

STRIKE ONE, STRIKE TWO... HOW MANY STRIKES UNTIL YOU'RE OUT?

- ▶ **DIFFERENTIATE MECHANICAL DAMAGE:** Being able to characterize true mechanical damage defects will help you take the best action.



MECHANICAL DAMAGE ASSESSMENT

Third-party strikes are one of the leading causes of pipeline damage. Knowing you have mechanical damage without understanding whether the result is dents with corrosion or, more seriously, dents with gouging – means you might not apply the right mitigative approach. And that's like striking out.

APPROACH

Dent and gouge assessment

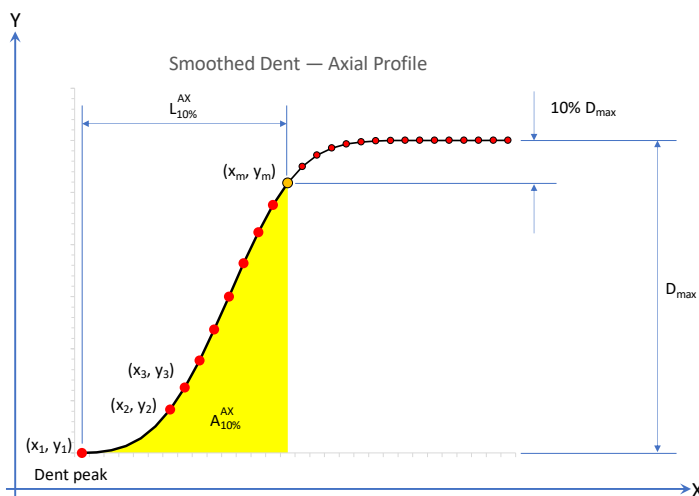
Using the multiple dataset in-line inspection (ILI) platform and our proprietary assessment methodology, we can detect, identify and size dent and gouge combinations, then discriminate between higher-risk and less onerous defects. The result is a severity ranking with options to extend to a higher level by applying industry-accepted approaches to assess static and dynamic integrity.

VALUE

Hit the right defect class

Incorrectly calling out anomalies that might be dents and gouges can be costly; differentiation helps match the right action to the anomaly. We look for immediate and future integrity threats, not just purely geometric indicators.

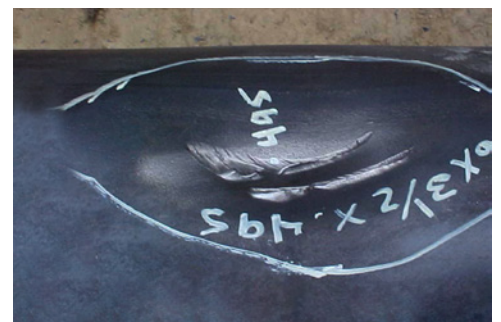
ASSESSMENT OF DENT SHAPE (API 1183)



$$A_{10\%}^{AX} = \frac{1}{2} \sum_{k=2}^m (x_k - x_{k-1}) [(y_k - y_1) + (y_{k-1} - y_1)]$$

m = number of data points from the deepest point to $L_{10\%}^{AX}$ point

DENT AND GOUGE DEFECT



EXTENDING BEYOND INSPECTION

- ▶ Improving safety, efficiency and productivity throughout the life of your pipeline.

ASSESSMENT SERVICES



Immediate Integrity Assessment

IMMEDIATE THREATS:

- ▶ Metal loss
- ▶ Dent strain
- ▶ Bending strain
- ▶ Selective seam weld corrosion
- ▶ Cracks
- ▶ Mechanical damage



Future Integrity Assessment

TIME-DEPENDENT THREATS:

- ▶ Corrosion growth
- ▶ Line movement
- ▶ Crack growth
- ▶ Dent fatigue
- ▶ Other changes in pipeline conditions



Advanced Integrity Assessment

MORE COMPLEX THREATS:

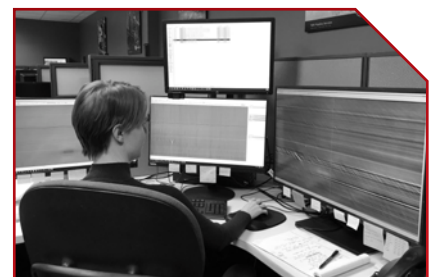
- ▶ Non-axial stress corrosion cracking
- ▶ Branch connection loading
- ▶ Wrinkle bends
- ▶ Hard spots
- ▶ Other threats requiring finite element analysis (FEA)

Using the right approach

The right assessment approach, consistent with codes, industry-accepted methods and operator mandates, ensures compliance and auditability.

Focus on the right decisions

By focusing on the anomalies that matter most, you can make the best integrity decisions for your pipeline.



Contact your TDW sales representative for more info.

©2022 T.D. Williamson



T.D. Williamson

