



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR

MAIN OFFICE OCC GEOLOGICAL SURVEY

P. O. Box 6721
Roswell, New Mexico

1956 MAR 13 PM 1:15

March 12, 1956

Mr. J. Glenn Turner
17th Floor Mercantile Bank Building
Dallas 1, Texas

Dear Sir:

The plan of development dated March 12, 1956, for the Huerfano unit area, New Mexico, I-See. No. 943 has been approved on this date, subject to like approval by the appropriate State officials.

The three copies of the plan which you submitted are sufficient for distribution to the appropriate Government offices. If you wish approved copies for your files, additional copies of the plan should be furnished.

Very truly yours,

JOHN A. ANDERSON
Regional Oil & Gas Supervisor

Copy to: Cons.Div., Wash (w/1 copy of plan)
Farmington (w/1 copy of plan)
NMOCC, Santa Fe (letter only) ✓

J. GLENN TURNER

OIL AND GAS-INVESTMENTS
17TH FLOOR MERCANTILE BANK BUILDING
DALLAS 1, TEXAS

January 24, 1956

file

Mr. William Macey, Secretary
Oil Conservation Commission
State of New Mexico
Santa Fe, New Mexico

Dear Mr. Macey:

Please find enclosed herewith for your records copy of Ratification and Joinder of the (Huerfanito Unit) as executed by Olen F. Featherstone, et ux, and Ernest A. Hanson, et ux, as consented to by each of the working interest owners under tracts 4, 5, 6, 7 and 10 and 4, 5, 6, 8 and 10.

With best wishes, I am

Yours very truly,

William G. Webb
William G. Webb *bk*

WGW:bk
Encl.

RATIFICATION AND JOINDER OF UNIT AGREEMENT

In consideration of the execution of the Unit Agreement for the Development and Operation of the Huerfano Unit Area located within the County of San Juan, State of New Mexico, in form approved on behalf of the Secretary of the Interior, the undersigned owners of lands or leases, or interests therein or royalties presently held or which may arise under existing option agreements, or other interests in production covered by said Unit Agreement hereby severally, each to the extent of his or her particular ownership or interest, as may appear, consent to the inclusion of said lands within the Unit Area therein defined, ratify, approve and adopt the terms of said Unit Agreement and any modifications thereof approved by the Secretary of the Interior or his duly authorized representative as applicable to said several lands and interests, agree that the term of any lease given by the undersigned or under which the undersigned claims an interest herein is extended and modified to the extent necessary to make the same conform to the terms of said Unit Agreement, agree that the drilling, development and producing requirements of all leases and other contracts in which their several rights and interests are created or defined shall be deemed fully performed by performance of the provisions of said Unit Agreement, and agree that payment for or delivery of (which ever may be required under prior agreements) oil and gas duly made at contract rates applied to the production allocated under said Unit Agreement to the particular lands to which such rights or interests do or shall apply, regardless of actual production therefrom, shall constitute full performance of all such obligations to the undersigned existing under such leases or other contracts.

This Ratification and Joinder of Unit Agreement may be executed in any number of counterparts with the same force and effect as if all parties had signed the same document and shall be binding upon all those who execute a counterpart hereof, regardless of whether or not it is executed by all other parties owning or claiming an interest in the lands affected hereby, and when so executed shall be binding upon the undersigned, his or her assigns or successors in interest.

ADDRESS

SIGNATURE

315 Midland Savings Building
Denver 2, Colorado

Olen F. Featherstone
Olen F. Featherstone
Martha Featherstone
Martha Featherstone, his wife

Date: June 9, 1955

ATTEST:

Louis R. Green
Assistant Secretary

**ACCEPTED -- TRACT No. 4
SKELLY OIL COMPANY**

[Signature]
Vice-President

APPROVED AND CONSENTED TO: MAGNOLIA PETROLEUM COMPANY

ATTEST:
By *[Signature]*
Assistant Secretary

By *[Signature]*
Vice-President

Date: July 13, 1955

Approved and Consented to:

