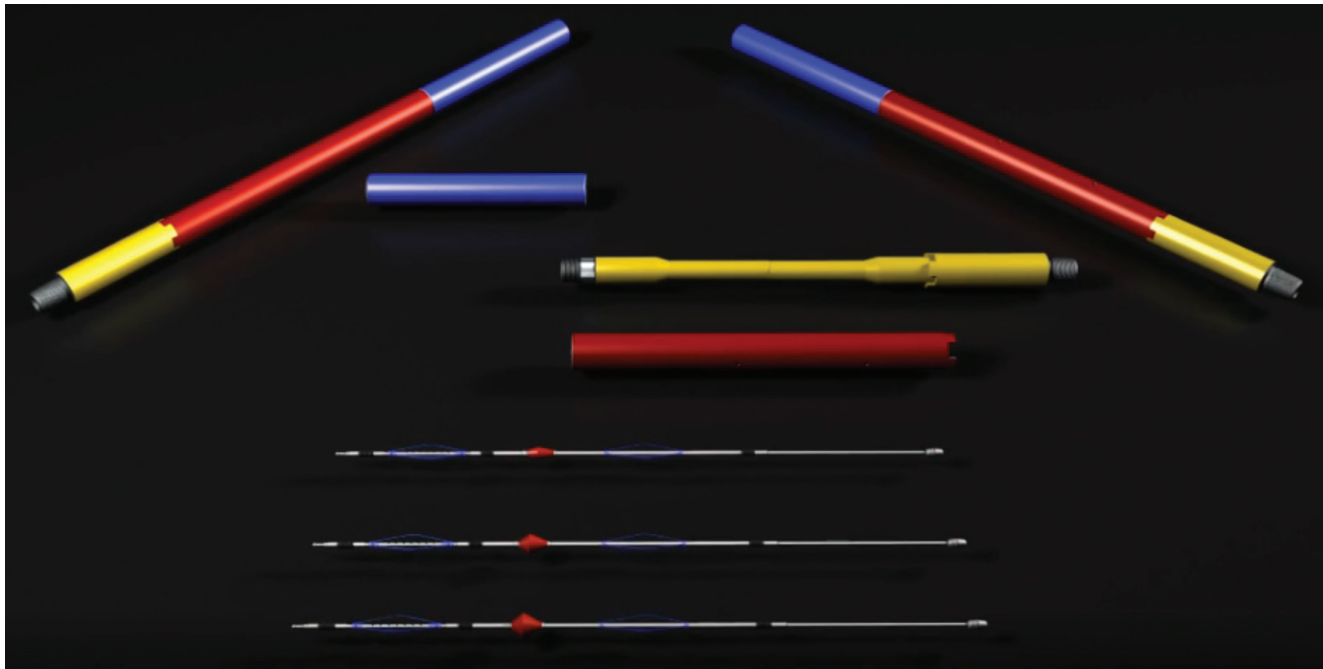


# Wireless Pipe Recovery System



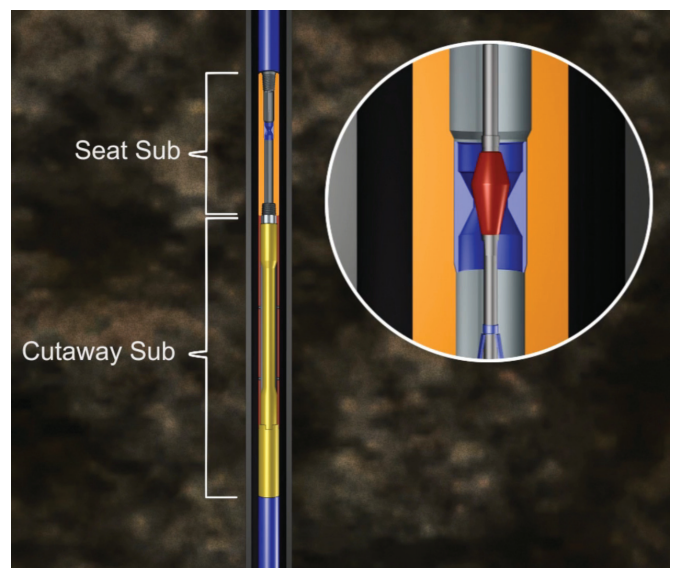
## Description

The patented Wireless Pipe Recovery System (WIPR), created by Warrior Energy Services, a Superior Energy Services company, can resolve stuck pipe and other difficult downhole situations without an electric line unit; without a working rotary or tongs; without pressure control equipment; and without pulling mangled pipe through the casing to the surface.

In any stuck pipe situation time is crucial. The longer the pipe stays stuck, the worse the situation gets and the greater the likelihood that a large part of the hole and expensive downhole equipment will be lost. A rig involved in pipe recovery operations means potential losses of up to a million dollars a day. With WIPR, a stuck pipe situation can be resolved in hours rather than days, saving the operator considerable money.

## Applications

WIPR is designed mainly for drilling operations — especially those operating offshore — but completion and plugging applications for the tool have been found, too. The tool can save a lot of rig time in deepwater plug and abandonment (P&A) operations, as well as on sidetrack jobs, replacing electric line equipment totally in many of these situations.



# Wireless Pipe Recovery System

## How It Works

The system is based on a series (usually three) of decreasing diameter profiles installed in the drill string in strategic locations as the pipe is run in the hole. The system then uses a drop assembly featuring a pressure activated firing head to land in a specified seat and jet cut a designed sacrificial sub positioned just below the installed seat.

A 7 ft drop assembly is dropped or pumped down the wellbore and the pipe can be cut in a matter of hours. All required equipment is stored on the rig so the only thing missing to start operations is a technician. Technicians are available to be flown to a location as needed or stationed on the job site if difficult drilling conditions are expected.

The design of the system requires that the drop assembly must be at the desired seat before the firing head can be activated by applying the predetermined firing pressure. The system also provides a convenient wireless method and a location to set plugs in a designed space in the drill string in the event of unexpected drilling situations.

The firing head is designed so that drilling fluid or cement can be pumped through it while it is still on the seat to facilitate lower zone abandonment after cutting the pipe without having to make a pipe trip. This feature offers great financial savings on deepwater plug and abandonment operations where saving a pipe trip means big cost reductions.

## Features and Benefits

- Saves time and money in stuck pipe situations
- System can deliver plugs, perforating guns, hole punchers and severing tools independent of electric line equipment
- The firing head has been designed to allow fluid passage after firing
- Delivers memory logging tools that can be run over predetermined intervals without requiring any pressure control
- May be used in completion operations as a “get-away” device to replace a right-hand or other release
- The equipment requires a single operator to run
- Very little can go wrong with WIPR, as opposed to other systems that can actually make a stuck pipe situation worse

## Specifications

- Available in various sizes from 4 in to 9 in
- The complete downhole assembly is delivered to the rig in 30 ft sections, pre-torqued to rig pipe specs with rig pipe threads
- Rated to 25,000 psi, with 30,000 psi available in early 2012
- Temperature rating to 450° F

