



Evaluation of the Silver Hawg tools

In the

**Lacamango #107
Lacamango #117
and
Blasillo #386 Wells
*(Paraffin Inhibitor)***

This PEMEX document was retyped and converted to English by CIS

Contents

History of the Production of the Wells: Lacamango #107, #117 and Blasillo #386 Wells

Lacamango #107

The Lacamango #107 well's graph shows the history of production since January 1, 2003 through March 30, 2004. In 2003, we detected irregular behavior in the production because of the paraffin obstruction in the production tubing and the line of discharge.

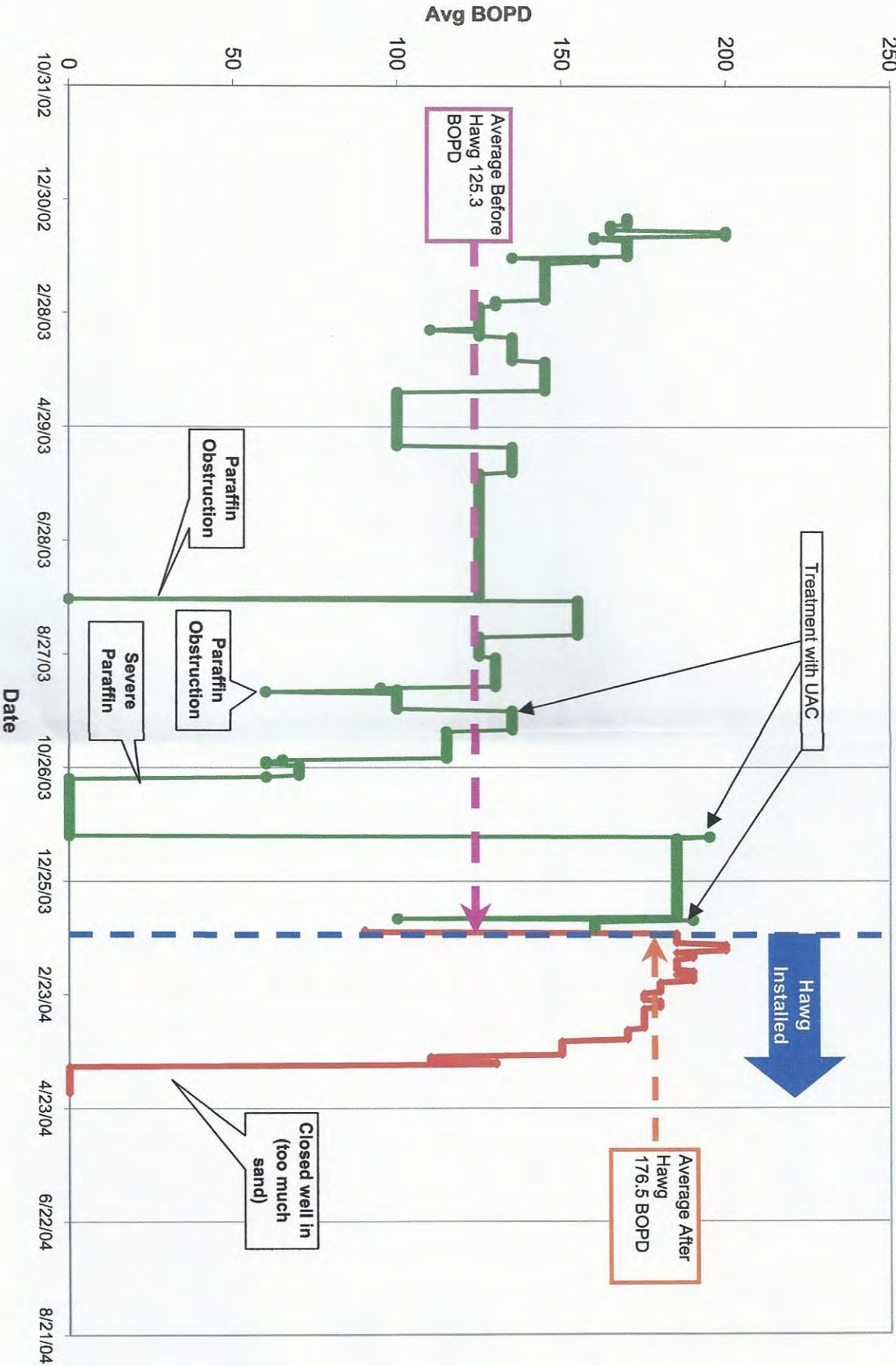
In November 2003, the problem with paraffin turned out to be so serious that the production went down to zero due to the obstruction of the line discharge. We had to repair it by removing the plugged section and replacing the pipe. The repair of the line took 18 days. The average of the production in 2003 was 125.3 bopd.