Tracts 4, 5, 6, 7, 10

APPROVED	
Legal	<input checked="" type="checkbox"/>
Tax	<input type="checkbox"/>
Title R	<input type="checkbox"/>
Engr.	<input type="checkbox"/>
Gas	<input type="checkbox"/>
Land	<input checked="" type="checkbox"/>
Prod.	<input type="checkbox"/>

William G. Webb, Working Interest Owner
APPROVED AND CONSENTED TO:
EL PASO NATURAL GAS COMPANY
By *[Signature]*
Vice President
WORKING INTEREST OWNER

APPROVED AND CONSENTED TO:
J. Glenn Turner, Working Interest Owner and Unit Operator

APPROVED AND CONSENTED TO:
SAN JACINTO PETROLEUM CORP.
By *[Signature]*
President
WORKING INTEREST OWNER

Attached to and made a part of, for all purposes, that certain Ratification and Joinder of the Huerfanito Unit Area, located within the County of San Juan, State of New Mexico, as executed by Olen F. Featherstone and his wife, Martha Featherstone, dated June 9, 1955:

APPROVED AND CONSENTED TO:

MONTIN-BENSON CORPORATION

Date: 12-20-55

By Carl A Benson
Vice President

Working Interest Owner

APPROVED AND CONSENTED TO:

BENSON-MONTIN-GREER DRILLING CORP.

Date: 12-17-55

By [Signature]
Vice President

Working Interest Owner

APPROVED AND CONSENTED TO:

Albert R. Greer

Date: 12-17-55

Working Interest Owner

APPROVED AND CONSENTED TO:

[Signature]
K. E. McAfee

Date: 7-19-55

Working Interest Owner

APPROVED AND CONSENTED TO:

[Signature]
O. J. Lilly

Date: 12-17-55

Working Interest Owner

APPROVED AND CONSENTED TO:

[Signature]
C. F. Stringer

Date: _____

Working Interest Owner

APPROVED AND CONSENTED TO:
UNITED STATES NATURAL GAS COMPANY

By [Signature]
Vice President

Date: January 3, 1956

Working Interest Owner

RATIFICATION AND JOINDER OF UNIT AGREEMENT

In consideration of the execution of the Unit Agreement for the Development and Operation of the Huerfanito Unit Area located within the County of San Juan, State of New Mexico, in form approved on behalf of the Secretary of the Interior, the undersigned owners of lands or leases, or interests therein or royalties presently held or which may arise under existing option agreements, or other interests in production covered by said Unit Agreement hereby severally, each to the extent of his or her particular ownership or interest, as may appear, consent to the inclusion of said lands within the Unit Area therein defined, ratify, approve and adopt the terms of said Unit Agreement and any modifications thereof approved by the Secretary of the Interior or his duly authorized representative as applicable to said several lands and interests, agree that the term of any lease given by the undersigned or under which the undersigned claims an interest herein is extended and modified to the extent necessary to make the same conform to the terms of said Unit Agreement, agree that the drilling, development and producing requirements of all leases and other contracts in which their several rights and interests are created or defined shall be deemed fully performed by performance of the provisions of said Unit Agreement, and agree that payment for or delivery of (which ever may be required under prior agreements) oil and gas duly made at contract rates applied to the production allocated under said Unit Agreement to the particular lands to which such rights or interests do or shall apply, regardless of actual production therefrom, shall constitute full performance of all such obligations to the undersigned existing under such leases or other contracts.

This Ratification and Joinder of Unit Agreement may be executed in any number of counterparts with the same force and effect as if all parties had signed the same document and shall be binding upon all those who execute a counterpart hereof, regardless of whether or not it is executed by all other parties owning or claiming an interest in the lands affected hereby, and when so executed shall be binding upon the undersigned, his or her assigns or successors in interest.

