Wellbore Diagnostics: Things I Thought I Knew!

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- Mechanical inspections post frac

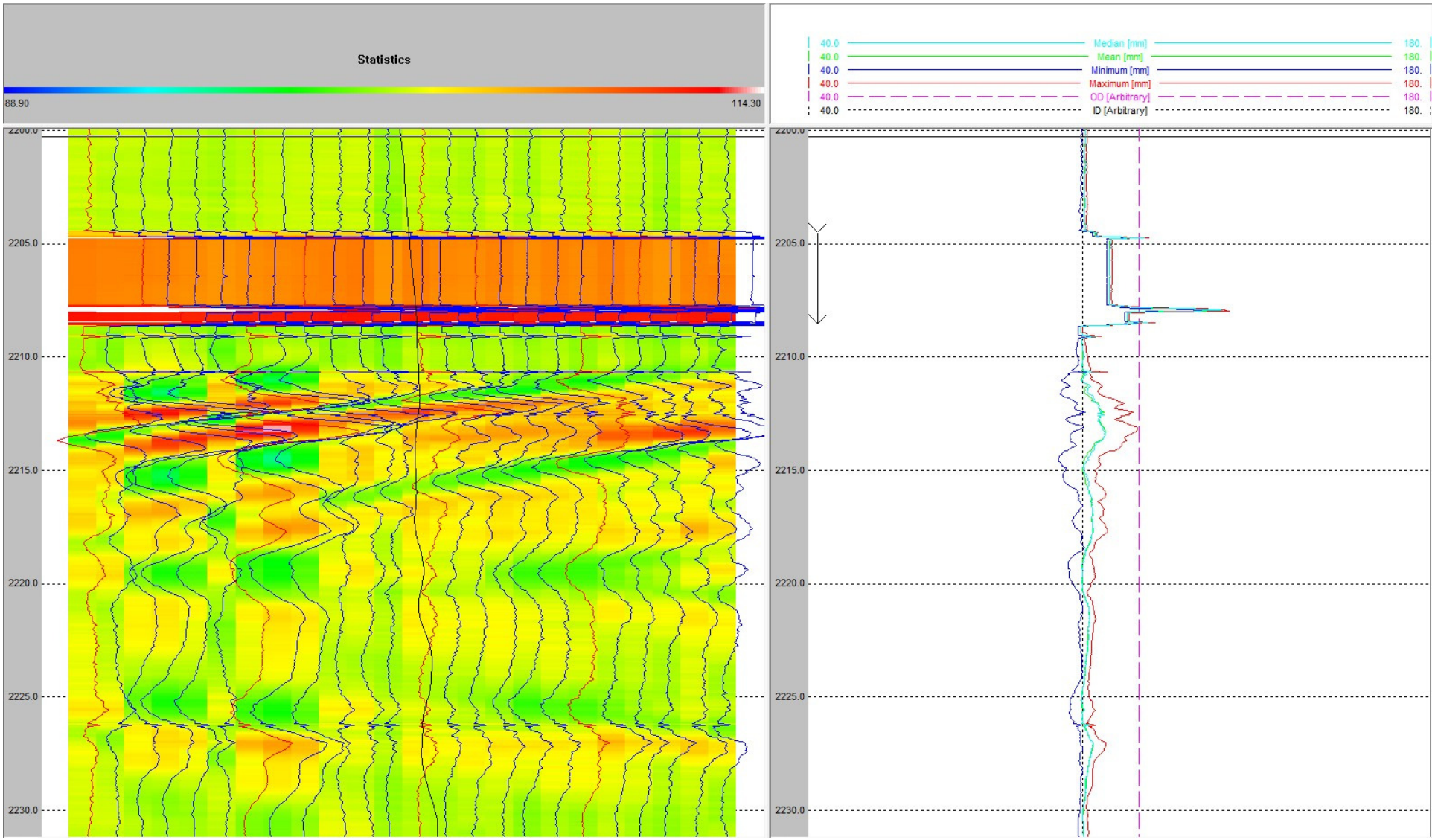
Case History: Casing Inspection

The customer deployed a camera on coil when there was an obstruction encountered when deploying the coil to do a cleanout on a well post frac on a port system.
The conventional coil was not able to get to bottom as it kept frictioning off. After cycling the coil multiple times they were getting concerned when previous runs had been able to get to bottom with larger BHA's

