

Gulf Oil Corporation

ROSWELL PRODUCTION DISTRICT

1964 JUN 12 PM 1:32 P. O. Drawer 1938
Roswell, New Mexico 88201

W. B. Hopkins
DISTRICT MANAGER
M. I. Taylor
DISTRICT PRODUCTION
MANAGER
F. O. Martlock
DISTRICT EXPLORATION
MANAGER
H. A. Rankin
DISTRICT SERVICES MANAGER

June 11, 1964

Oil Conservation Commission
Post Office Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. Dan S. Nutter,
Chief Engineer

Re: Case No. 3066
West Pearl Queen Unit Waterflood

Gentlemen:

In testimony before the Oil Conservation Commission at the June 10, 1964 Examiner Hearing pertaining to Case No. 3066, Gulf offered two plans for dually injecting water into the Queen reservoir underlying the West Pearl Queen Unit. These two plans were described in Exhibits 8-11, which were entered in evidence, and outlined proposals for dually injecting through either two strings of coated tubing or simultaneously through one string of tubing and the tubing-casing annulus. Gulf indicated that neither plan had definitely been decided on since there were pros and cons for each which would have to be weighed and analyzed by our field personnel prior to a final decision. A decision has now been reached; Gulf plans to dually inject water into the Queen reservoir through injection wells equipped with dual strings of tubing as illustrated in Exhibit No. 8 and detailed in tabular form in Exhibit No. 9.

Yours very truly,

M. I. Taylor
M. I. Taylor

DGB:sz

cc: Mr. Frank E. Irby
Chief, Water Rights Division
State Engineer's Office
Capitol Building
Santa Fe, New Mexico 87501

Mrs. Marian M. Rhea
Supervisor, Unit Division
State Land Office
Post Office Box 1148
Santa Fe, New Mexico 87501



OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

June 19, 1964

C
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P
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Mr. Bill Kastler
Gulf Oil Corporation
Post Office Box 1938
Roswell, New Mexico

Dear Mr. Kastler:

Enclosed herewith is Commission Order No. R-2729, entered in Case No. 3066, approving the West Pearl Queen Waterflood Project. Injection shall be through plastic coated tubing, and, in the case of dual injection wells, through parallel strings of plastic coated tubing, with separation of the zones by means of packers.

According to our calculations, when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 2310 barrels per day.

Please report any error in this calculated maximum allowable immediately, both to the Santa Fe Office of the Commission and the appropriate district proration office.

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify both of the aforementioned Commission offices by letter of any change in the status of wells in the project area, i.e., when active injection commences, when additional injection or producing wells are drilled, when additional wells are acquired through purchase or unitization, when wells have received a response to water injection, etc.

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

-2-

Mr. Bill Kastler

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Your cooperation in keeping the Commission so informed as to the status of the project and the wells therein will be appreciated.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Enclosure

cc: Oil Conservation Commission
Hobbs, New Mexico

Mr. Frank Irby
State Engineer Office
Santa Fe, New Mexico

GOVERNOR
EDWIN L. MECHEM
CHAIRMAN

State of New Mexico
Oil Conservation Commission



STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER

P. O. BOX 2088
SANTA FE
87501

Mr. Bill Kastler
Gulf Oil Corporation
Post Office Box 1938
Roswell, New Mexico

_____, 19____

Gentlemen:

Enclosed herewith is Commission Order No. R-2729, entered in Case No. 3066, approving the West Pearl Queen Water Flood Project. *Injection shall be through plastic coated tubing, and, in the case of dual injection wells, through parallel strings.*

According to our calculations, when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 2310 barrels per day.

Please report any error in this calculated maximum allowable immediately, both to the Santa Fe office of the Commission and the appropriate District proration office.

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify both of the aforementioned Commission offices by letter of any change in the status of wells in the project area, i.e., when active injection commences, when additional injection or producing wells are drilled, when additional wells are acquired through purchase or unitization, when wells have received a response to water injection, etc.

Your cooperation in keeping the Commission so informed as to the status of the project and the wells therein will be appreciated.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

cc: Hobbs OCC
Frank Irby

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MAIN OFFICE OCC

1964 JUN 16 AM 7:44

June 15, 1964

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Mr. M. I. Taylor
Gulf Oil Corporation
P. O. Drawer 1938
Roswell, New Mexico 88201

Dear Mr. Taylor:

Receipt of your letter dated June 11, 1964 which states that the injection wells in the West Pearl Queen Unit waterflood, (OCC Case 3066) will be equipped with dual strings of tubing as illustrated in Exhibit No. 8 and detailed in tabular form in Exhibit No. 9 is gratefully acknowledged.