ADDRESS

SIGNATURE

P. O. Box 852

Roswell, New Mexico

Date: June 1, 1955

Ernest A. Hanson

Ernest A. Hanson

Beulah Irene Hanson

Beulah Irene Hanson, his wife

ACCEPTED -- TRACT 4

ATTEST:

Louis B. Graham

Assistant Secretary

SKELLY OIL COMPANY

By: *[Signature]*

Vice-President

APPROVED AND CONSENTED TO:

ATTEST:

By: *[Signature]*

Date: July 13, 1955

MAGNOLIA PETROLEUM COMPANY

By: *[Signature]*

Vice-President

APPROVED	
Legal	<input checked="" type="checkbox"/>
Tax	<input type="checkbox"/>
Title R	<input type="checkbox"/>
Engr.	<input type="checkbox"/>
Gas	<input type="checkbox"/>
Land	<input checked="" type="checkbox"/>
Prod.	<input type="checkbox"/>

APPROVED AND CONSENTED TO:

William C. Webb, Working Interest Owner

APPROVED AND CONSENTED TO:

EL PASO NATURAL GAS COMPANY

By: *[Signature]*

Vice President

WORKING INTEREST OWNER

APPROVED AND CONSENTED TO:

SAN JACINTO PETROLEUM CORP.

By: *[Signature]*

President

WORKING INTEREST OWNER

APPROVED AND CONSENTED TO:

[Signature]

J. Glenn Turner, Working Interest Owner and Unit Operator

STATE OF **OKLAHOMA**)
) SS.
COUNTY OF **TULSA**)

On this 24th day of June, 1955, before me appeared A. L. CASHMAN, to me personally known, who, being by me duly sworn, did say that he is the **Vice-** President of **SKELLY OIL COMPANY** and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its board of directors, and said A. L. CASHMAN acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

My commission expires:

Hazel W. Grady
Notary Public in and for
Tulsa County, Oklahoma

Hazel W. Grady
Notary Public in and for
Tulsa County,
State of **Oklahoma**

STATE OF **NEW MEXICO**)
) SS.
COUNTY OF **CHAVES**)

On this 7th day of June, 1955, before me appeared Ernest A. Hanson and Evelyn Irene Hanson, his wife, to me known to be the persons described in and who executed the foregoing instrument, and acknowledged to me that they executed the same as their free act and deed.

My commission expires:

Emerson B. Fodhunter
My Commission Expires
February 28, 1958

Emerson B. Fodhunter
Notary Public in and for
Chaves County,
State of **New Mexico**

STATE OF Tex.)
) SS.
COUNTY OF King)

On this 14th day of June, 1955, before me personally appeared Emory Taylor, a single person, to me known to be the person described in and who executed the foregoing instrument, and acknowledged to me that he executed the same as his free act and deed.

My commission expires:

Emory Taylor
Notary Public in and for
King County,
State of Texas

Attached to and made a part of, for all purposes, that certain Ratification and Joinder of the Huerfanito Unit Area, located within the County of San Juan, State of New Mexico, as executed by Ernest A. Hanson and his wife, Beulah Irene Hanson, dated June 7, 1955:

APPROVED AND CONSENTED TO:

MONTIN-BENSON CORPORATION

Date: 12-20-55

By Earl A Benson
Vice President

Working Interest Owner

APPROVED AND CONSENTED TO:

BENSON-MONTIN-GREER DRILLING CORP.

Date: 12-17-55

By Albert R Greer
Vice President

Working Interest Owner

APPROVED AND CONSENTED TO:

Albert R Greer
Albert R. Greer

Date: 12-17-55

Working Interest Owner

APPROVED AND CONSENTED TO:

K. E. McAfee
K. E. McAfee

Date: 7-19-55

Working Interest Owner

APPROVED AND CONSENTED TO:

O. J. Lilly
O. J. Lilly

Date: 12-17-55

Working Interest Owner

APPROVED AND CONSENTED TO:

C. F. Stringer
C. F. Stringer

Date: _____

Working Interest Owner

APPROVED AND CONSENTED TO:
THREE STATES NATURAL GAS COMPANY

By Al Bowman
Vice President

Date: January 3, 1956

Working Interest Owner

December 27, 1955

Director
United States Geological Survey
Department of the Interior
Washington 25, D. C.

file

Mr. E. S. Walker
Commissioner of Public Lands
State of New Mexico
Santa Fe, New Mexico

