



THERMAL MELT

PARAFFIN REMOVAL TREATMENT

Performed By: H & M Precision Products, Inc.

Paraffin removal from the inside of your tubing on plunger lift, rod pumped and flowing producers presents a problem for many oil and gas producing wells. The application of the Thermal Melt process is ideal for production recovery in plunger lift and flowing producers with little to no downtime. Our proprietary process combines 3 individual products pumped into the affected system and paraffin is cleaned from the tubing. The three oil soluble compounds are pumped, utilizing our batch truck in alternating stages to provide a heated reaction from surface to bottom. Temperature developed from the reaction is 250 degrees F. Once the reaction is complete, the three compounds produce a type of breaker with degreasing capabilities that is beneficial for dispersing paraffin build up in the separator and flow lines.

The total product volume is 45-90 gallons, which allows your producer to unload this volume. Using hot oil stimulation, it would take 20 to 70 barrels to accomplish the task and could take several days to recover production.

H & M Precision Products has performed the Thermal Melt heat stimulation on hundreds of producers in the Dakota, Mesa Verde and Gallup formations in the 4-Corners region with a 95% success rate at dozens of operators (including Conoco, XTO, Energen, Enervest, Encana, Huntington Resources, Noble Energy).

Below are several cases where the Thermal Melt process was used successfully.

Case 1. In Largo Canyon, a customer was cutting paraffin with a wire line on a Mesa Verde flowing producer and had stuck the tools in dehydrated paraffin. After introducing a Thermal Melt treatment into the tubing, the customer was able to free up the tooling within 15 minutes.

Case 2. In the Angel Peak area, a Dakota rod producer had an abundance of paraffin which had balled inside the tubing while pulling rods. There was not a fluid level noted. H & M batch blended the Thermal Melt into the tubing. After 30 minutes the tubing was pulled to change the

perforated sub. In doing so, we had the opportunity to inspect the tubing for paraffin buildup. No paraffin buildup was found.

Case 3. Atop Hollis Pass, a Mesa Verde rod producer had noted balling paraffin while pulling rods. A hot oiler was not available and they decided to run the pump back into the tubing. After running 18 joints of rods back in, the tubing became plugged off with paraffin. They came out of the hole and went back in with a paraffin knife. Pounding on the paraffin plug resulted in three bent rods. H & M treated the tubing with the Thermal Melt process and then they started in with the knife and rods, as the customer wanted assurance that they were free of buildup in the tubing. No blockage was detected and when pulled, there was a thin sheen of oil noted on the rods.

Case 4. A plunger lift Dakota producer had the plunger stuck 1200' from the surface. Visually, paraffin was noted in the flow line and lubricator. The producer had 270 PSI on the casing and 0 PSI on the tubing. A bar stock was dropped and the well pressure was equalized which proved to be slightly successful. The bar stock would run in a matter of seconds with a decreased gas flow rate. This activity was continued for two days. H & M was then called in to perform a Thermal Melt treatment. The treatment was performed late in the day and the producer was allowed to sit overnight shut in. The following day the plunger would travel freely with correct timing and gas flow had increased to normal levels.

When changing out a well pump, the Thermal Melt treatment is introduced into tubing that has visible paraffin attached to rods to prevent new pumps from being plugged upon insertion in the tubing. This practice of treatment proves to be a cost-effective measure for preventing the pump from getting plugged up initially once back on line.

Follow-up Prevention:

The majority of these producers subsequently implemented a batch treatment program of one of H & M's Paraffin Solvents on a bi-weekly or monthly cycle. Pour points and cloud points are monitored for product effectiveness. The batch treatment utilizing a pump truck assures product placement without erratic and expensive continuous injection systems and eliminates chemical storage on the well location.

Contact us to discuss your problematic paraffin producers and institute a treatment program to reduce costly downtime and maintenance expense while improving production.

