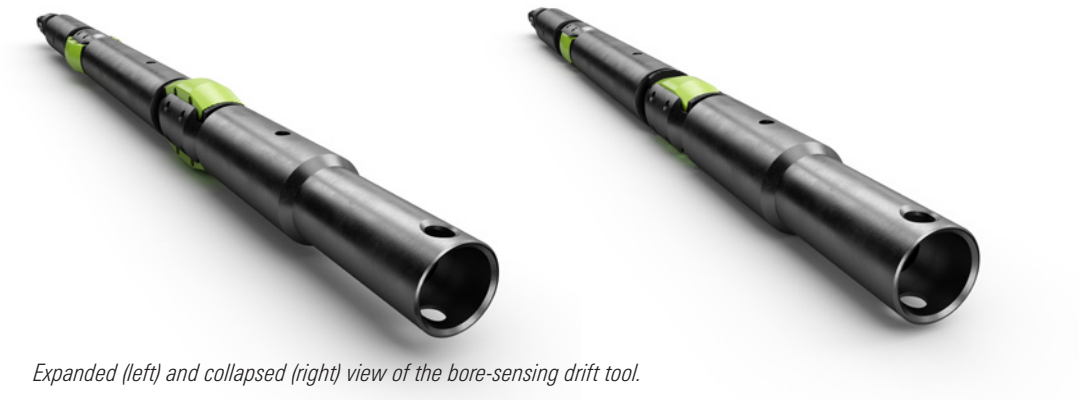
Remote Intervention Operation Enables Effective Planning of Plug and Abandonment Campaign

Collapsible bore-sensing drift tool determines minimum depth restriction in a single trip

An operator offshore Thailand used the bore-sensing drift tool by Peak Well Systems, a Schlumberger company, to determine the minimum restriction within the completion for plug and abandonment operations, reducing the number of slickline runs compared with conventional methods.



Expanded (left) and collapsed (right) view of the bore-sensing drift tool.

Determine minimum restriction for intervention operations

An operator needed to prepare noncommercial wells on remote wellhead platforms for plug and abandonment prior to rig deployment. The preparation work involved determining the minimum restriction from surface to target depth through which a permanent plug and other intervention tools could access. To do this, the operator ran several different sizes of gauge cutters to determine the target depth; however, the operation required multiple slickline runs, taking an entire shift.

The operator sought Peak Well Systems to quickly design a cost-effective collapsible drift tool to record the minimum ID within the production tubing string and reduce the number of slickline runs.

Design fit-for-purpose collapsible drift tool

Peak Well Systems collaborated with the operator to design an intervention tool specifically suited to the well conditions and remote location. The drift tool design needed to enable deployment on slickline in high-temperature wells, pass through a restriction with minimal jarring, and accommodate well deviations of up to 65°. It was important to design bore-sensing keys that could withstand the weight of the slickline toolstring in high deviations without retracting, as well as collapse and pass any restriction using only the limited downward force of the toolstring.

To meet these requirements, Peak Well Systems designed a bore-sensing drift tool with four keys that collapse at each section of the well where the ID of the completion tubing is smaller than the key diameter. Once collapsed inward, the keys are held in the collapsed position by a ratchet mechanism.

Complete intervention operation in a single run

The operator was able to determine the minimum restriction in the completion tubing—and in a single trip. This saved considerable time compared with the previous method and reduced the possibility of a fish due to running less wire in the hole.

> **"The trial of Peak Well Systems' bore-sensing drift tool was quite impressive and met all our objectives."**
>
> Completions Engineer

Knowing the minimum restriction in the well enabled the operator to effectively plan the plug and abandonment campaign and minimize risk. The operator trialed the drift tool in a 12-well trial campaign in various well conditions and plans to extend the trial to 22 wells in total.