

November 27, 1996

**NON-ROUTINE INCIDENT  
K. C. POWELL ET AL #1  
NOVEMBER 19-22, 1996**

**November 19, 1996**

In the course of drilling into a suspected Onondaga Reef, a strong flow of gas was encountered at the projected depth of 2,604' at approximately 12:45 PM. Just prior to drilling in at a depth of 2,590' the bit torqued up indicating a fractured formation. The strong flow began at the projected depth and the drilling was continued to a depth of 2619'. At this point it was considered to be too dangerous to continue drilling operations (1:15 PM) The gas flow became an oil mist and the blow-out preventer was activated. Pressure at the choke side rose to 250# (1:30 PM).

A pump truck standing by at Universal Well's yard was called out and arrived at 3:00 PM. three hundred barrels of good 10/5#/gal of salt water was available. Pumping down the drill pipe was commenced at 5:00 PM. The choke was opened on the annulus side and the fluid was flowed into a 240 barrel tank. Pump pressure was maintained at 100# and the rate was 3 barrel/minute. On the backside the choke pressure was held at 250#.

In spite of the good quality salt water and the use of a defoamer, the returned fluid was 50% gas and oil-cut foam and not suitable to be added to the kill fluid. Out of kill fluid, operations were ceased at 8:00 PM and the choke was shut in as the flow tank was full. Pressure on the backside rose to 350 # psi.

A salt base gel mud was ordered out of Emporium, PA. at 10:00 PM (80 sacks). Three hundred barrel more of 10.5 brine was ordered.

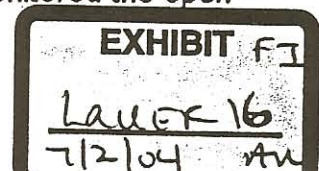
**November 20, 1996**

At daybreak a farmer reported a strong flow of gas from an unused 280' water well, 8,000' west of the drilling operation. Area fire trucks blocked Weaver Road and evacuated 12 residences as gas surfaced in several areas. The farmer with the 280' water well reported no gas from the well at 3:00 AM but reported a strong flow at 6:00 AM.

At the well site a second pit was dug and lined. The choke was opened to the flow tank. It was allowed to overflow into the new pit.

Universal began to mix the new brine with the gel and pump down the drill pipe at 10:00 AM. Pressure on the backside was held at 250#. Pump rate was held at 4 barrel/minute. Viscosity of the gel was 47 centipoise. Eight barrels of gel were returned to the surface at 12:10 PM. Fifteen more barrels were added at 3:00 PM. Another 2 barrels were added at 5:00 PM.

Operations were shut down for the day at 6:00 PM. Two men monitored the open choke line until daylight the next day.



## **November 21, 1996**

At daylight the pump crew added another 8 barrels of the brine/gel. The drilling crew pulled the drill pipe and the hole was kept loaded as the drill pipe was removed. It took 24 barrels to keep the hole loaded.

The 4-1/2" casing arrived at noon. It was run with a formation packer shoe, three cement baskets and eight centralizers. The packer was set at 2,535'. A ball was dropped and pump pressure sent the packer and opened the cementing ports. The cement was brought to the surface with 2 barrels of return (110 bbl of slurry). The cement level was monitored for 2 hours. It fell back about 20' in that time. Operations for the day were ceased at 7:00 PM.

## **November 22, 1996**

The level of the cement settled back to about 30' from the surface before the cement set. Water was added at that point to check for bubbles. There were none.

The drilling crew went to the farmers' barn where they vented the well to above the roof and into a field 200' away. The gas flow has continued to diminish day by day.

## **General Notes**

The well has 450' of 8-5/8" surface casing. It was cemented back to the surface with 4 barrels of return. The cement stayed at the surface until it set.

In addition to our own drilling crew of 4, Frank Stephen had 3 men on site, a Baker Toolman came up from West Virginia (drove all nite) and Universal Well Services had a pumper and crew at the well all three days (plus a TV camera crew part of one day).

Cooperation between the area volunteer fire departments, the Cattaraugus County disaster group and the Region 9 DEC people was outstanding. Their efforts kept this situation from becoming more serious.