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LAREDO FOAM STICKS

LAREDO FOAM STICKS are special foam sticks that contain 100% active surfactants, friction reducer and foam stabilizer in water-soluble tubes. Natural gas bubbling through the water column and 100% active ingredients produces foam which can help remove water from watered up gas wells.

PRODUCT USES

LAREDO FOAM STICKS are primarily used to remove water from gas wells and increase gas production. This foaming action decreases the hydrostatic back-pressure which increases gas production that further enhances the foaming action until the well unloads. LAREDO FOAM STICKS can be used to remove condensate and water from gas condensate wells and flowing oil wells.

PRODUCT ADVANTAGES

LAREDO FOAM STICKS contain 100% active foamer in a water soluble tube that can produce up to four (4) times more foam than some other sticks on the market. The entire stick (tube, caps, and contents) are water-soluble. The sticks are shipped ready to use and will not dissolve while in cool dry storage.

LAREDO FOAM STICKS can develop stable foam in high temperature deep gas wells. Lab tests indicate that stable foam can be developed at 212°F and above. For extremely high temperature wells the formulation can be altered.

LAREDO FOAM STICKS are an economical way to remove water from gas wells without using expensive well service operations such as swabbing, jetting with coiled tubing, or installing artificial lift and siphon strings.

TREATMENT DETERMINATION & PROCEDURE FOR WATER REMOVAL

The number of LAREDO FOAM STICKS used is based on the volume of water above the perforations. Field test indicate that the best results were achieved by using a larger initial slug treatment of 1/8 to 1/4 percent by weight of LAREDO FOAM STICKS to water above the perforations. A treatment of 1/8 to 1/4 percent by weight would require .44 to .88 lb of stick per BBL of water.

LAREDO FOAM STICKS

LAREDO FOAM STICK	STICKS PER BBL (Natural Treatment)
JUNIOR (1 ¼" x 15")	½ to 1 stick per 1 BBL of water

NOTE: This amount is recommended for an initial slug treatment. In many cases, removing the top few hundred feet of fluid may be sufficient to allow the production of natural gas to blow out the remaining fluid in the well. To determine the optimum amount for periodic treatments you may choose to gradually reduce the initial treatment amount until the most economical point is reached. Periodic treatments with LAREDO FOAM STICKS may be necessary to prevent production decline due to the gradual water build-up. It is much easier to maintain gas production with regular insertion of LAREDO FOAM STICKS than it is to kick off a dead well. Gas bubbling through water is necessary to create foam. If a well is totally dead, GAS STICKS may be used in conjunction with LAREDO FOAM STICKS to provide agitation energy.

THE MOST COMMON PROCEDURE is to shut-in the well and drop sticks through a lubricator. Wait 30 minutes until sticks dissolve then slowly return well to normal production. Repeat procedure if or when it becomes necessary. FOR HIGH RATE WELLS (after sticks have dissolved) flow well at about 25% of pretreatment rate for 30 minutes or until foam reaches surface then return to normal production. FOR SHALLOW OR LOW RATE WELLS leave well flowing while dropping sticks.

The estimated hydrostatic back pressure reduction for each BBL of water removed (for various tubing sizes) is shown below:

2 3/8 INCH	100 PSI REDUCTION FOR 1 BBL OF WATER REMOVED
2 7/8 INCH	75 PSI REDUCTION FOR 1 BBL OF WATER REMOVED
3 ½ INCH	50 PSI REDUCTION FOR 1 BBL OF WATER REMOVED

PRODUCT SPECIFICATIONS

The stick will normally dissolve in 30 to 90 minutes depending on temperature, salt content, and relative water motion. The melting point of the sticks is 145°F. The stick will dissolve in water in wells with BHT below 145° (just at a slower rate). Lab tests indicate (tube & contents) will dissolve in 90 minutes @ 100°, 62 minutes @ 120°, 45 minutes @ 140°, and 30 minutes @ 180°. The specific gravity is 1.16. The falling rate through fresh water is approximately 100 feet per minute. The sticks can free fall (through air) 3,000 feet in about 15 seconds. Gas moving up tubing will often change falling characteristics.

PRODUCT PACKAGING

LAREDO FOAM STICK (1 ¼" X 15")	Case/Toolbox (36 sticks)	Chest (72 sticks)
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CAUTION: As with all industrial chemicals, contact with eyes or skin should be avoided. Wash thoroughly with water. Sticks should be stored in a cool dry place. Read MSDS sheet before using.

DISCLAIMER OF LIABILITY

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