Mr. William Macey, Secretary
Oil Conservation Commission
State of New Mexico
Santa Fe, New Mexico

dm

Re: (Huerfanito Unit Area,)
I-Sec. No. 943,
San Juan County, New Mexico
Participating Area B
Pictured Cliffs Formation
Effective as of Date of First Production

Gentlemen:

This will advise that Participating Area B for the captioned Unit Area pursuant to my application of May 25, 1955 has now been approved as follows:

APPROVED: December 22, 1955

Subject to like approval by the appropriate State officials, the initial Pictured Cliffs "B" participating area of 1440 acres under the Huerfanito unit agreement, New Mexico, is hereby approved effective as of November 24, 1954, the date of completion of the first of the nine wells on which the application is predicated, as provided is sec. 11 of the unit agreement.

S/ Thomas B. Nolan
Acting Director, Geological Survey

El Paso Natural Gas Company
Post Office Box 1492
El Paso, Texas
Attention: Mr. R. L. Hamblin

Skelly Oil Company
Skelly Building
Tulsa 2, Oklahoma
Attention: Mr. T. F. Thompson

Magnolia Petroleum Company
P. O. Box 900
Dallas 21, Texas
Attention: Mr. H. H. Beeson

Mr. J. W. McConnell, Jr.
Administrator of the Estate of
W. O. McConnell, deceased
P. O. Box 1041
Farmington, New Mexico

Benson-Montin-Greer Drilling Corporation
1501 Republic Building
Oklahoma City, Oklahoma

Montin-Benson Corporation
1501 Republic Building
Oklahoma City, Oklahoma

Mr. Albert R. Greer
315½ West Main
Farmington, New Mexico

Mr. K. E. McAfee
1316 Liberty Bank Building
Oklahoma City 2, Oklahoma

Mr. C. F. Stringer
301 East Hopi
Farmington, New Mexico

Mr. O. J. Lilly
Post Office Box 185
Farmington, New Mexico

TURNER, WHITE, ATWOOD, McLANE AND FRANCIS

ATTORNEYS AND COUNSELORS AT LAW

J. GLENN TURNER
W. D. WHITE
FELIX ATWOOD
ALFRED E. McLANE
EDWARD L. FRANCIS
JAMES B. FRANCIS
JULIAN M. MEER
TREVOR REES-JONES
HARRY S. WELCH
THOS. R. HARTNETT III
H. L. HITCHINS, JR.
WILLIAM L. McINERNEY
WILLIAM G. WEBB
LEWIS CHANDLER
SNOWDEN M. LEFTWICH, JR.
WILLIAM C. HERNDON, JR.
THOMAS B. McELROY

17TH FLOOR MERCANTILE BANK BUILDING

DALLAS 1, TEXAS

December 21, 1955

286

file

Mr. W. B. Macey, Secretary-Director
New Mexico Oil Conservation Commission
Post Office Box 871
Santa Fe, New Mexico

Re: (Huerfanito Unit Area)
Participating Area B
Pictured Cliffs Formation
San Juan County, New Mexico

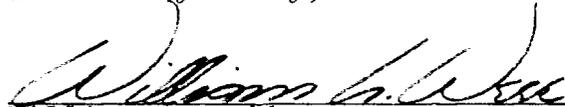
Dear Bill:

This will acknowledge receipt of your letter dated December 19, 1955, transmitting one approved copy of Mr. Turner's Application for Designation of the captioned Participating Area.

We wish to take this opportunity to thank you for your help in connection with this matter, and as soon as we have secured like approvals from the U. S. Geological Survey and the New Mexico Commissioner of Public Lands we will furnish you with a conformed copy of the completely approved Application.

With best wishes, I am

Yours very truly,


William G. Webb

WGW:mch

December 21, 1955

file

Mr. J. Glenn Turner
17th Floor, Mercantile Bldg.
Dallas, Texas

Re: (Huerfanito Unit Area)
Participating Area B
Pictured Cliffs Formation
San Juan County, N. Mex.

Dear Sir:

We are enclosing one copy of the Participating Area B for the Pictured Cliffs formation in the above designated Unit Area. Application setting forth said Participating Area was submitted by you May 25, 1955, and was approved by the Commissioner of Public Lands December 21, 1955.

