

### Challenges

A major Tube & Pipe manufacturer was having a number of issues with the process of cleaning steel strip prior to forming pipe. Key improvement areas desired by the customer included:

- Cleaner sheet in order to lower the temperature at the galvanized pot
- SOP & training for control of the production line
- Reduce concentration of cleaner
- Reduce redeposition of dirt on sheet. Currently needs higher pot temperature to burn off contaminants.
- Reduce total contaminants after cleaning sheet due to poor rinse
- Eliminate smoke due to clean sheet
- Require system service on a regular basis

### Product Description

QUAKERCLEAN® LFE is a liquid alkaline cleaner, designed to remove a variety of soils from ferrous surfaces. It has been used extensively in the Tube & Pipe industry to clean strip and pipe prior to galvanizing. This product will also effectively remove oil and grease from automotive and locomotive parts.

### Providing Solutions

Quaker introduced their QUAKERCLEAN® LFE product, which has been used extensively in the Tube and Pipe industry to clean strip and pipe prior to galvanizing. Although this product was 20% more expensive than the incumbent product, the customer was able to obtain a number of hard and soft cost savings improvements and benefits that outweigh the product cost:

#### Operating Parameters

- Steel strip cleaning prior to forming pipe
- Bath temperature - 170°F
- Spray cleaner pressure at tip – 125 PSI
- Spray pressure at “high pressure rinse” – 1,000 PSI

Base Line Performance	New Performance
Dirty sheet – High energy cost	Clean sheet – resulting in lower pot temperatures needed – energy savings
Temp of galvanize pot @ 1175°F	Temperature of galvanize pot @ 1050°F – reduction in energy cost
No SOP or operator training	Quaker provided SOP and training for all operators. Reduced out-of-spec pipe.
7% concentration	5% concentration (28.5% reduction in consumption) resulting in \$35,000 savings in product usage cost
Poor rinse due to no or little overflow	Quaker PE designed a new spray system and overflow requirements – increased uptime and reduced service requirements
Heavy smoke	Greatly reduced smoke. Employee satisfaction and morale improved.
No or little service existing	Planned periodic service by Quaker TSS relieves the customer of the service function and increases uptime.

### Product & Process Expertise

Quaker is a worldwide developer, producer and marketer of custom formulated Tube & Pipe process chemicals and coatings. From first coil to final cut, Quaker is capable of providing process chemicals for all operations in ERW and Seamless mills, and delivers the in-depth process expertise to help maximize your productivity.

Quaker's product line includes hydraulic lubricants, high-temperature greases, cleaners, forming & sizing coolants, drawing & forming compounds, sawing lubricants, hydrotesting compounds, corrosion preventives and a complete line of high-value coatings (including solvent, water-based and UV coatings).