

N. MEXICO OIL CONSERVATION COMMI. N

Santa Fe, New Mexico

MISCELLANEOUS REPORTS ON WELLS

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-off, 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	X	REPORT ON DEEPENING WELL	
REPORT ON RESULT OF PLUGGING OF WELL			

Artesia, New Mexico.

August 26, 1942

Place

Date

OIL CONSERVATION COMMISSION,
SANTA FE, NEW MEXICO.

Gentlemen:

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

Barney Cockburn

State- B-3635

Well No. 3

in the

Company or Operator

Lease

NE $\frac{1}{4}$ NW $\frac{1}{4}$

of Sec. 2

T. 17S

R. 30E

N. M. P. M.,

Square Lake

Field,

Eddy

County.

The dates of this work were as follows:

Notice of intention to do the work ~~was~~ (was not) submitted on Form C-102 on 19and approval of the proposed plan ~~was~~ (was not) obtained. (Cross out incorrect words.)

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

June 5, 1942,- 2390' of 7" Casing cemented with 50 sacks cement by International Cementers, Inc., completing work at 6 P.M.

June 8, 1942,- Drill Plug, bailed hole dry, continued drilling with complete water shut-off.

Witnessed by _____
Name Company Title

Subscribed and sworn before me this 26th

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

day of August, 19 42

Name (Signed) J. G. Wright

Position Agent

(Signed) Juanita Denton.

Notary Public

Representing Barney Cockburn

Company or Operator

My commission expires August 28, 1945

Address Box 115, Artesia, New Mexico.

Remarks:

(Signed) Roy Yarbrough

Name

Oil & Gas Inspector

Title

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 354: QUANTUM MECHANICS

PROBLEM SET 10: ANGULAR MOMENTUM AND SPIN

Due: Friday, November 10, 2017

1. (10 points) Consider a particle with spin $s = 1/2$ and orbital angular momentum $l = 1$. The total angular momentum is $j = 3/2$. The energy levels are degenerate. Find the degeneracy of the ground state.

2. (10 points) Consider a particle with spin $s = 1/2$ and orbital angular momentum $l = 1$. The total angular momentum is $j = 3/2$. The energy levels are degenerate. Find the degeneracy of the first excited state.

3. (10 points) Consider a particle with spin $s = 1/2$ and orbital angular momentum $l = 1$. The total angular momentum is $j = 3/2$. The energy levels are degenerate. Find the degeneracy of the second excited state.

4. (10 points) Consider a particle with spin $s = 1/2$ and orbital angular momentum $l = 1$. The total angular momentum is $j = 3/2$. The energy levels are degenerate. Find the degeneracy of the third excited state.

5. (10 points) Consider a particle with spin $s = 1/2$ and orbital angular momentum $l = 1$. The total angular momentum is $j = 3/2$. The energy levels are degenerate. Find the degeneracy of the fourth excited state.

6. (10 points) Consider a particle with spin $s = 1/2$ and orbital angular momentum $l = 1$. The total angular momentum is $j = 3/2$. The energy levels are degenerate. Find the degeneracy of the fifth excited state.

7. (10 points) Consider a particle with spin $s = 1/2$ and orbital angular momentum $l = 1$. The total angular momentum is $j = 3/2$. The energy levels are degenerate. Find the degeneracy of the sixth excited state.

8. (10 points) Consider a particle with spin $s = 1/2$ and orbital angular momentum $l = 1$. The total angular momentum is $j = 3/2$. The energy levels are degenerate. Find the degeneracy of the seventh excited state.

9. (10 points) Consider a particle with spin $s = 1/2$ and orbital angular momentum $l = 1$. The total angular momentum is $j = 3/2$. The energy levels are degenerate. Find the degeneracy of the eighth excited state.

10. (10 points) Consider a particle with spin $s = 1/2$ and orbital angular momentum $l = 1$. The total angular momentum is $j = 3/2$. The energy levels are degenerate. Find the degeneracy of the ninth excited state.

11. (10 points) Consider a particle with spin $s = 1/2$ and orbital angular momentum $l = 1$. The total angular momentum is $j = 3/2$. The energy levels are degenerate. Find the degeneracy of the tenth excited state.

12. (10 points) Consider a particle with spin $s = 1/2$ and orbital angular momentum $l = 1$. The total angular momentum is $j = 3/2$. The energy levels are degenerate. Find the degeneracy of the eleventh excited state.

13. (10 points) Consider a particle with spin $s = 1/2$ and orbital angular momentum $l = 1$. The total angular momentum is $j = 3/2$. The energy levels are degenerate. Find the degeneracy of the twelfth excited state.

14. (10 points) Consider a particle with spin $s = 1/2$ and orbital angular momentum $l = 1$. The total angular momentum is $j = 3/2$. The energy levels are degenerate. Find the degeneracy of the thirteenth excited state.

15. (10 points) Consider a particle with spin $s = 1/2$ and orbital angular momentum $l = 1$. The total angular momentum is $j = 3/2$. The energy levels are degenerate. Find the degeneracy of the fourteenth excited state.

16. (10 points) Consider a particle with spin $s = 1/2$ and orbital angular momentum $l = 1$. The total angular momentum is $j = 3/2$. The energy levels are degenerate. Find the degeneracy of the fifteenth excited state.