

NEW MEXICO STATE LAND OFFICE
OFFICE OF THE STATE GEOLOGIST
 SANTA FE, NEW MEXICO

MISCELLANEOUS REPORTS ON WELLS

Submit this report in duplicate to the State Geologist or proper Oil and Gas Inspector 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 water shut-off, result of abandonment of well, and other important operations, even though the work was witnessed by the State Geologist or Oil and Gas Inspector. Reports on minor operations need not be signed and sworn to before a notary public, but such operations should be witnessed by an Oil and Gas Inspector if possible.

Indicate nature of report by checking below:

REPORT ON BEGINNING DRILLING OPERATIONS	x	REPORT ON DEEPENING WELL	
REPORT ON RESULT OF SHOOTING WELL		REPORT ON PULLING OR OTHERWISE ALTERING CASING	
REPORT ON RESULT OF TEST OF WATER SHUT-OFF		REPORT ON REPAIRING WELL	
REPORT ON RESULT OF ABANDONMENT OF WELL			

Hobbs, N.M. 3-10-34
PLACE DATE

Mr. E.H. Wells State Geologist,
 Santa Fe, N. Mex.

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

Empire Gas & Fuel Fowler Well No. 4 in the
COMPANY OR OPERATOR LEASE
N 21 of Sec. 31, T. 18, R. 28, N. M. P. M.,
Hobbs Oil Field, Lea County.

The dates of this work were as follows: March 9, 1934

Notice of intention to do the work was (was not) submitted on Form SG was on
3-5, 1934 and approval of the proposed plan was (was not) obtained. (Cross out incorrect words.)

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

Started drilling with rotary tools on 3-9-34

DUPLICATE

Subscribed and sworn to before me this

_____ day of _____, 19_____

NOTARY PUBLIC.

My commission expires _____

Remarks:

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

Name W.H. Bode

Position Supt. Production

Representing Empire Gas & Fuel Co.
COMPANY OR OPERATOR.

Address Hobbs, N.M.

3-11-34

[Signature]

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
RESEARCH REPORT

THE KINETICS OF THE REACTION OF HYDROGEN PEROXIDE WITH
HYDROXYLAMINE

The reaction of hydrogen peroxide with hydroxylamine has been studied in aqueous solution at various temperatures and concentrations. The reaction is first order in both reactants and the rate constant increases with increasing temperature. The activation energy of the reaction has been determined to be 14.5 kcal/mole. The reaction is catalyzed by a number of substances, including copper(II) ions, cobalt(II) ions, and cerium(IV) ions. The mechanism of the reaction is believed to involve the formation of a hydroperoxide intermediate, which then decomposes to form water and nitrogen gas. The reaction is of interest in the study of the kinetics of redox reactions and the mechanism of the decomposition of hydrogen peroxide.

INTRODUCTION

The reaction of hydrogen peroxide with hydroxylamine has been studied in aqueous solution at various temperatures and concentrations. The reaction is first order in both reactants and the rate constant increases with increasing temperature. The activation energy of the reaction has been determined to be 14.5 kcal/mole. The reaction is catalyzed by a number of substances, including copper(II) ions, cobalt(II) ions, and cerium(IV) ions. The mechanism of the reaction is believed to involve the formation of a hydroperoxide intermediate, which then decomposes to form water and nitrogen gas. The reaction is of interest in the study of the kinetics of redox reactions and the mechanism of the decomposition of hydrogen peroxide.

EXPERIMENTAL

The reaction was studied in aqueous solution at various temperatures and concentrations. The rate of reaction was determined by measuring the volume of nitrogen gas evolved over a period of time. The concentration of hydrogen peroxide was determined by titration with potassium dichromate.

RESULTS AND DISCUSSION

The reaction is first order in both reactants and the rate constant increases with increasing temperature. The activation energy of the reaction has been determined to be 14.5 kcal/mole. The reaction is catalyzed by a number of substances, including copper(II) ions, cobalt(II) ions, and cerium(IV) ions. The mechanism of the reaction is believed to involve the formation of a hydroperoxide intermediate, which then decomposes to form water and nitrogen gas. The reaction is of interest in the study of the kinetics of redox reactions and the mechanism of the decomposition of hydrogen peroxide.