

## The Hydrofrac Business



**by Sean Kyle**  
**Vice President,**  
**Kyle Equipment Co., Inc. and**  
**Northeast Water Production, Inc.**

As we continue to dive into what water well hydrofracking is, and more importantly what it isn't, I'm going to take the next couple articles to discuss the use of chemicals and propping agents.

### Chemicals and Water Well Hydrofracking

In the vast majority of cases where water well hydrofracking has occurred, the only chemical added to the fresh injection water is chlorine. There are, however, some cases where additional chemicals may be added to fight biofouling in the well. Before we get started, it is important to note we aren't talking about

using toxic chemicals; the chemicals we use are manufactured specifically for use in drinking water systems (more information below) and are also specifically designed to treat a particular problem, such as iron or manganese.

The majority of the wells we chemically treated were large-volume commercial wells with major biofouling problems, typically iron algae. What we see when we go into these wells is a thick coat of iron algae on the drop pipe and wall of the well. We attach a special jetting head (we made) to the casing and pull the pump up through it. This jetting head essentially power washes the pipe and removes the built-up algae as we pull it from the well. Once the pump has been removed, we go in and high-pressure jet the well. This removes the built-up algae from the wall of the well. We will continuously jet the well until our return water has cleared up, letting us know we have fully cleaned the wall of the bore.

At this point, we set our tools up in a straddle assembly (zone-isolation hydrofracking) and lower them into the well. We then mix our chemical with our injection water. In this situation we use a chemical designed to treat iron algae. The mixture of chemical to water, contact time, and method of pumping changes

with each well, but the general idea is to make sure the entire well bore has been treated. It is also important to make sure the treatment has extended out into the formation (which is why we use the zone-isolation method) as the algae does buildup in the fractures themselves.

After each zone, we will collect and neutralize the return water and after the job is complete, we neutralize the well using a simple soda ash. The pump is then placed back in the well.

It is important you not only use the correct chemical for the problem, but also use a chemical designed for use in a drinking water supply. There are several companies in the water well industry which manufacture chemicals specifically designed for use in drinking water sources.

If you are unsure if the chemical you are going to use is safe for drinking water sources, don't use it. All chemicals designed for use in drinking water sources will be stamped "NSF/ANSI 60". This will let you know the chemical is rated safe for use in drinking water supplies.

As you can see, when we do use a chemical in water well hydrofracking, it is to treat a specific problem, and we

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