S/2 SE/4 Section 24-25N-12W) should be excluded and notice is hereby given you of our objection to the inclusion of this particular 80-acre tract.

Yours truly,

*[Signature]*  
R. L. Hood

R. L. Hood, Manager  
Northwest Region  
Land & Geological Department

RFR:lh

cc - Director  
United States Geological Survey  
Washington, D. C.

Supervisor  
United States Geological Survey  
Roswell, New Mexico

New Mexico Oil Conservation Commission COCC FOR  
125 Mabry Hall, Capitol Building  
Santa Fe, New Mexico

Commissioner of Public Lands  
125 Mabry Hall, Capitol Building  
Santa Fe, New Mexico

Humble Oil Company  
Box 2180  
Houston, Texas

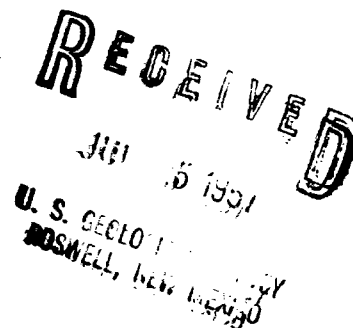
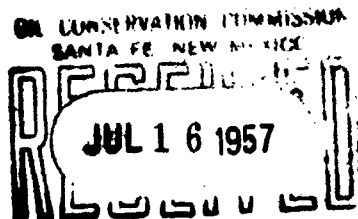
Skelly Oil Company  
P. O. Box 1650  
Tulsa, Oklahoma

El Paso Natural Gas Company  
P. O. Box 1492  
El Paso, Texas

Messrs. J. A. Corbett  
J. C. Freeman

SHELL OIL COMPANY

June 27, 1957



Subject: Application for Approval of  
the Second Revision of the  
Participating Area for the  
Gallup (Upper Cretaceous)  
Pool - Carson Unit, San Juan  
County, New Mexico  
No. 14-08-001-3485

Director,  
United States Geological Survey (7)  
Washington, D.C.  
through  
Supervisor,  
United States Geological Survey  
Roswell, New Mexico

New Mexico Oil Conservation Commission  
125 Mabry Hall, Capitol Building  
Santa Fe, New Mexico

Commissioner of Public Lands  
125 Mabry Hall, Capitol Building  
Santa Fe, New Mexico

Dear Sir:

Shell Oil Company, as unit operator under that certain unit agreement for the Carson Unit Area, approved by the Acting Commissioner of Indian Affairs and by the Acting Director of the United States Geological Survey effective November 15, 1956, pursuant to the provisions of Section 11 thereof requiring the revision of a participating area to include additional land when the same shall have been reasonably proved to be productive of unitized substances in paying quantities, respectfully submits, for the approval of said Director, the selection of the following described lands to be added to the participating area to constitute the second revision of the participating area for the Gallup (Upper Cretaceous) Pool in the Carson Unit Area, to wit:

Township 25 North, Range 12 West, N.M.P.M.

Section 13: SW-1/4

containing 160.00 acres, more or less

In support of this application, applicant attaches hereto and hereby makes a part hereof the following:

1. A map, marked Exhibit "A", showing thereon the boundary of the present participating area and the proposed second revision thereof.

2. A schedule, marked Exhibit "B", showing the various lands entitled to participate in the unitized substances produced from the Gallup (Upper Cretaceous) formation, with the percentage of participation of each lease or tract indicated thereon.

Applicant has submitted separately, in triplicate, its geological and engineering report, with enclosures, supporting its suggested selection of the proposed participating area.

This proposed revision of the participating area is predicated upon the knowledge and information first obtained upon the completion of unit well No. 14-13. Carson Unit 14-13 is located in the SW-1/4 SW-1/4 of Section 13, T. 25 N., R. 12 W., N.M.P.M., and was completed on May 12, 1957, in the Gallup (Upper Cretaceous) intervals 4876-4891', 4943-4948', 4954-4966', and 4972-4986' with an initial production rate of 741 B/D oil. We consider Carson Unit 14-13 as a paying well under the Unit Agreement.

Wherefore, applicant respectfully requests that the said Director approve the hereinabove selection of lands to be added to the participating area to constitute the second revision of the participating area to be effective May 1, 1957.

Yours very truly,

*J. E. Mohr*  
J. E. Mohr  
Division Land Manager

JUL 23 1957

Approved.....19.....

*A. L. Porter, Jr.*  
.....  
Secretary-Director

NEW MEXICO OIL CONSERVATION COMMISSION

by: *Daniel S. Nutter*

DANIEL S. NUTTER  
Petroleum Engineer

