

10th Quarterly Report – Public Page

Date of Report: February 29, 2016

Contract Number: DTPH56-13-T-000011

Prepared for: DOT Pipeline and Hazardous Material Safety Administration

Project Title: Above-Ground Detection Tools Including Disbondment and Metal Loss for all Metals Including Cast-Iron Graphitization

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Results and Conclusions: The project work has been focused on capturing field data from coated steel pipelines provided by supporting utilities. The Spar technology from Optimal Ranging has consistently worked well with this type of facility when a test point to inject the signal is available. The Spar provides reasonable range of operation in terms of length of pipe surveyed from a single test point; it also provides good mapping facilities. A set of data analysis routines in the R programming language have been developed to facilitate this work. These improve the ease of use greatly over the original Python and MatLab methods used.

The survey data from two additional utilities has been gathered and the initial analysis of this data has been reported on. GTI is awaiting the excavation reports from these two sites; in one case the excavations have been performed, in the other they are still pending. GTI has identified features in the survey data that potentially indicate coating disbondments; the excavation data is required to verify this finding.

The data to date indicates that the Spar survey technology can find breaks in the pipeline coating through the analysis of the pipe current data. It has also been shown that the phase data can indicate changes in “shape” of the pipeline caused by appurtenances or metallic interferences. The current goal is to establish the minimum size of feature that can be detected using phase analysis; disbondments, bubbles in the coating, and general metal loss are relatively small features. To this end, GTI is reviewing the test site data and analysis; this activity will be reported in stand-alone documents.

Plans for Future Activity: During the next quarter the following activities are planned:

- Complete the report detailing the analysis methodology developed to identify potential flaw locations through the post processing of Spar data
- Prepare a report detailing the various hardware items used for this work and the specifications thereof

- Prepare addendums to two of the individual utility site reports when the excavation data are provided to GTI
- Continue monthly conference calls with the PHMSA representatives
- Write the next milestone, draft, and final reports.