

South Arkansas Case History



Overview

South Arkansas is home to the world's largest natural underground bromine deposit. Bromine is a highly corrosive, reddish-brown liquid that is a key ingredient in products such as fire retardant additives, pesticides, dyes, disinfectants and water treatment compounds. Commercial recovery from the Arkansas field accounts for approximately 97% of US bromine production and over 40% of the world's production.

Bromine production begins with the use of underground wells to bring the bromine-laden brine to the surface. This brine solution, typically rising to the surface at a temperature of 200°F or hotter, is then pumped to a processing refinery which concentrates and refines the bromine. Elemental bromine occurs in the extracted brine at a concentration of approximately 1.5 pounds of bromine per barrel of brine.

Transport of the brine solution from wells to the refining plant has been one of the most challenging aspects of bromine production. Due to the high chlorides content and warm temperature of the fluid, metallic line piping experienced frequent failures. Beginning in the 1970's, bromine producers experimented with the use of alternate piping materials to handle this demanding service. The material that worked best was glass-reinforced epoxy piping (GRE) introduced to the market by Smith Fiberglass Products of Little Rock, now a member of the Fiber Glass Systems operating group. Beginning in the late 1980's, the South Arkansas bromine producers began the process of replacing all of the steel line piping with GRE. Well over 90% of the installed composite line piping is FGS Green Thread.

In this service, Green Thread pipe and fittings have established a highly successful track record, with over 20 miles of installed piping and zero failures related to corrosion, product deterioration or quality issues.

Green Thread piping products have proven to be the "right answer" for bromine producers looking for cost effective, long lasting and easily installed products to handle this difficult application.

In addition to offering years of corrosion free service, the Green Thread product line offered the advantage of easy installation and product handling in the challenging hilly and swampy terrains of South Arkansas. With its matched taper adhesive bonding system, Green Thread pipe can be rapidly joined in the field, achieving almost immediate joint "lock-up" and allowing the joining of up to several hundred feet of pipe in the right of way to subsequently be dragged into the ditch. This ease of installation contributed to the widespread acceptance of the Green Thread product line in South Arkansas.

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