

Handheld Pipe Locator Test/Demonstration Project for NYSEARCH/NY One-Call/PHMSA
Draft Test Plan – DCD 3/13/09, Final 3/27/09

Background:

As part of previous pipe locator product development efforts, the NYSEARCH group of numerous LDC member companies has formed a consensus on the desired features and performance for a state-of-the-art pipe locator.

Key elements include:

- Light weight: 15 lbs or less
- Real-time mark-out
- Survey perpendicular OR parallel to the pipe
- Locate plastic, steel, cast iron and other facilities as small as ½” to as large as 24” in diameter
- Battery-operated device with a minimum of 4 hours of use without re-charging
- For an air-coupled antenna, plan position accuracy of +/- 6” for pipe depths up to 24”, +/- 9” for pipe depths from 24” to 6’
- For a ground-coupled antenna, plan position accuracy of +/- 3” for depths up to 24” and +/- 8” for pipe depth from 24” to 8’
- Low cost and easy to use

Objectives: The objective of the field tests/demonstrations are to: 1) display and validate the current performance of the handheld pipe locator prototype, and, 2) introduce the tool to additional stakeholders to demonstrate how this tool can aid damage prevention initiatives.

Description of Intended Sites: The sites will be jobs and/or training facilities selected by potential LDCs/users of the tool. Some of the users have prior experience in testing the prototype and some users will not have had prior experience. It is preferred that any sites that are picked can either be validated through direct assessment/exposure or through proven maps of the area surveyed. Given that each of the three – four companies will have access to the tool for 2 – 3 days of demonstrations, it is suggested that anywhere from 5 – 10 sites are selected by each company. It is also recommended that, if possible, the site characteristics (not actual maps) are reviewed prior to the visit(s) by the contractor.

Overall Vision of Conduct of Multiple Tests:

The handheld pipe locator operator will be a skilled technician from the original contracting company, PipeHawk plc that designed the unit. There will be one to two PROTOTYPE units that have recently been re-furbished that will be used. The idea is to circulate equipment and conduct the tests/demonstrations around to three to four NYSEARCH member companies who are funders of the technology and to conduct all tests in a two-week period while the PipeHawk plc personnel are in the country. Currently, the two week time period is slated for the weeks of May 4 and May 11. From

initial discussions, all tests will be conducted in New York State and preference so far has been indicated to start in upstate New York and finish in downstate New York. A tentative plan for companies to visit from start to finish are: New York State Electric and Gas, National Fuel Gas, National Grid (NY/Long Island), and Con Edison. Site visits to all four companies will take place over the 10-day period in the two weeks. Work over the weekend will only be chosen if the host company prefers to conduct tests in the overtime period and if the PipeHawk plc operator can fit that into his/her schedule.

Proposed Procedure

Initial Setup:

- If possible, sites should be selected ahead of the day of the test. The host needs to determine whether the site predictions can be validated by excavations or by verified maps.
- It is preferred that sites with different characteristics are selected. Sites could vary by pipe size, pipe depth, soil type, surface type and traffic activity.
- Visits to multiple sites should be coordinated for the finite time period of one to two days in company territory.
- Plans should be made to avoid downtime during the business day due to battery charging or other equipment calibration procedures.
- Based on experience in other pipe locator tests, if possible, it is helpful to mark “lanes” for data collection in selected areas.

PE Pipe Location Tests:

- In general, like a traditional markout or locate job, the operator could be given reference information that would help put the investigation in the correct general area. Above-ground site information is traditionally used by all locators in terms of narrowing the field of investigation.
- Data should be collected with careful attention to reference points and markers on lanes (team participants on site should agree to stated landmarks)
- It is noted that while there are many other facilities of different types in the areas near the PE pipes, the focus should remain on the PE pipe.
- After initial runs on each section, it is recommended that the test observers be shown the images on the screen that give positive indications of pipe location
- There may be areas where PE pipe converts into sections of other types of pipe. Wherever possible, it is requested that the host utility provide such information in advance of work commencing on those particular sections

Validation Plans:

- It is requested that each host utility prepare in advance of finalizing which sites to visit an approach for validating the predicted facility location. Sometimes, verified maps are sufficient. Preferably, pot-holing or other direct validation measures are used.
- The tests will be kept blind to the operator until after the predictions are made. If the particular group at a host company wants to deviate from that approach, given group

consensus on site, the operator may be given some information to help set a reference for a prediction.

- As part of the funded effort, NYSEARCH staff will work with PipeHawk plc to prepare a report of findings. At present, there are two report deadlines. The first is an interim report containing the field test data that NYSEARCH staff, host utilities and PipeHawk plc must agree to and complete by May 25. The second report is a comprehensive narrative and summary of the test conduct, results and findings that will be prepared as a final report. The Final Report due date will be agreed to by June 15.