

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

MISCELLANEOUS REPORTS ON WELL

Submit this report in triplicate to the Oil Conservation Commission or its proper agent within ten days after the work specified is completed. It should be signed and sworn to before a notary public for reports on beginning drilling operations, results of shooting well, results of test of casing shut-offs, result of plugging of well, and other important operations, even though the work was witnessed by an agent of the commission. Reports on minor operations need not be signed and sworn to before a notary public. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of report by checking below:

REPORT ON BEGINNING DRILLING OPERATIONS		REPORT ON REPAIRING WELL	
REPORT ON RESULT OF SHOOTING OR CHEMICAL TREATMENT OF WELL		REPORT ON PULLING OR OTHERWISE ALTERING CASING	
REPORT ON RESULT OF TEST OF CASING SHUT-OFF	<input checked="" type="checkbox"/>	REPORT ON DEEPENING WELL	
REPORT ON RESULT OF PLUGGING OF WELL			

Monument, New Mexico.

Place

May 31, 1938.

Date

OIL CONSERVATION COMMISSION
Santa Fe, New Mexico.
Gentlemen:

DUPLICATE

Following is a report on the work done and the results obtained under the heading noted above at the

Amerada Petroleum Corporation

State VA

Well No. 2

in the

Company or Operator

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R.

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N. M. P. M.,

Vacuum

Field,

Lea

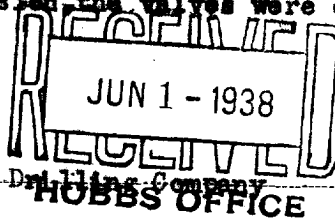
County

The dates of this work were as follows: May 28, 1938

Notice of intention to do the work was (~~was not~~) submitted on Form C-102 on May 26 1938 and approval of the proposed plan was (~~was not~~) obtained. (Cross out incorrect words.)

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

5 1/2" casing set at 4316' and cemented with 200 sacks of common cement on 5/25/38 was allowed to stand undisturbed for 72 hours. Pump pressure of 1200# was applied, and the valves closed. There was no drop in pressure. The cement plug was then drilled and a similar test applied. On each occasion the valves were closed for 30 minutes. Drilling was resumed on 5/28/38.



Witnessed by L.E. Stuart
Name

Roble Drilling Company
Company

Tool Pusher.
Title

Subscribed and sworn to before me this

31

day of

May

, 1938

Patricia Mahoney
Notary Public

My Commission expires October 24, 1939.

I hereby swear or affirm that the information given above is true and correct.

Name

Position

Representing

Address

Superintendent

Amerada Petroleum Corporation

Company or Operator

Monument, New Mexico.

Remarks:

Guy Shepard
Name

Oil & Gas Inspector

Title

DISCUSSION OF THE PROBLEM

1. Introduction

2. Statement of the Problem

The problem is to find the solution of the differential equation $y'' + p(x)y' + q(x)y = r(x)$ subject to the boundary conditions $y(a) = \alpha$ and $y(b) = \beta$. The functions $p(x)$, $q(x)$, and $r(x)$ are assumed to be continuous on the interval $[a, b]$.

The first step in the solution is to find the general solution of the homogeneous equation $y'' + p(x)y' + q(x)y = 0$. This can be done by using the method of variation of parameters. The second step is to find a particular solution of the inhomogeneous equation. This can be done by using the method of undetermined coefficients or the method of variation of parameters. The third step is to combine the general solution of the homogeneous equation and the particular solution of the inhomogeneous equation to obtain the general solution of the inhomogeneous equation.

The fourth step is to apply the boundary conditions to the general solution of the inhomogeneous equation to find the constants of integration. The fifth step is to check the solution by substituting it back into the differential equation and the boundary conditions.

The sixth step is to discuss the properties of the solution. The seventh step is to conclude the discussion. The eighth step is to list the references. The ninth step is to list the symbols used. The tenth step is to list the abbreviations used. The eleventh step is to list the acronyms used. The twelfth step is to list the initials used. The thirteenth step is to list the full names used. The fourteenth step is to list the titles used. The fifteenth step is to list the authors used. The sixteenth step is to list the publishers used. The seventeenth step is to list the years used. The eighteenth step is to list the volumes used. The nineteenth step is to list the issues used. The twentieth step is to list the pages used.

3. Solution of the Problem

The solution of the problem is given by the formula $y(x) = y_h(x) + y_p(x)$, where $y_h(x)$ is the general solution of the homogeneous equation and $y_p(x)$ is the particular solution of the inhomogeneous equation.

The general solution of the homogeneous equation is given by the formula $y_h(x) = C_1 y_1(x) + C_2 y_2(x)$, where $y_1(x)$ and $y_2(x)$ are linearly independent solutions of the homogeneous equation and C_1 and C_2 are arbitrary constants.

The particular solution of the inhomogeneous equation is given by the formula $y_p(x) = \frac{1}{W(x)} \int y_1(x) y_2(x) r(x) dx$, where $W(x)$ is the Wronskian of $y_1(x)$ and $y_2(x)$.

The constants C_1 and C_2 are determined by the boundary conditions $y(a) = \alpha$ and $y(b) = \beta$. The solution is unique if the boundary conditions are not contradictory.

The solution is continuous on the interval $[a, b]$ if the functions $p(x)$, $q(x)$, and $r(x)$ are continuous on the interval $[a, b]$.

The solution is differentiable on the interval $[a, b]$ if the functions $p(x)$, $q(x)$, and $r(x)$ are differentiable on the interval $[a, b]$.