

VR90® service shows clear solution to stuck tubing

Assessment of top of a twisted-off tubing section facilitates efficient fishing recovery.

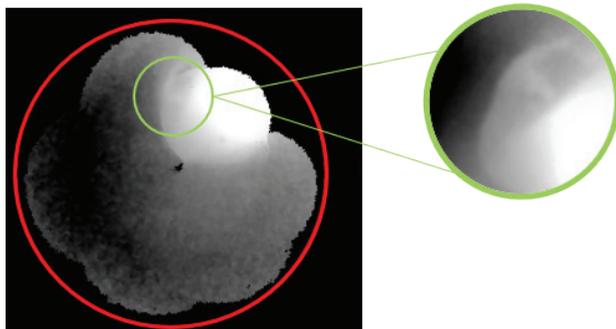
THE CHALLENGE

A Permian Basin operator was removing tubing string from a producing well when a section of the tubing became stuck in a known tight spot in the casing. Multiple remediation efforts were made, including washover, milling, and pulling, but a section of the pipe was twisted off during the process. The operator was unable to pass additional tooling through this section, and they wanted to know specifically if the obstruction encountered was due to twisted-off tubing or collapsed casing.

OUR SOLUTION

Visuray ran the VR90 downhole X-ray diagnostic service to examine the obstruction, which was revealed to be the twisted-off tubing. The real-time results also provided key information about the size, position, and condition of the tubing top.

The image below is a 2D X-ray image taken by the VR90 tool, with a zoomed-in inset of the ragged edge detail on the tubing top. On the next page, the image on the left is a false-color representation of the tubing top. The colors have been used to highlight the shape of the tubing; red areas correspond to parts of the tubing sticking up, while green to blue areas correspond to parts of the tubing deeper in the well. The client was able to see immediately that the tubing top lay towards the high side of the well. It also showed that the tubing top was thoroughly mangled, and crucially, that a section of the tubing had folded over.



OVERVIEW

CLIENT:

- Large operator, Permian Basin

CHALLENGE:

- Identify obstruction as stuck tubing or casing collapse
- Determine tubing position, shape, and condition

SOLUTION:

- Used VR90 downhole X-ray diagnostic service to image obstruction; top of tubing
- Real-time images revealed severe tubing damage and position of tubing top
- Accurate diagnosis and recommendations led to quick, successful fishing

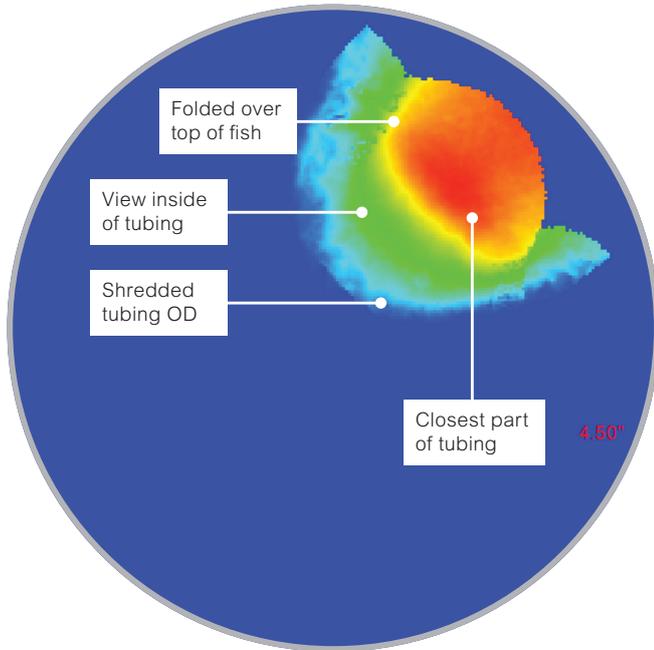
BENEFITS:

- Informed intervention planning through precise measurement of tubing dimensions and accurate assessment of condition
- Averted cost and risk of rig time and non-productive operations
- Quick and reliable answers without need to prepare well by cleaning or circulating

CASE STUDY

Client: Large operator, Permian Basin

Based upon this diagnosis, Visuray engineers recommended a fishing strategy to retrieve the tubing, including specifying a particular type of grapple to grab the fish. The operator and fishing company followed Visuray’s suggestion and successfully fished the tubing the next day. The image below on the right shows a photograph of the retrieved tubing. The mangled, crushed, and folded top of the tubing are a match with the VR90 tool results.



CLIENT BENEFIT

The X-rays from the VR90 tool cut through the dirty, oily well fluids without any costly or time-consuming circulation of the well. The VR90 tool’s resulting images produced an accurate diagnosis and clear recommended course-of-action, leading the client to retrieve the tubing in the first attempt, and allowing the workover operation to resume. By running the VR90 service and following Visuray’s recommendation, the client dealt with the parted tubing efficiently and cost-effectively.



ACCURATE. MEASURABLE. RECOGNIZABLE.

Well intervention decisions are not easy to make. The Visuray® VR90® tool offers a new commercial wireline diagnostic service that uses ground-breaking X-ray technology to give you downhole images in any well production fluid – allowing you to see with certainty and act with confidence.

Visit visuray.com/case-studies for examples.