

JICARILLA "E" NO. 13
Supplement to Form 9-331C

1. The Geologic name of the surface formation is, "Wasatch".
2. The estimated tops of important Geologic markers are:
 - A. Base of Ojo Alamo 3500 ft.
 - B. Fruitland 3622 ft.
 - C. Pictured Cliffs 3790 ft.
3. The estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered are:
 - A. Base of Ojo Alamo 3500 ft. - Water
 - B. Fruitland 3622 ft. - Water
 - C. Pictured Cliffs 3790 ft. - Gas
4. The casing program is shown on Form 9-331C and all casing is new.
5. The lessee's pressure control equipment schematics are attached along with minimum specifications, testing procedures and frequencies.
6. The type, estimated volumes and characteristics of the circulating medium are as follows:
 - A. From 0 feet to 250 feet - Natural Mud
 - B. From 250 feet to 3900 feet - Permoleoid mud dispersed and containing 167 sks of gel, 67 sks of permoleoid & 10 sks of C.M.C.
7. The auxiliary equipment to be used will be floats at the bit and a sub on the floor with a full opening valve to be stabbed into the drill pipe when the Kelly is not in the string.
8. This well is in an area which is almost completely developed, therefore we will not have a testing and coring program. The logging program will be as follows:
 - A. E. G. Induction
 - B. Gamma Ray Density
 - C. Gamma Ray Correlation
 - D. Cement Bond or Temperature log
9. There are no abnormal pressures, temperatures, or hydrogen sulfide problems expected in this highly developed area.
10. The anticipated starting date of this well is February 10, 1978.

1. Introduction

1.1. What is a system?

A system is a group of interacting or interrelated elements that act according to a set of rules to form a unified whole.

- A system has a boundary.
- A system has an environment.
- A system has an interface.

Systems can be open or closed. An open system interacts with its environment. A closed system does not interact with its environment.

- An open system receives energy and matter from its environment.
- An open system releases energy and matter to its environment.

Systems can be simple or complex. A simple system has a few components. A complex system has many components. A complex system is often composed of many simple systems.

Systems can be static or dynamic. A static system is not changing over time. A dynamic system is changing over time.

Systems can be linear or nonlinear. A linear system follows the principle of superposition. A nonlinear system does not follow the principle of superposition.

Systems can be deterministic or stochastic. A deterministic system follows a predictable pattern. A stochastic system follows a random pattern.

- Deterministic
- Stochastic

Systems can be open or closed. An open system interacts with its environment. A closed system does not interact with its environment.