

S. P. Y A T E S

OIL OPERATOR AND PRODUCER

YATES BUILDING - 207 SOUTH 4TH STREET

ARTESIA, NEW MEXICO - 88210

July 16, 1969

Mr. A. L. Porter, Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico, 87501

Case 11025

Re: Application to Inject Water into Queen Formation,
McMillan West Pool, Eddy County, New Mexico

Dear Mr. Porter:

Application is hereby submitted by S. P. Yates of Artesia for original authority for the injection of water into the Queen formation for a pressure maintenance program in the McMillan West Pool, Eddy County, New Mexico.

Permission is sought to convert the S. P. Yates-Anderson No. 2 well, located 2310' from the South line and 990' from the East line of Section 11, T-20-S, R-26-E, which is approximately 3/4 mile east of the Pecos River and south of Lake McMillan, having an elevation of 3278' ground level, drilled to a total depth of 702' in February 1969, plugged back to 628' with perforations in the Second Queen Oil horizon at 550-560'. The Anderson No. 1 well, located approximately 750 feet southwest of the No. 2 well, is the only remaining producer in this pool and is currently producing only 4 BOPD.

The Second Queen appears as a series of lenticular sand traps scattered along the anticlinal nose of the easterly plunging Artesia-Vacuum Trend of the Guadalupian Series. Production performance suggest permeability pinchouts between lenses and a generally tight to silty sandstone with primary recovery curtailed by economics at only 1 or 2 percent of original oil in place. Core analyses from the Anderson No. 2 and the Riggs No. 3 yield an average porosity of 14.6 percent, water saturation of 32.3 percent, and a permeability range of 6.1 to 0.5 md for an average of 1.75 md. Original oil in place is estimated at 738 STBO/ac-ft.

In the absence of a pressure maintenance program, production from the Anderson No. 1 would have to be curtailed at a projected cumulative of less than 2000 barrels of oil. The Yates-Bowers A-1, the Queen discovery well, potentialized at 36 BOPD in 1939 and was temporarily abandoned at only 922 BO cumulative. The Hondo-Federal M-1 potentialized at 42 BOPD in 1961, was temporarily abandoned at only 894 BO cumulative. Under a pressure maintenance program, the Anderson No. 1 may be anticipated to yield 38,000 BO before abandonment.

Water requirements for a pressure maintenance program is calculated at 135,000 barrels for the Anderson No. 2 over a period of 20 years, of which 54,000 barrels will be make-up water, the remainder being re-cycled produced water. The average rate of injection then is less than 20 BOPD. Under pilot conditions, the source

DOCKET MAILED

Date

9-26-69

Mr. A. L. Porter

July 16, 1969

Re: Application to Inject Water, McMillan West Pool

Page 2

of this make-up water will be by truckage from nearby oil-producing installations. Other sources of make-up water will be negotiated as feasibility of the project is proven.

A plat showing the location of the proposed injection well and the location of all other wells within a two-mile radius, and indicating the lessees and producing formations is appended and marked Exhibit 1. A diagrammatic sketch of the proposed injection well and all pertinent data is also appended and marked Exhibit 2. A copy of the Electric log of this well is attached hereto. By copy of this application, notice of this intent have been sent to the USGS (surface owners) in accordance with Oil Conservation Commission Rule 701-C.
~~There are no Offset Operators.~~

Respectfully submitted,

S. P. Yates
S. P. YATES

cc:

