

[004] Pumping the fracturing fluid into the well at high pressure creates fractures in a subterranean formation so that hydrocarbons have new channels through which to flow into the well. One fracking method is commonly called plug and perf. Perforating refers to an operation where a perforating gun is lowered by wireline into the casing of a well with a plug attached. The plug is set to isolate between different zones of the formation to direct fluid through the new perforations and into unfractured sections of the shale. Typically, an electrical current is sent down the well via a wireline that attaches to the perforating gun. An electrical charge is used to detonate shaped charges in the gun that form metal jets which perforate through the casing and cement. The perforating gun is then pulled out of the wellbore.

[005] In many wells, the fracking operation is carried out in stages. Typically, a first stage of the well will be perforated and hydraulically fractured. As desired, a plug can be placed at the end of the first stage, and a second stage can then be perforated and hydraulically fractured. With advancements in technology, such multi-stage fracking has become the norm. Fracturing in stages can be completed multiple times to cover the horizontal distance of the wellbore.

[006] Usually in fracturing systems, the fracturing equipment runs on diesel generated power. However, diesel is more expensive, is less environmentally friendly, less safe, and heavier to transport than natural gas. The large amounts of diesel fuel needed to power traditional fracturing operations require constant transportation and delivery by diesel tankers onto the well site. This results in significant carbon dioxide emissions. Some systems have tried to eliminate partial reliance on diesel by creating bi-fuel systems. These systems blend natural gas and diesel, but have not been very successful. It is thus desirable that a natural gas powered fracturing system be used in order to improve safety, save costs, and provide benefits to the environment over diesel powered systems.