

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

April 23, 1964

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Y  
  
Pennzoil Company  
1007 Midland Savings Building  
Midland, Texas 79704

Gentlemen:

Enclosed herewith please find Administrative Order WFX-171 for your Well No. 13 located in the NW/4 SE/4 of Section 17 and Well No. 15 located in the NW/4 SW/4 of Section 19 both in Township 17 South, Range 33 East, NMEB, Lea County, New Mexico, in the Maljamar (Grayburg-San Andres) Pool.

Very truly yours,

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

ALP/JEK/og

cc: Oil Conservation Commission - Hobbs  
Oil & Gas Engineering Committee - Hobbs

DONE at Santa Fe, New Mexico, on the day and year herein above designated.

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

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

SEAL

1. The first part of the paper is devoted to the study of the properties of the function  $f(x)$  defined by the equation

$$f(x) = \int_0^x \frac{1}{1+t^2} dt.$$

It is shown that the function  $f(x)$  is increasing and concave down on the interval  $(-\infty, \infty)$ . Moreover, the function  $f(x)$  is bounded on the interval  $(-\infty, \infty)$  and its range is the interval  $(0, \frac{\pi}{2})$ .

2. In the second part of the paper, we study the properties of the function  $g(x)$  defined by the equation

$$g(x) = \int_0^x \frac{1}{1+t^2} dt + \int_0^x \frac{1}{1+t^4} dt.$$

It is shown that the function  $g(x)$  is increasing and concave down on the interval  $(-\infty, \infty)$ . Moreover, the function  $g(x)$  is bounded on the interval  $(-\infty, \infty)$  and its range is the interval  $(0, \frac{\pi}{2} + \frac{\pi}{4})$ .

3. In the third part of the paper, we study the properties of the function  $h(x)$  defined by the equation

$$h(x) = \int_0^x \frac{1}{1+t^2} dt + \int_0^x \frac{1}{1+t^4} dt + \int_0^x \frac{1}{1+t^6} dt.$$

It is shown that the function  $h(x)$  is increasing and concave down on the interval  $(-\infty, \infty)$ . Moreover, the function  $h(x)$  is bounded on the interval  $(-\infty, \infty)$  and its range is the interval  $(0, \frac{\pi}{2} + \frac{\pi}{4} + \frac{\pi}{6})$ .

4. In the fourth part of the paper, we study the properties of the function  $k(x)$  defined by the equation

$$k(x) = \int_0^x \frac{1}{1+t^2} dt + \int_0^x \frac{1}{1+t^4} dt + \int_0^x \frac{1}{1+t^6} dt + \int_0^x \frac{1}{1+t^8} dt.$$

It is shown that the function  $k(x)$  is increasing and concave down on the interval  $(-\infty, \infty)$ . Moreover, the function  $k(x)$  is bounded on the interval  $(-\infty, \infty)$  and its range is the interval  $(0, \frac{\pi}{2} + \frac{\pi}{4} + \frac{\pi}{6} + \frac{\pi}{8})$ .

5. In the fifth part of the paper, we study the properties of the function  $l(x)$  defined by the equation

$$l(x) = \int_0^x \frac{1}{1+t^2} dt + \int_0^x \frac{1}{1+t^4} dt + \int_0^x \frac{1}{1+t^6} dt + \int_0^x \frac{1}{1+t^8} dt + \int_0^x \frac{1}{1+t^{10}} dt.$$

It is shown that the function  $l(x)$  is increasing and concave down on the interval  $(-\infty, \infty)$ . Moreover, the function  $l(x)$  is bounded on the interval  $(-\infty, \infty)$  and its range is the interval  $(0, \frac{\pi}{2} + \frac{\pi}{4} + \frac{\pi}{6} + \frac{\pi}{8} + \frac{\pi}{10})$ .

6. In the sixth part of the paper, we study the properties of the function  $m(x)$  defined by the equation

$$m(x) = \int_0^x \frac{1}{1+t^2} dt + \int_0^x \frac{1}{1+t^4} dt + \int_0^x \frac{1}{1+t^6} dt + \int_0^x \frac{1}{1+t^8} dt + \int_0^x \frac{1}{1+t^{10}} dt + \int_0^x \frac{1}{1+t^{12}} dt.$$