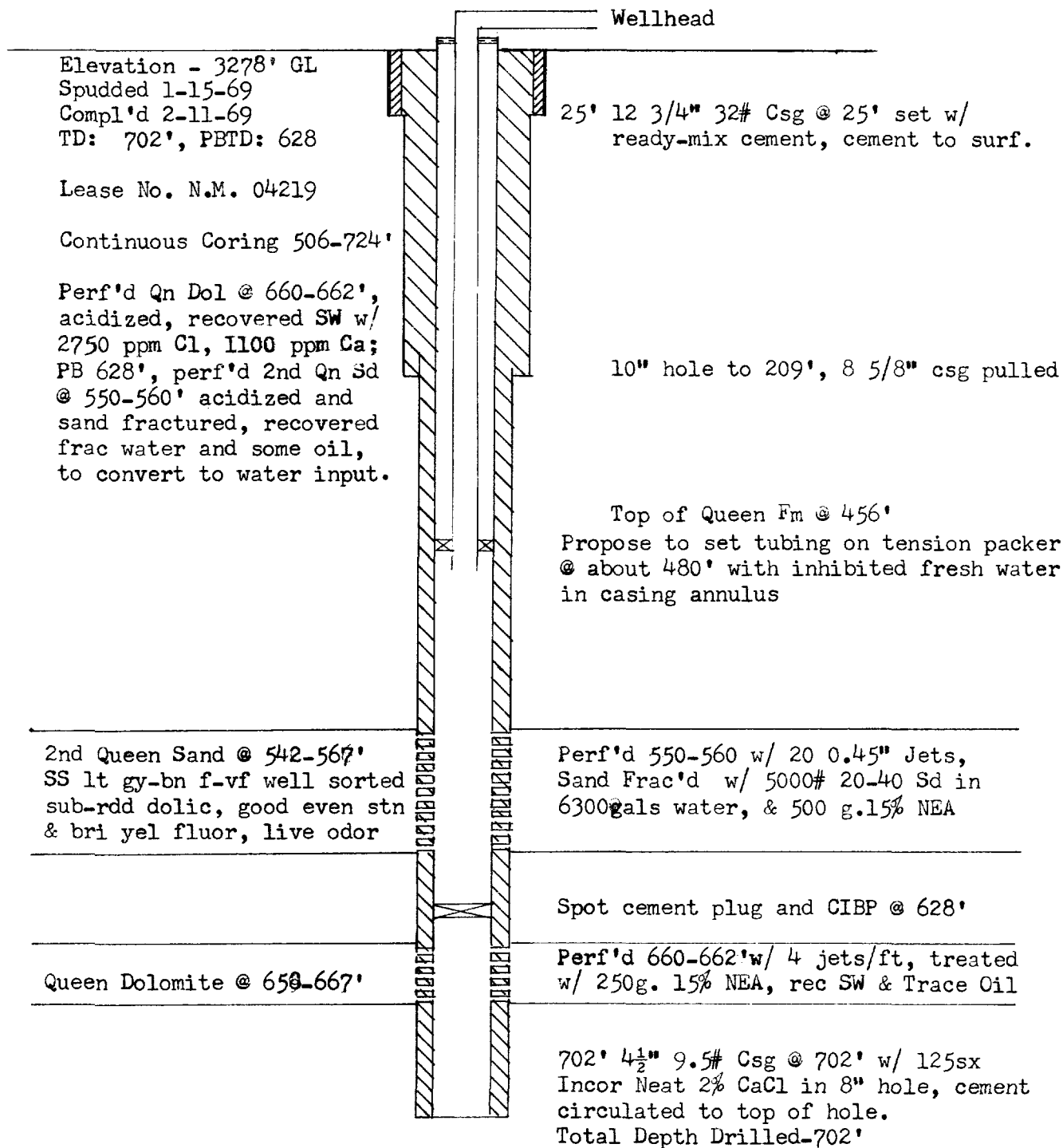
A. L. Porter, 3 copies

USGS, 4 copies

File, 1 copy

DIAGRAMMATIC SKETCH OF INJECTION WELL

S. P. YATES - ANDERSON No. 2
2310 FSL 990 FEL, Sec 11, T-20-S, R-26-E
McMillan, West (Queen) Pool, Eddy County



HALLIBURTON DIVISION LABORATORY
HALLIBURTON COMPANY
MIDLAND DIVISION

LABORATORY WATER ANALYSIS

No. W1-097-69

To S. P. Yates

Date February 27, 1969

207 So. 4th St.

Artesia, New Mexico 88210

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by _____ Date Rec. 2-24-69

Well No. Anderson #2 Depth _____ Formation Queen

County Eddy Field _____ Source _____

Resistivity 1.12 @ 72 F

Specific Gravity 1.002

pH 6.2

Calcium (Ca) 1,100

*MPL

Magnesium (Mg) 155

Chlorides (Cl) 2,750

Sulfates (SO₄) 140Bicarbonates (HCO₃) 230

Soluble Iron (Fe) 90

Remarks:

*Milligrams per liter

Respectfully submitted,

Analyst: Frank Whitfield

cc:

HALLIBURTON COMPANY

By

Frank Whitfield

DIVISION CHEMIST

NOTICE

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, whether it be to act or omission, resulting from such report or its use.

Case 4225