This approval is granted subject to like approval by the United States Geological Survey and by the Oil Conservation Commission.

Very truly yours,

E. S. WALKER
Commissioner of Public Lands

MMR/m
enc: 1

cc: OCC-Santa Fe
USGS-Roswell

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

286

December 19, 1955

Mr. J. Glenn Turner
17th Floor, Mercantile Bldg.
Dallas, Texas

Re: **Huerfanito Unit Area**
Participating Area B
Pictured Cliffs Formation
San Juan County, N. M.

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved Participating Area B for the Pictured Cliffs formation in the subject unit area, as set forth in your application dated May 25, 1955.

This approval is granted 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 the application is returned herewith.

Very truly yours,

W. B. Macey
Secretary-Director

WBM:jh

cc: U. S. Geological Survey, Roswell
N. M. State Land Office, Santa Fe

C
O
P
Y



SKELLY OIL COMPANY

TULSA 2, OKLAHOMA

December 9, 1955

GENERAL ATTORNEY:

HAWLEY C. KERR

ASS'T. GENERAL ATTORNEY:

GAYLE M. PICKENS

ATTORNEYS:

JAMES E. HARA

HORACE S. SMITH

FRED D. LEONARD

GEORGE W. MORROW

EDWARD H. MOORES

LEON C. GAVRAS

CECIL H. FREY

Mr. William B. Macey
Secretary, Oil Conservation Commission
State of New Mexico
Santa Fe, New Mexico

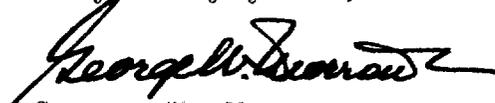
Re: Huerfanito Unit Area
San Juan County
New Mexico

Dear Sir:

On November 8, 1955, representatives of the J. Glenn Turner interests and of Skelly Oil Company met in the office of Mr. H. J. Duncan, Chief, The Conservation Division, United States Geological Survey, Washington, D. C., to discuss the problem of whether or not a second separate participating area should be created within captioned unit area.

At the conclusion of our meeting, it was decided that Skelly Oil Company should furnish a statement of its position relative to the desirability of using pressure data in delineating any such separate participating area. Attached hereto for your consideration is that statement.

Very truly yours,


George W. Morrow

GWM/nb
Enclosure

Tulsa, Oklahoma
December 9, 1955

Mr. H. J. Duncan
Chief, The Conservation Division
United States Geological Survey
Washington, D. C.

Re: Huerfanito Unit Area
I-Sec. No. 943
San Juan County
New Mexico

Dear Sir:

I have been requested to summarize the views expressed by me in the "Engineering Report" which was attached as "Exhibit 'B'" to Skelly Oil Company's "Geological and Engineering Report, Huerfanito Area, San Juan County, New Mexico", dated and transmitted to your office on June 23, 1955. Furthermore, I should like to reiterate my opinion as to the practicability, from an engineering standpoint, of using pressure data as the sole criterion for the delineation of a separate pool or deposit within captioned unit. In brief, my report stated the following conclusions:

1. There is no existing evidence which would prove conclusively that the Pictured Cliffs gas wells in the South portion of captioned unit area are producing from a reservoir separate from those in the North portion of said area.
2. There is no factual basis for the statement contained in Article III, at page 3 of Mr. Greer's Engineering Report of May 15, 1955, to the effect that ". . . the fact that Pictured Cliffs wells are producing from different reservoirs is evidenced by the difference in initial shut-in pressures of the wells".
3. There is no factual basis for Mr. Greer's statement contained in the same Article, at page 5 thereof, that a pressure differential of fifty (50) psig ". . . establishes the fact that an impermeable barrier

lies between the Ballard Field reservoir in the south part of the Huerfanito Unit and the wells completed in Participating Area No. 1". (At page 2, my report states: "We are of the opinion that it is inconceivable from a scientific standpoint that a definite conclusion as to reservoir separation in a reservoir with physical characteristics such as are found in the Pictured Cliffs formation in this area could be made on the basis of the difference of only 50 psig in the initial shut-in pressure on wells seven miles apart.")