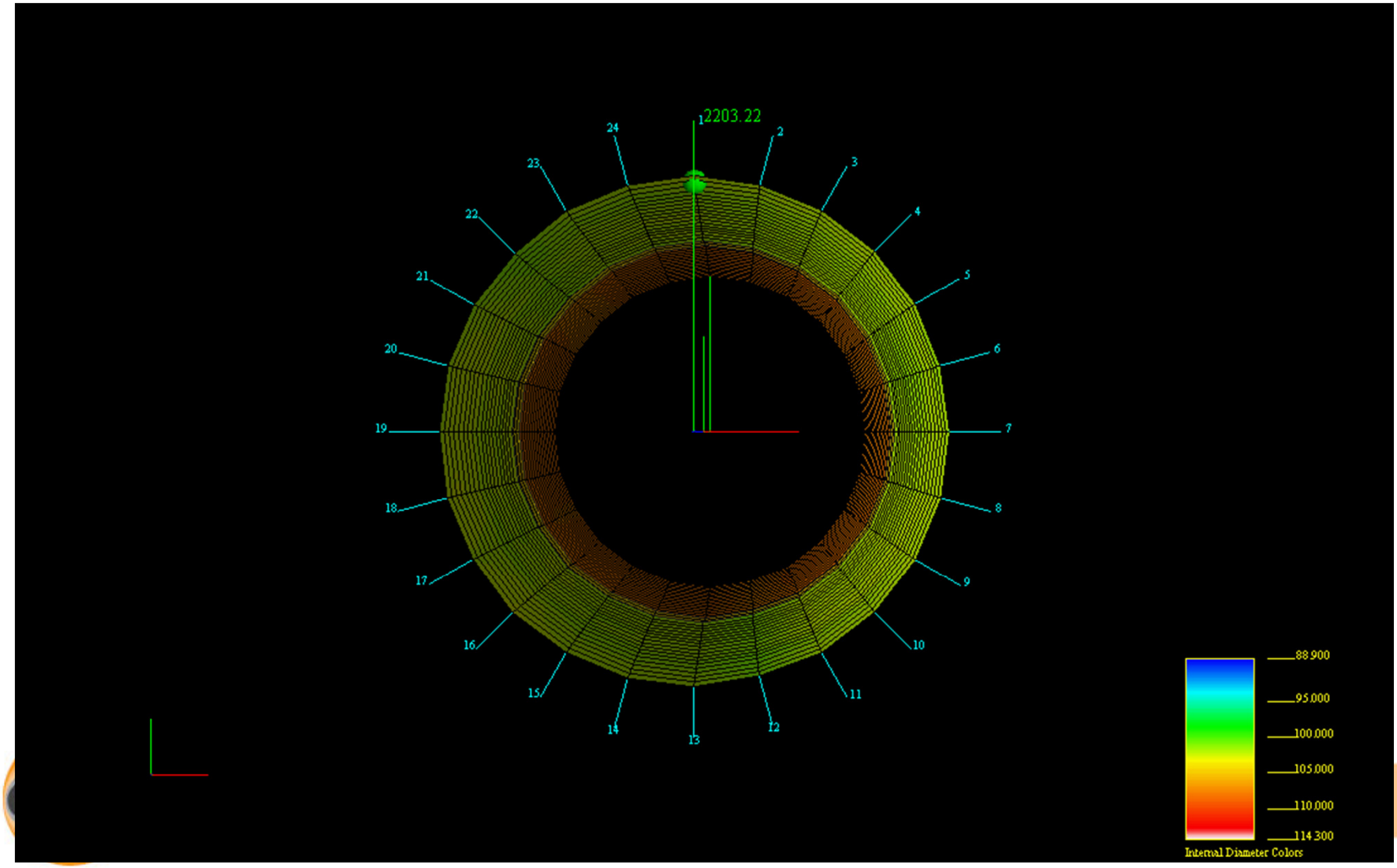
Case History: Casing Inspection

It was was determined that an IVC – Integrated Video/Caliper tools were to be run together with the camera seeing very little damage other than sand and some S-bends.
The caliper was able to show some small internal damage on the centralized data. It was not until the data was uncentralized that the true story appeared!

