

7th Quarterly Report – Public Page

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Contract Number: DTPH56-13-T-000002

Prepared for: DOT Pipeline and Hazardous Material Safety Administration

Project Title: Real-Time Multiple Utility Detection During Pipe Installation Using Horizontal Directional Drilling (HDD) System

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Results and Conclusions:

Two local area tests were conducted with the acoustic system to detect buried pipes during the HDD operations. The data analysis was performed as recorded in the field and post processing. Overall, the acoustic pipe detection system was able to achieve a detection accuracy of $\pm 2.1'$ on average for pipe and sensor separations of less than 10 feet. For the detection ranges greater than 10 feet, the detection accuracy degraded. The project results were discussed in the peer-review meeting arranged by PHMSA. The project plan and associated milestones with the acoustic-only system were discussed with all parties involved in the project. The revised project plan/milestones chart will be submitted to PHMSA for the approval.

Plans for Future Activity:

- With the PHMSA agreement, revise the current tasks for proceeding with a stand-alone acoustic system.
 - Implement a rotary hammer noise source powered by a mud motor
 - Improve acoustic sensor coupling
 - Improve the real-time processing of the acoustic system data
 - Demonstrate the system performance in a controlled test environment.
- Write monthly and quarterly reports.