Drying a pipeline can be as simple as running a criss-cross foam pig to remove the residual freestanding water or using a large series of brush pigs and swabs in order to remove all water molecules being held by rust and millscale. The following procedure is a general recommendation for drying pipelines for commissioning and should not be considered absolute.

For a starting point, we will begin after hydrostatic testing has been performed and we know a standard pig can traverse the line because we have used pigs to both fill and dewater the pipeline to prevent air lock. If it is not known that a pig can be ran, it is recommended to first use a light-density swab to prove the line for pigging. When retrieved from the line, the swab should be inspected before continuing with other pigs.

The first pig run is to remove the residual water from the line. This can be any standard cup pig, disc pig or foam pig. Most contractors use criss-criss foam pigs because of their flexibility, easy handling and low cost. This first run will remove anywhere from 85% to 95% of the water in the line. By repeating this step two to three times, all residual water will be removed from the pipe. The line is now considered dewatered, but not dry. It still contains water molecules trapped in rust, millscale, and other debris, and will need to be pigged further to reach negative dew points.

Before cleaning the rust and millscale from the line, it is recommended to run a series of swabs to remove any moisture from the air in the line. It is very important that from this point further, the propellant be dry. This can be nitrogen, super-heated dry air or ambient air. However, if using compressors that use ambient air, it is imperative to use filters to remove the moisture before introducing it into the line, otherwise pigging operations will be constantly replacing the moisture removed by the pigs with the moisture from the propellant.

At this stage, brush foam pigs and swabs are now used to begin cleaning and removing the rust and millscale. The brush pigs, (preferably a total wire pig, which has brushes covering the entire sealing surface), scrape the rust and millscale from the pipe wall and the swabs sweep the fine debris from the line. These pigs are run at speeds of 7 to 10 feet per second and in alternating groups: first, three brush pigs, then ten swabs. The total quantities of pigs depend on the length of the line, internal conditions, and the desired dew point. This stage is repeated until the brush pigs and swabs are retrieved with little difference in appearance than when they were launched. At some point during pigging, the pigs will be retrieved dust dry. At this point the pipeline is considered at 0° dew point. For negative dew points, pigging is continued.

The last stage of pigging involves running a medium-density bare pig for a final wipe down and sweep of the line. If at all possible, it is recommended to pig with nitrogen for this last run, in order to blanket the line and preserve the integrity until ready for product.

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