

**NEW MEXICO OIL CONSERVATION COMMISSION**  
 SANTA FE, NEW MEXICO  
**MISCELLANEOUS NOTICES**

RECEIVED  
 NOV 7 1947  
 REGISTRY  
 POST OFFICE

Submit this notice in triplicate to the Oil Conservation Commission or its proper agent before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of notice by checking below:

NOTICE OF INTENTION TO TEST CASING SHUT-OFF		NOTICE OF INTENTION TO SHOOT OR CHEMICALLY TREAT WELL	
NOTICE OF INTENTION TO CHANGE PLANS		NOTICE OF INTENTION TO PULL OR OTHERWISE ALTER CASING	
NOTICE OF INTENTION TO REPAIR WELL		NOTICE OF INTENTION TO PLUG WELL	
NOTICE OF INTENTION TO DEEPEN WELL		Notice of Intention to Set Casing	X

Monument, New Mexico Place November 5, 1947 Date

OIL CONSERVATION COMMISSION,  
 Santa Fe, New Mexico.

Gentlemen:

Following is a notice of intention to do certain work as described below at the \_\_\_\_\_  
Amerada Petroleum Corporation Lease H. W. Andrews Well No. 8 in NW $\frac{1}{4}$  NW $\frac{1}{4}$   
 of Sec. 12, T. 20S, R. 36E, N. M. P. M., Monument Field  
Lea County.

**FULL DETAILS OF PROPOSED PLAN OF WORK**

FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS OF THE COMMISSION

5176' Total Depth, Lime. Finished drilling 11" hole at 5:10PM, 11-5-47. We intend to set 8-5/8" OD, 36# and 32# Casing at approximately 5170' and cement with 1000 sacks of cement.

Approved \_\_\_\_\_, 19\_\_\_\_  
 except as follows:

Amerada Petroleum Corporation  
 Company or Operator

By \_\_\_\_\_  
 Position Asst. Dist. Supt.  
 Send communications regarding well to

Name Amerada Petroleum Corporation  
 Address Drawer D, Monument, New Mexico

OIL CONSERVATION COMMISSION,  
 By Roy Yorkrough  
 Title Oil & Gas Inspector

# 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  $n \in \mathbb{N}$ .

Step 1: Base Case: Verify  $P(1)$  is true.

Step 2: Inductive Step: Assume  $P(k)$  is true for some  $k \in \mathbb{N}$ . Show that  $P(k+1)$  is true.

Step 3: Conclusion: By the principle of mathematical induction,  $P(n)$  is true for all  $n \in \mathbb{N}$ .

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

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

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

Step 3: Conclusion: By the principle of mathematical induction, the formula is true for all  $n \in \mathbb{N}$ .

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

Step 1: Base Case: For  $n=1$ ,  $2^1 = 2 > 1$ . True.

Step 2: Inductive Step: Assume  $2^k > k$ . Show  $2^{k+1} > k+1$ .

Step 3: Conclusion: By the principle of mathematical induction,  $2^n > n$  for all  $n \in \mathbb{N}$ .

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