Very truly yours,

S. E. Reynolds
State Engineer

By:

Frank E. Irby
Chief
Water Rights Division

FEI/ma
cc-A. L. Porter, Jr.

May 19, 1964

Mr. Frank Irby, State Engineer
Post Office Box 1079
Santa Fe, New Mexico 87501

Dear Mr. Irby:

As you suggested in the May 14, 1964 telephone conversation with Mr. D. G. Bilbrey of our office, we are writing this letter outlining briefly one of several possible water injection programs which Gulf might employ in the West Pearl (Queen Unit) waterflood project in hopes of obtaining your approval prior to our waterflood hearing before the OSC.

As pointed out by Mr. Bilbrey, none of the 30 injection wells in the proposed waterflood has the production casing cemented across the Santa Rosa formation. Found from approximately 900 to 1300 feet in this area. Since Gulf might wish to dually inject into two separate intervals simultaneously down the tubing and the tubing-casing annulus, you wanted to know precisely what steps we would take to insure that the Santa Rosa would not be endangered by contamination from injected waters through possible casing leaks. The following steps, which are also briefly described on the attached diagrammatic sketch, would be taken during injection operations to insure that the Santa Rosa formation would be adequately protected:

- (1) The maximum injection pressure anticipated during the waterflood is 2500 psi and the casing above the perforations would be tested to approximately 2000 psi (slightly lower than the 3000 psi design pressure of the system) prior to start of water injection.
- (2) The injection system would be of the closed type to minimize oxygen corrosion. The Ogallala water, which will be utilized to flood the Queen reservoir, would be treated to reduce its oxygen content to 0.20 ppm. When recycled water is used in the injection wells additional corrosion treatment would be initiated.
- (3) To check the effectiveness of our water treating program, corrosion coupon tests would be continually conducted at the injection wells.

ILLEGIBLE

CASE NO. 3066
EXHIBIT NO. 12

cert

Mr. Frank Irby

- 2 -

May 19, 1964

- (4) To detect any leak in the production casing which might occur even after all precaution had been taken, frequent observation of the surface casing for increase in pressure or actual fluid flow would be maintained. At the same time injection pressure at the well head, especially that on the annulus, would be closely watched for any significant change.

We believe this injection program with the safeguards outlined would insure that the Santa Rosa or any other shallow fresh water sands would be protected from contamination during the ten years of waterflood operations. Dual injection, which we believe to be very important in this reservoir, simultaneously down the tubing and the tubing-casing annulus could effect sizable monetary savings to the West Pearl Gascon Unit as compared to injection down two strings of small-size coated-tubing.

We hope this program will be acceptable to you; however, if you have any suggestions or objections concerning this possible approach, please notify us as soon as possible.

Yours very truly,

GULF OIL CORPORATION

M. I. Taylor

Attachment
DCB:ers

CASE NO. 3066
EXHIBIT NO. 12

ILLEGIBLE



STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS
STATE ENGINEER

May 22, 1964

ADDRESS CORRESPONDENCE TO:
STATE CAPITOL
SANTA FE, N. M.

87501

Mr. M. I. Taylor
District Production Manager
Gulf Oil Corporation
P. O. Drawer 1938
Roswell, New Mexico 88201



Dear Mr. Taylor:

Your letter of May 19, 1964 referring to my telephone conversation with Mr. D. G. Bilbrey is gratefully acknowledged.

It appears from your outline of the protective measures set forth in your letter and a perusal of your diagrammatic sketch that I can refrain from objecting to your proposal provided your statements 1 through 4 and the paragraph following statement 4 and the diagrammatic sketch are entered in the record for the Oil Conservation Commission without change.

If you find a change necessary, it would be advisable to inform me in order that I may have an opportunity to review it before appearing at the hearing.

See Ex 12

Very truly yours,

S. E. Reynolds
State Engineer

FEI/ma

By: *Frank E. Irby*
Frank E. Irby
Chief
Water Rights Division

CASE NO. 3066
EXHIBIT NO. 13