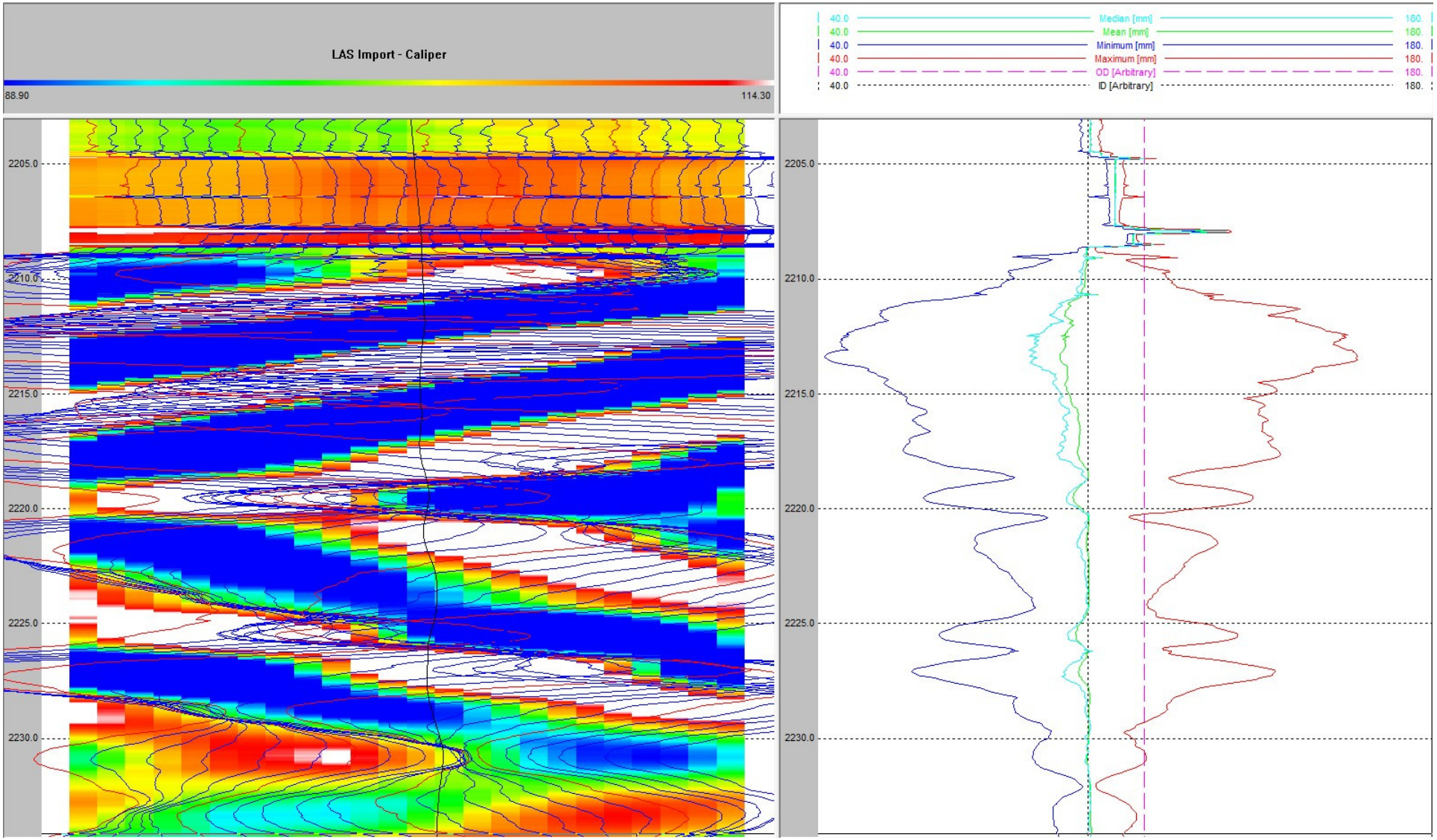
Case History: Casing Inspection- Centralized Data