4. There being a magnitude of factors adversely affecting the accuracy of initial shut-in pressures which far exceeds the magnitude of some of those factors adversely affecting the accuracy of seven day shut-in pressures, seven day shut-in pressures rather than initial shut-in pressures should be used whenever pressure data is required by the United States Geological Survey in the solution of a problem of this nature.

If we can assume that it is necessary to use some kind of pressure data to solve this problem, I believe most engineers would agree that the most theoretically perfect data available would be obtained from taking stabilized reservoir pressures. However, in this reservoir, and certainly in other reservoirs having comparable physical characteristics, the use of stabilized reservoir pressure data is demonstrably impractical for the following reasons:

1. Shut-in time factor, i.e., that length of time required for any given well to reach a pressure which may be said to be "stabilized". In general field practice, a commercial gas well is put on the line as soon as a market for the gas is available rather than being shut-in for a time sufficiently long for it to reach a stabilized pressure. In view of this practice, it is very unlikely that stabilized pressure data will be readily available in substantial quantity in most similar instances.
2. Well completion date factor: For example, note that the wells in the Northern portion of captioned unit were completed during the

period from February to December, 1953, while the first well drilled in the Southern portion of said unit was not completed until November, 1954 (one year after the completion date of the last well drilled in the Northern portion). Pressure data which was obtained from these wells was not - and could not have been - taken at the same time and, therefore, is not subject to valid comparison.

3. Practical aspect factor: Because the Oil Conservation Commission of New Mexico requires by order the taking of annual deliverability and seven day shut-in pressure tests at the same time, data thus obtained is readily available in the files of the Commission and provides a standard or yardstick by which to compare and contrast all wells so tested. This, among other data, is used in the proration formula established by the Commission for use in prorated fields in this area. (Attached hereto please find a copy of Order No. R-333-C and D, which is the most recent order pertaining to gas well testing procedure applicable to gas wells completed in San Juan County, New Mexico; I have indicated in red those portions of this order which I deem to be applicable to our problem).

My stated opinion in my report was, and I reiterate it here, that if pressure data must be used to the exclusion of all other factors in determining whether or not a separate participating area should be created within captioned unit area, then the results obtained from seven day shut-in pressures would provide the most readily available and practically obtainable data for use in making any such determination. Although quick to concede the theoretical soundness of stabilized reservoir pressure data, I cannot recommend its use for the reasons above expressed.

Enclosed please find transcripts of proceedings in the two hearings before the Oil Conservation Commission of New Mexico which involved, among other areas, the Huerfano Unit. For your convenience in examining these

Ltr., Mr. H. J. Duncan, 12/9/55, p. 4

transcripts, I have indicated those pages which encompass the bulk of the testimony respecting pressure data.

Case No. 908 (May 18-20, 1955):

Ratliff, p. 34 to 76 (direct, cross, re-direct and re-cross examination);
Greer, p. 76 to 98 (direct and cross examination); p. 104 to 126 (cross examination); p. 131 to 139 (cross, re-direct and re-cross examination);
Woodruff, p. 146 to 162 (direct and cross examination).

Cases Nos. 908, 944 and 955 (October 13, 1955):

Ratliff, p. 6 to 23 (direct and cross examination);
Greer, p. 34 to 65 (direct and cross examination);
Woodruff, p. 68 to 79 (direct and cross examination).

In the event that you do not desire to retain these transcripts, we would appreciate your returning them to us for our files.

Very truly yours,



Barton W. Ratliff
Petroleum Engineer

BWR/nb
Enclosures - 1

cc: Messrs: T. F. Thompson
G. W. Selinger
G. W. Morrow

Mr. John A. Anderson
Regional Oil and Gas Supervisor
United States Geological Survey
Roswell, New Mexico

To New Mexico Oil Conservation
Commission as follows:

Hon. John F. Simms
Governor, State of New Mexico
Santa Fe, New Mexico

Hon. E. S. Walker
Commissioner of Public Lands
State of New Mexico
Santa Fe, New Mexico

Mr. William B. Macey
Secretary, Oil Conservation Commission
State of New Mexico
Santa Fe, New Mexico