

NEW MEXICO OIL CONSERVATION COMMISSION

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		REPORT ON DEEPENING WELL	
REPORT ON RESULT OF PLUGGING OF WELL	XX		

Artesia, New Mexico

September 5, 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

Otis A. Roberts

Carpenter State

Well No. 3 in the

Company or Operator

Lease

NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Sec. 25, T. 17S, R. 27E, N. M. P. M.,

Red Lakes Field, Eddy County.

The dates of this work were as follows: April 9-11, 1942

Notice of intention to do the work was (was ~~XXX~~) submitted on Form C-102 on March 30, 1942

and approval of the proposed plan was (was not) obtained. (Cross out incorrect words.)

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

Plugged as Follows: Plugged back with cement to bottom of casing at 445.
Shot and pulled casing. Filled with mud to 225. Bridged and set cement plug
to 210. Filled with mud to surface. Set cement plug at top.

Witnessed by _____
Name Company Title

Subscribed and sworn before me this _____

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

5 day of September, 1942

Name Otis A. Roberts (Signed)

Position Owner

Thomas C. Williams (Signed)

Representing Self

Notary Public

Company or Operator

My commission expires March 10, 1946

Address _____

Remarks:

Roy Yarbrough (signed)

Name

State Oil & Gas Inspector

Title

1

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 $J = L + S$. Find the possible values of the total angular momentum quantum number j and the corresponding magnetic quantum numbers m_j .

2. (10 points) For a particle with spin $s = 1/2$, find the expectation value of the spin component S_x in the state $|j=1/2, m=1/2\rangle$.

3. (10 points) For a particle with spin $s = 1/2$, find the expectation value of the spin component S_y in the state $|j=1/2, m=1/2\rangle$.

4. (10 points) For a particle with spin $s = 1/2$, find the expectation value of the spin component S_z in the state $|j=1/2, m=1/2\rangle$.

5. (10 points) For a particle with spin $s = 1/2$, find the expectation value of the spin component S_x in the state $|j=3/2, m=3/2\rangle$.

6. (10 points) For a particle with spin $s = 1/2$, find the expectation value of the spin component S_y in the state $|j=3/2, m=3/2\rangle$.

7. (10 points) For a particle with spin $s = 1/2$, find the expectation value of the spin component S_z in the state $|j=3/2, m=3/2\rangle$.

8. (10 points) For a particle with spin $s = 1/2$, find the expectation value of the spin component S_x in the state $|j=3/2, m=1/2\rangle$.

9. (10 points) For a particle with spin $s = 1/2$, find the expectation value of the spin component S_y in the state $|j=3/2, m=1/2\rangle$.

10. (10 points) For a particle with spin $s = 1/2$, find the expectation value of the spin component S_z in the state $|j=3/2, m=1/2\rangle$.

11. (10 points) For a particle with spin $s = 1/2$, find the expectation value of the spin component S_x in the state $|j=3/2, m=-1/2\rangle$.

12. (10 points) For a particle with spin $s = 1/2$, find the expectation value of the spin component S_y in the state $|j=3/2, m=-1/2\rangle$.

13. (10 points) For a particle with spin $s = 1/2$, find the expectation value of the spin component S_z in the state $|j=3/2, m=-1/2\rangle$.

14. (10 points) For a particle with spin $s = 1/2$, find the expectation value of the spin component S_x in the state $|j=3/2, m=-3/2\rangle$.

15. (10 points) For a particle with spin $s = 1/2$, find the expectation value of the spin component S_y in the state $|j=3/2, m=-3/2\rangle$.

16. (10 points) For a particle with spin $s = 1/2$, find the expectation value of the spin component S_z in the state $|j=3/2, m=-3/2\rangle$.

17. (10 points) For a particle with spin $s = 1/2$, find the expectation value of the spin component S_x in the state $|j=3/2, m=1/2\rangle$.

18. (10 points) For a particle with spin $s = 1/2$, find the expectation value of the spin component S_y in the state $|j=3/2, m=1/2\rangle$.

19. (10 points) For a particle with spin $s = 1/2$, find the expectation value of the spin component S_z in the state $|j=3/2, m=1/2\rangle$.