Since January 20, 2004, we installed a Silver Hawg tool in the production tubing and in the oil discharge line. Since then we have observed the behavior of the production of the oil has established an average of 176.5 bopd until March 30, 2004. At that time, the well had to be shut in for a sand clean out.

During the period of January 20 through March 20, 2004 (70 days) the well did not receive any treatments. Oil production increased by over 51 bopd during the test period. This confirms that the Silver Hawg tool is very efficient in the process of inhibiting paraffin.

"PEMEX showed a 51 bopd increase over a 70 day test period"

Pemex - Silver Hawg Test Lacamango #107 Well



Lacamango #117

The Lacamango #117 case, we observed a bigger problem because of the frequency of the paraffin obstruction in the well production system (TP and LDD), causing many number of interventions with hot oil, as well as loss of production.

The graphic also shows that besides the treatment with hot oil, the well received treatment with chemical injections. From November 6, 2003 through January 6, 2004, the behavior of the production shows the effect of the paraffin in the well production system. Before the tool installation, the average of the production was 133.1 bopd.

On January 12, 2004, we installed a Silver Hawg tool. Since that time we observed an increase in the production superior than before. After that, we observed that the production stabilized at an average production of 145.4 bopd. On May 14, 2004 an adjustment in the gas injection rate was made to increase production to over 175 bopd.

During the period of January 12 through May 31, 2004 (149 days), the well did not receive any treatments besides monthly cleaning of the Silver Hawg surface unit.

"PEMEX showed a 42 bopd increase over a 149 day test period"

Blasillo #386

On the enclosed graph of the history of production between February 2002 and May 2004, the production experienced irregular behavior with different periods of paraffin obstructions in the tubing and line of discharge. Hot oil treatments were required to remove the paraffin.

The severity of the paraffin problem increased over time. On November 1, 2003 through April 20, 2004 chemical injection treatments were required to keep the well in production. Even with the hot oil treatments and the continuous chemical injection, the well experienced 4 paraffin obstructions over the 4 month period. The average of production through March 25, 2004 was only 86.2 bopd.

The Silver Hawg tool was installed on March 25, 2004 and has been in use for 68 days. During this period we shut off the chemical treatments and have not had to perform hot oil treatments. The average production increased to 136.5 bopd during this 68 day period.

"PEMEX showed a 50 bopd increase over a 68 day test period"



Conclusion of the Silver Hawg Test

Based on the results obtained during the testing periods of the Silver Hawg tool, we concluded the following:

Before the installation of the Silver Hawg tool,

- * the production was diminishing over time
- * Hot oil treatments and chemical Injection was required to keep wells producing
- * Hot oil treatments and chemical Injection increased the cost of operations

