INSIDE LOOK: MMT'S HSD REPORTING

FOR SEAM WELD IDENTIFICATION

BACKGROUND

Correctly identifying weld seams is a critical step in accurately and reliably managing asset integrity. MMT's HSD Tester can identify all known seam types, including submerged-arc-welded (SAW), flash-welded, lap-welded, electric-resistance-welded (ERW), and seamless pipes. HSD further determines low frequency (LF) or high frequency (HF) manufacturing processes for ERW seams and whether an effective post-weld-heat-treatment was applied.

In this weld analysis, an incident at a pipe joint necessitated further material testing. After testing the incident pipe sample with the HSD's frictional sliding technology, the HSD was then used to verify material properties on similar surrounding pipe to prevent future incidents.

THE MISSION

- Develop a testing strategy to understand the initial incident at the seam and prevent similar incidents
- Generate comprehensive reporting to apply to real-time integrity management decision-making
- Reduce number of digs and long term costs while maintaining safe pipeline operations

THE SOLUTION

MMT's HSD Tester was used to characterize the weld of an LF-ERW pipe joint that had experienced an incident at the seam. A sample of the incident pipe was cut out and tested in a warehouse. The HSD Tester identified a high hardness spike at the bondline that could lead to brittle behavior (Figure 1).

The scope of testing was expanded to include surrounding

Figure 1 Incident sample

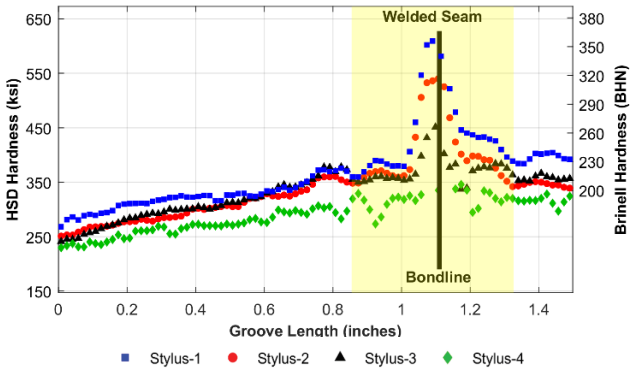
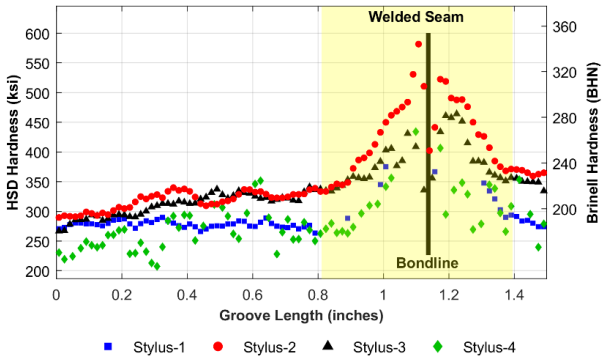


Figure 2 Field sample with similar hardness increase behavior



pipes still in-service by the same manufacturer. Testing results from MMT's HSD were then used as a proactive method to identify potential threats and ensure the integrity of other in-service pipelines.

From the expanded testing, one other pipe joint was identified as having a similar hardness spike at the bondline (Figure 2). Because of the early identification, operators prioritized repairs on that pipeline. Other joints that were tested showed smaller increases in hardness and therefore had less risk of exhibiting brittle behavior. All pipe seam welds tested were identified as LF-ERW.

OUR HEADQUARTERS

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