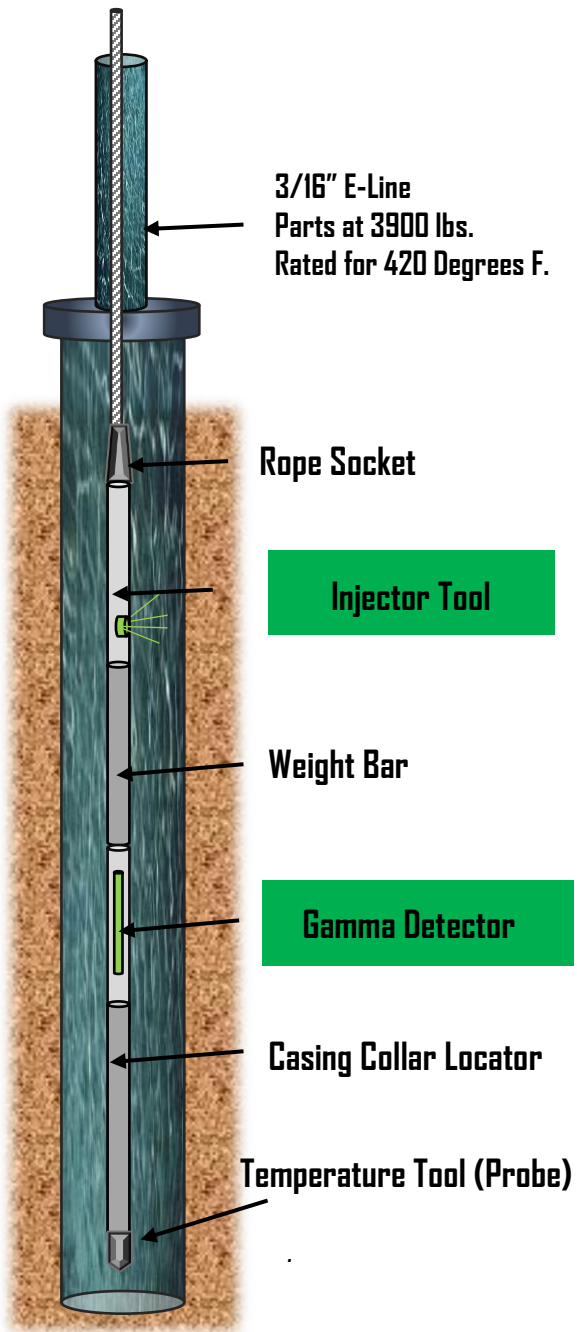


Our Tools:



About Us:

FIRST Energy Service is a wireline services company located in Bakersfield, CA. FIRST Energy opened their doors in 1996 with 3 trucks. In 2023 FIRST Energy runs a fleet of 7 trucks and is progressively expanding. The FIRST Energy service family is constantly growing yet obtains solidarity due to the care shown to each individual employee. Safety is important to us, so working under the highest safety standards according to the customers and our guidelines is highest priority. From management to our entry level workers we are instilled with the importance of our customer's time and business.

Welcome to the FIRST Energy Service family and we are excited to be working with you.

Contact us:

1031 Carrier Parkway Avenue

Bakersfield, CA 93308

(661) 387-1972



Water Injection
Surveys

Water Injection Survey

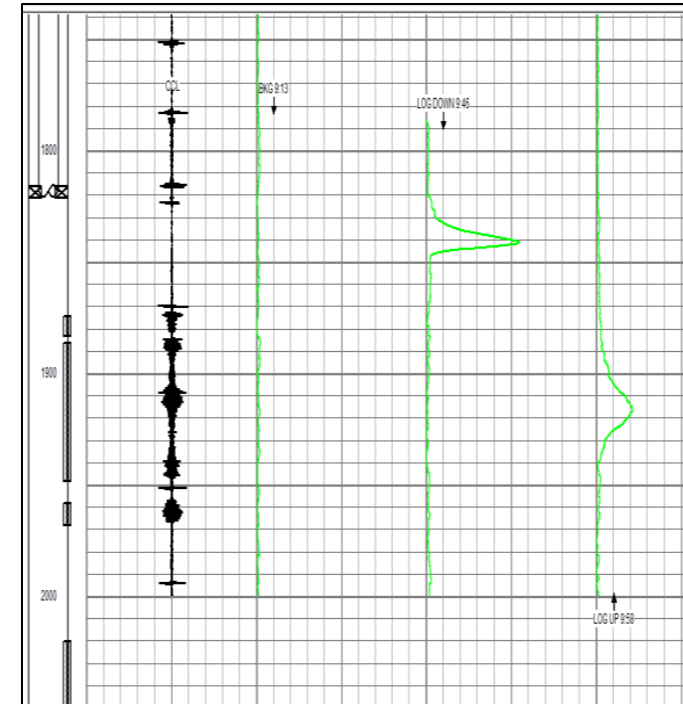
Procedure:

Profiling a water well is accomplished by running a temperature and background survey over the required interval. A break in the temperature/delta temperature profile often indicates loss of fluid and or -Q- flow. Depending on well structure, I-131 tracer is then shot into the well at surface or with the injector tool. Transit time is measured from point of injection and gamma detector. The transit time among other factors (i.e. casing factor and distance) will determine water rate (BWPD). Additional rate checks are done by moving the tool to new depths.

Migration and Leakage of water moving up behind the casing or into the annulus is checked by placing detector at required depth above the point of interest (i.e. packer, top perforation, and or tubing/casing hole). A shot of tracer from surface or injector then passes detector tool. A secondary peak of tracer often indicates that tracer is moving up in annulus or upward migration behind the casing.

Radioactive Tracers:

ISOTOPE	FORM	HALF-LIFE (DECAYS 50%)
IODINE 131	LIQUID	8.1 DAYS



Summary:

- Determine which perforations or perforated intervals are taking water. Find ineffective perforations, perforations below -Q- flow or fill.
- Determine how much water exits each perforation and perforated interval. Measured in percent (%) and barrels of water per day (BWPD).
- Find -Q- Flow or determine if any water moves down below pickup depth (stop depth).
- Find packer leaks. Find migration behind pipe or movement in annulus. Find holes and leaking collars within the tubing or casing.

