

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	10 3/4"	REPORT ON DEEPENING WELL	
REPORT ON RESULT OF PLUGGING OF WELL			

Hobbs, New Mexico

August 2nd, 1936

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 _____

Gulf Oil Corporation Gypsy Division J.R. Phillips Well No. 2 in the
Company or Operator Lease
NE/4 of Sec. 6, T. 20S, R. 37E, N. M. P. M.,
Monument Field, Lea County.

The dates of this work were as follows: Cemented 7-31-1936, tested 8-2-1936

Notice of intention to do the work was [was not] submitted on Form C-102 on July 31 1936

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

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

The plug was drilled the hole bailed dry and let stand for 1 hour, the bailer reran and hole found to be dry and test Okeh, after approval of Mr. Vesely State Oil & Gas Inspector, preparations were made to drill ahead.

Witnessed by Lester LaFavour Gulf Oil Corporation Foreman, Field.
Name Company Title

Subscribed and sworn to before me this 1st

day of August, 1936

Notary Public

My Commission expires 1-2-3

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

Name C.E. Cummings

Position District Superintendent

Representing Gulf Oil Corporation Gypsy Division
Company or Operator

Address Hobbs, New Mexico.

Remarks:

[Signature]
Name
Title

Mathematical Induction

Principle of Mathematical Induction

Let $P(n)$ be a statement involving the natural number n . If $P(1)$ is true and $P(k) \Rightarrow P(k+1)$ for all $k \in \mathbb{N}$, then $P(n)$ is true for all $n \in \mathbb{N}$.

• $P(1)$ is true (Base Case)

• $P(k) \Rightarrow P(k+1)$ (Inductive Step)

• $P(n)$ is true for all $n \in \mathbb{N}$.

Example: Prove that $1 + 2 + \dots + n = \frac{n(n+1)}{2}$.

• Base Case: $n=1$, $1 = \frac{1(1+1)}{2} = 1$.

• Inductive Step: Assume $1 + 2 + \dots + k = \frac{k(k+1)}{2}$. Then $1 + 2 + \dots + k + 1 = \frac{k(k+1)}{2} + 1 = \frac{k(k+1) + 2}{2} = \frac{(k+1)(k+2)}{2}$.

• Conclusion: $1 + 2 + \dots + n = \frac{n(n+1)}{2}$ for all $n \in \mathbb{N}$.

Example: Prove that $2^n > n$ for all $n \in \mathbb{N}$.

• Base Case: $n=1$, $2^1 = 2 > 1$.

• Inductive Step: Assume $2^k > k$. Then $2^{k+1} = 2 \cdot 2^k > 2 \cdot k > k+1$.

• Conclusion: $2^n > n$ for all $n \in \mathbb{N}$.

Example: Prove that $1^2 + 2^2 + \dots + n^2 = \frac{n(n+1)(2n+1)}{6}$.

• Base Case: $n=1$, $1^2 = \frac{1(1+1)(2 \cdot 1 + 1)}{6} = 1$.

• Inductive Step: Assume $1^2 + 2^2 + \dots + k^2 = \frac{k(k+1)(2k+1)}{6}$. Then $1^2 + 2^2 + \dots + k^2 + (k+1)^2 = \frac{k(k+1)(2k+1)}{6} + (k+1)^2 = \frac{(k+1)(k(2k+1) + 6(k+1))}{6} = \frac{(k+1)(2k^2 + 7k + 6)}{6} = \frac{(k+1)(k+2)(2k+3)}{6}$.

• Conclusion: $1^2 + 2^2 + \dots + n^2 = \frac{n(n+1)(2n+1)}{6}$ for all $n \in \mathbb{N}$.

Example: Prove that $1 + 3 + 5 + \dots + (2n-1) = n^2$.

• Base Case: $n=1$, $1 = 1^2$.

• Inductive Step: Assume $1 + 3 + 5 + \dots + (2k-1) = k^2$. Then $1 + 3 + 5 + \dots + (2k-1) + (2k+1) = k^2 + (2k+1) = (k+1)^2$.

• Conclusion: $1 + 3 + 5 + \dots + (2n-1) = n^2$ for all $n \in \mathbb{N}$.

Example: Prove that $1 + 2 + 3 + \dots + n = \frac{n(n+1)}{2}$ using the principle of mathematical induction.

• Base Case: $n=1$, $1 = \frac{1(1+1)}{2} = 1$.

• Inductive Step: Assume $1 + 2 + 3 + \dots + k = \frac{k(k+1)}{2}$. Then $1 + 2 + 3 + \dots + k + 1 = \frac{k(k+1)}{2} + 1 = \frac{k(k+1) + 2}{2} = \frac{(k+1)(k+2)}{2}$.

• Conclusion: $1 + 2 + 3 + \dots + n = \frac{n(n+1)}{2}$ for all $n \in \mathbb{N}$.