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TECH TALK

Where Can I Find Detailed Map of Oil and Gas Flowlines in Colorado?

BY GARY BEERS • FOR ENERGY PIPELINE

Last year, there was a deadly reminder of the importance of one unaddressed concern about the overlap of oil fields and residential development.

The owner of a new house in a subdivision was repairing a water heater in his basement when it exploded, killing him and his brother-in-law, and injuring his wife. Investigation revealed that an abandoned flowline, which connected to an active well (178 feet away), had been severed less than 10 feet from the home's basement. The well had been shut off for months, but had recently been turned back on, and seeped natural gas through the French drains into the home's basement. With the spark of the water heater, the home exploded (Figure 1).

Consequently, residents, agencies and government officials raised the issue about available public knowledge on oil and gas flowlines near and in residential areas. An investigation by Inside Energy and Rocky Mountain Public Broadcast System (IE & RMPBS Team Up on Firestone Investigation, December 21, 2017) reported the following key points:

» In 1996, the Colorado Oil and Gas Conservation Commission (COGCC) required operators to annually pressure test flowlines for problems.

» In 2014, COGCC's risk assessment of the oil and gas industry (Risk-based Inspections, Strategies to Address Environmental Risk Associated with Oil and Gas Operations) revealed flowline failures were a "significant source of spills and releases into the environment" and recommended COGCC monitor their installation and operation.

» "I'll admit a pang of guilt because we asked for the report. The report came out. It predicted almost exactly what happened," said state Rep. Jonathan Singer, D-Boulder, who sponsored legislation that led to the assessment.

COGCC'S NOTICE TO OPERATORS (MAY 2, 2017)

The COGCC took immediate steps (Notice to Operators, Statewide Flowlines or Pipelines, 100 Series Rules, May 2, 2017) to require an inventory of active and abandoned flowlines and, for those within 1,000 feet of a building, test for integrity. Operators were ordered to conduct a new integrity test on all flowlines, unless the flowline was completed after Nov. 1, 2017. Operators also were required to complete abandonment of any flowline, not actively operated and regardless of distance to a building.

Incidentally, COGCC defines flowlines as any conduit for gas oil, condensate, or other liquid or gaseous hydrocarbons, and flowlines may be known by different names: well site flowline, return line, sales line, dump line, process piping fuel gas supply line, and non-well site flowline.

DETAILED MAP OF FLOWLINES (JUNE 28, 2017)

While COGCC's effort did lead to a ground-breaking

Figure 1. House Explosion on Firestone. (Denver Post, Photo by RJ Sangosti, May 2, 2017)

For over 50 years **GARY BEERS** has worked in numerous fields of environmental science as a consultant, regulator and educator. This career included senior management position with major consulting, nonprofit and public organizations. He has founded several successful firms to capture emerging resource management markets. One of his latest ventures, EnviroScienceINFO, provides content for public media.

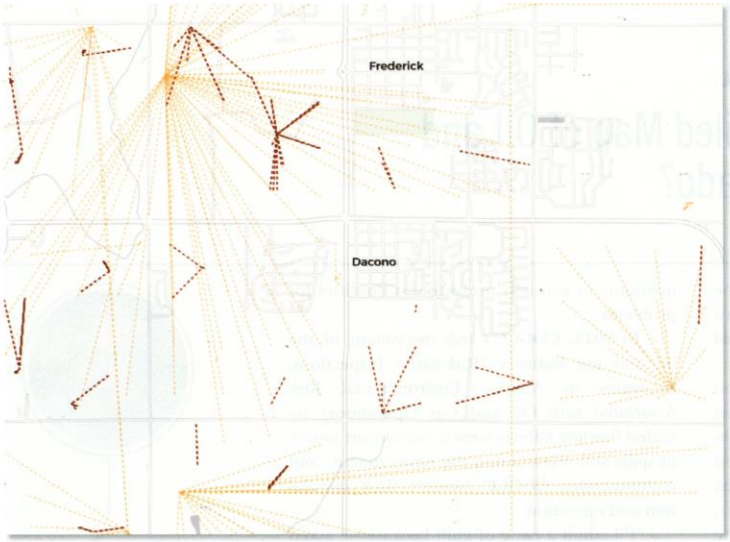

Figure 2. Detailed Map for Dacono. (Inside Energy, 2017)

inventory of active flowlines and their integrity, there remained the issue of public access to locations of flowlines near a building of interest. Most of the general public would have some difficulty in extracting locational data from the spreadsheets and producing a map of the flowline(s) in the area of concern.

Inside Energy made an initial effort to convert the spreadsheet data to a map format that would be helpful to the general public (Mapping Colorado's Invisible Pipeline Network, Inside Energy, L. Paterson and J. Wirfs-Brock, June 28, 2017). To construct the map, the start and end points of each flowline from the spreadsheets were located and then a line drawn between them to identify the flowline. This was necessary since actual routes of the flowlines were not provided. Qualifications on this approach are provided in Inside Energy's above online document.

A detailed, scalable statewide map of the flowlines is available in the mentioned online document. An example of a map on the local level is provided in Figure 2 for portions of Dacono and Frederick. A key to which oil/gas companies own the identified flowlines is provided online by Inside Energy.

Hopefully, local and county planning departments will soon incorporate COGCC's flowline data into their GIS systems for public access.