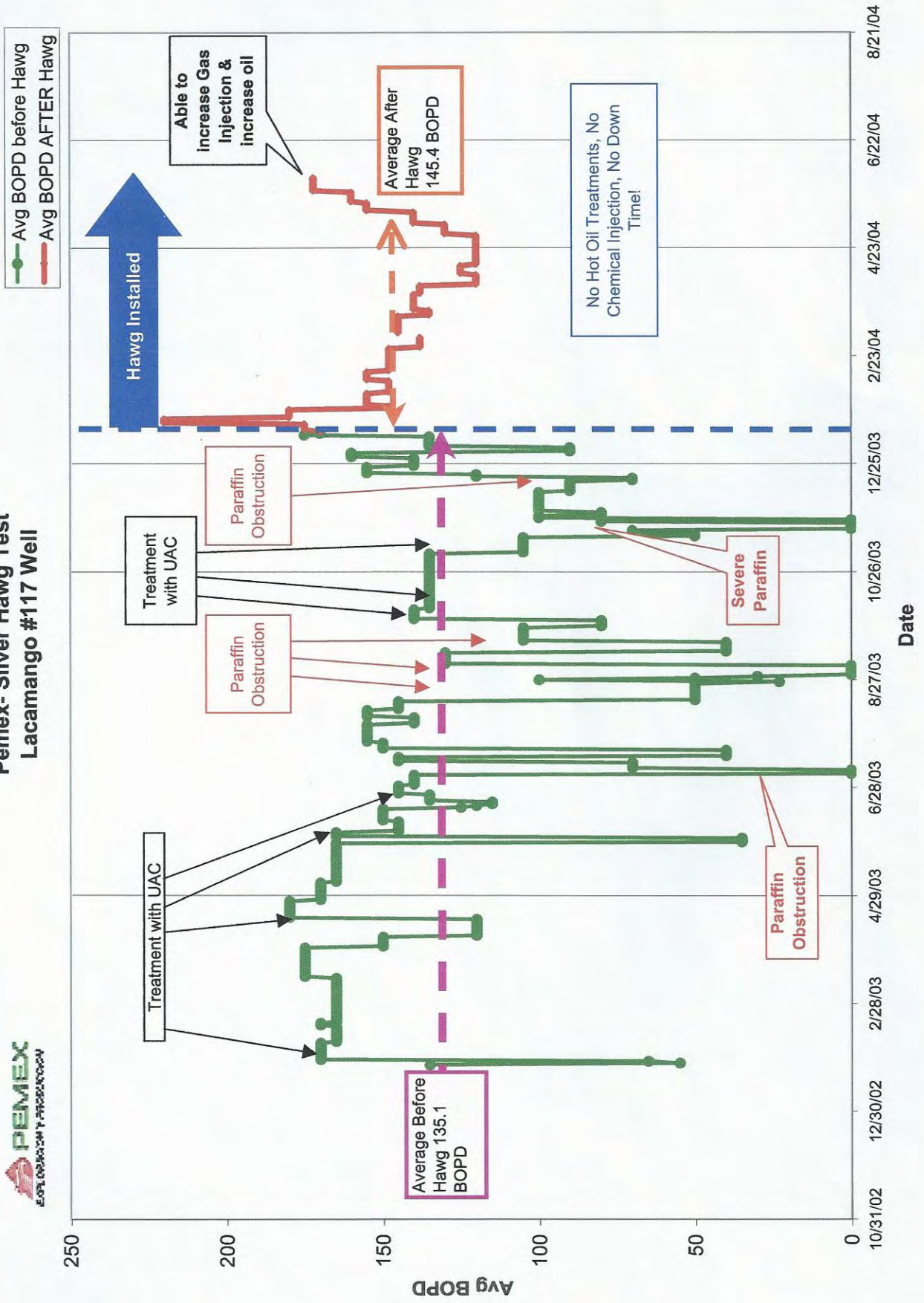
After the installation of the Silver Hawg tool,

- * Lacamango #107 showed an average production increase of 69 bopd
- * Lacamango #117 showed an average production increase of 12 bopd
- * Blasillo #386 showed an average production increase of 45 bopd

- * The Silver Hawg tool gives better fluid characteristics to each well
- * The Silver Hawg tool allows enhanced production control and optimization for gas injection
- * The Silver Hawg tool does not require external power, service, maintenance.
- * The wells did not require hot oil treatment and/or chemical injection after the installation of the Silver Hawg tool.
- * ***Represents an option for production optimization of wells that have paraffin problems!***



Pemex - Silver Hawg Test Lacamango #117 Well



Pemex - Silver Hawg Test
Blasillo #386 Well

