

GasGun Update

July 22, 1998

This brief report gives some news about recent results of GasGun stimulations. It also describes the extent to which the Department of Energy will continue supporting the development of this exciting new technique.

Recent Results

In January, a GasGun stimulation of a Salt Sand formation in Pleasants County, West Virginia, produced significant improvements in gas production. The formation was at 1380' and was completed with a notched casing. Hydraulic fracturing in similar wells had not provided satisfactory results. The well was given a GasGun stimulation at noon and was back on production in the late afternoon of the same day. Prior to the GasGun shot, the well had been making **28 MCFPD**. Immediately following the shot production was logged at **50 MCFPD** and was still being sustained around **40 MCFPD** a week later.

In late May, three shallow (530') wells in Madison County, Illinois, responded well to GasGun stimulations. These wells were drilled in the 50's and originally shot with nitroglycerine. They were produced for a time and later plugged with cement. The cement was drilled out in the 80's and the wells were put on pumps. Some wells received some acid treatment, without much response. Some waste gases were injected into some wells and formation pressure was raised to 200 psi, but the wells would blow down very quickly. Each of the three wells produced about **1 BOPD**. Two of the wells were perforated and one was open hole. All three wells were shot with the GasGun and are each now making **5 to 6 BOPD** plus some gas.

Our most exciting stimulation occurred in June on an open hole Rose Run sand at 4230' in Hocking County, Ohio. The well had been making **3 to 5 BOPD**, but initial flows when the well was drilled in February and logs suggested that this well should perform much better. There was evidence that the well had been damaged when it had been killed with 120 BBL of unfiltered brine. The well was stimulated with the GasGun and is now making **40 BOPD**.

Two shallow coal bed methane wells in Cambria County, Pennsylvania, were stimulated with the GasGun just last week. Significant improvements are being observed, but these improvements have not, as yet, been quantified. These wells are about 500' deep and were originally used to drain methane from a longwall coal mine. The wells were plugged with cement when the mine was abandoned. The cement was drilled out, but little gas flow was achieved. The cement is thought to have entered the coal seam fractures and acid has not been effective in reconnecting the gas to the wells. The GasGun appears to have succeeded in reaching out past the cement damage, and gas is now flowing.

Support from the Department of Energy

Demand for the GasGun has increased dramatically in recent weeks. Nine stimulations are scheduled for the week of July 20. Funds from the Department of Energy are limited, and free stimulations cannot be offered indefinitely. In the interest of fairness the following guidelines have been set.

Any company that had its first GasGun stimulation prior to July 1, 1998, will be limited to **three** GasGuns at no charge. Any company having its first stimulation after that date will be limited to **two**. Preferential treatment of the companies receiving early treatments is appropriate because they assumed greater risks at a time when the GasGun technology had not been well demonstrated. Also, the offer of free GasGuns is scheduled to expire for all companies on August 31, 1998. Of course, candidate wells to be considered for a free stimulation must still meet certain criteria, in keeping with the goals of the original program. In all cases the well owners must cover all wireline and service rig charges.

All other GasGun stimulations will be offered according to the attached price schedule.

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