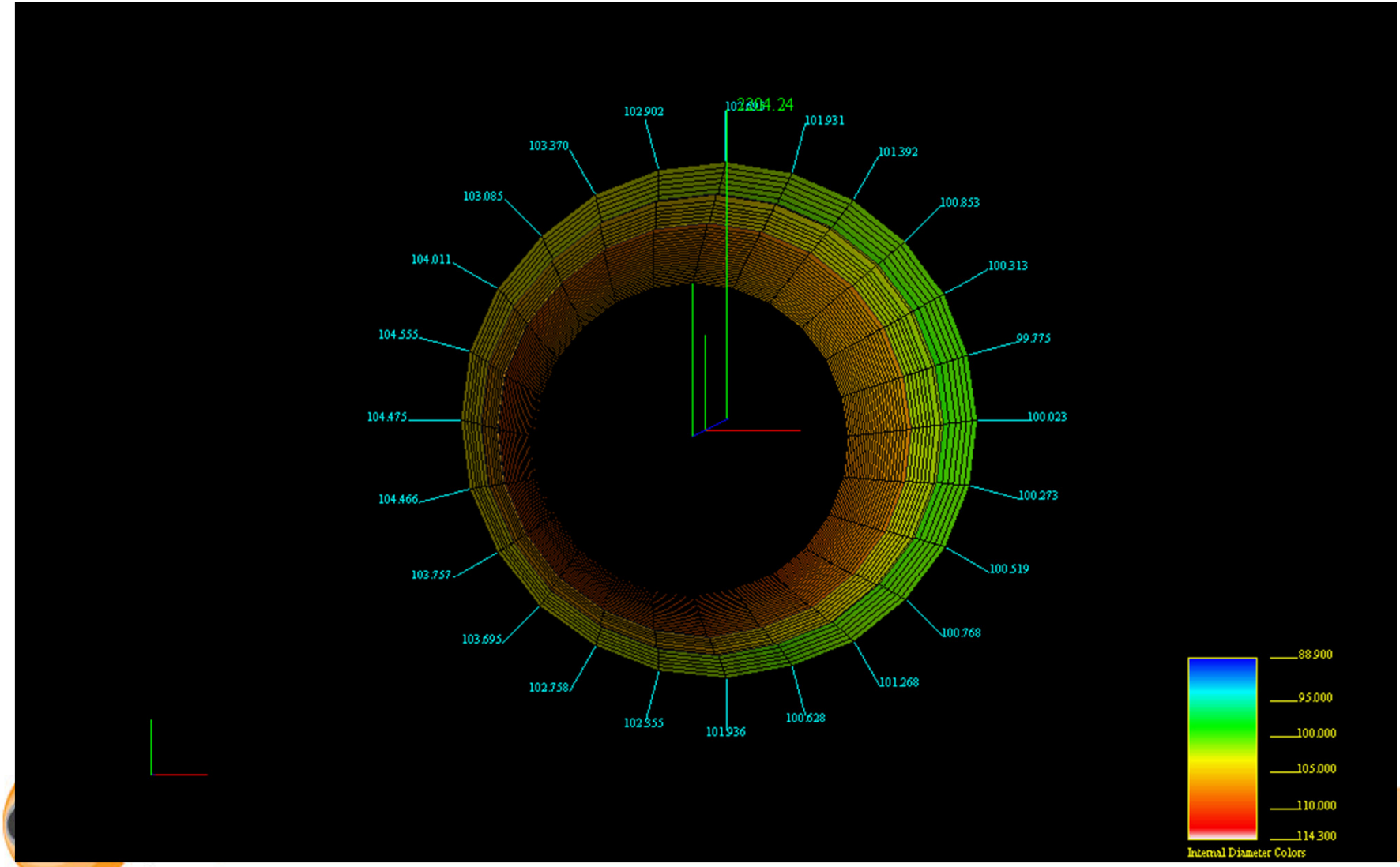
Case History: Casing Inspection- Centralized Data



Case History: Casing Inspection – Uncentralized data



Case History: Casing Inspection – Uncentralized data



Case History: Casing Inspection for Multiple Obstructions

Conclusion:
The caliper data was analyzed with Epidote's PDA analysis to show that the best tool to get to bottom was an 88mm BHA with no more than 6m of rigid body spaced out at the top with 73mm jars! This saved the customer extra runs in the hole and they were able to pass the S-bends to mill out the ports below.

Case History: Camera Inspection for Multiple Obstructions

The customer called out the IVC – Integrated Video/Caliper to investigate why the coil was being held up during a routine post frac cleanout. The coil was sitting down hard throughout the interval.

The camera was able to see multiple areas of sand deposition and buildup so it was determined that the caliper was not needed to investigate further since the sand would affect the caliper readings substantially.

Case History: Camera Inspection for Multiple Obstructions

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Conclusion:

The camera was able determine that the issue was heavily packed sand that was dehydrated from the Nitrofied frac/Friction reducers and other chemicals. The calcified sand was able to be removed with chisels and jars and the coil was able to proceed to the bottom to finish the cleanout procedure. No mechanical issues were found thankfully!

Case History: Leak detection post frac

The customer requested the IVC – Integrated Video Caliper tool to log and define the area of interest due to a sudden pressure loss during a frac treatment.

The IVC was deployed on E-coil and the camera logged the area of interest while logging down. The area was located and the sideview camera was used to rotate through the break. The caliper was logged above and below the casing anomaly and streamed in to the customer for real time analysis.

Case History: Leak detection post frac

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Conclusion:

The camera was able to identify the issue within the collar as a full circumferential part. The caliper was able to define the existence of a buckling issue along with the break in the casing.

The customer elected to set a Bridge Plug above this zone and continue fracking the upper 4 zones once everything pressure tested. The ports were all milled out and a patch was set to isolate the breech.

Thank you for your time!

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