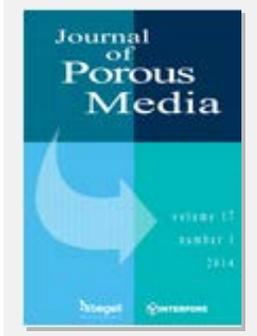




FOR IMMEDIATE RELEASE

ESI CONSULTANTS PUBLISH ARTICLE ON GAS MIGRATION IN SOILS IN JOURNAL OF POROUS MEDIA



[Journal of Porous Media](#)

Volume 18, 2015 Issue 8

“Modeling of Gas Leaks in Soils:
A Modern, Systematic Approach”

by Fernando Lorenzo, Ph.D., P.E.
and Francisco Godoy, P.E.

AURORA, IL – September 14, 2015. We are pleased to announce that ESI Principal & Director Fernando Lorenzo, Ph.D., P.E. and Sr. Managing Consultant Francisco Godoy, P.E. recently published an article titled, “Modeling of Gas Leaks in Soils: A Modern, Systematic Approach” in volume 18, issue 8 of the Journal of Porous Media. In the article, the authors stress the importance of adequate modeling and quantification of the gas migration process when investigating fires and explosions caused by fugitive natural gas. When performed properly, the analysis can reveal a number of important factors, including the gas leak path from the leak source to the point of ignition, the quantity of gas that migrated, and the time it took to reach the ignition source. Additionally, a proper gas flow analysis can often provide enough information to rule out other potential gas leak sources.

The authors also outline a modern approach for modeling gas migration in soils using the finite element method, and validate the approach by comparing the model predictions to published data for both low and higher pressure leaks. This methodology can also be used to calculate leak flow rate from a known pressure source if the soil composition and distribution pressure are known.

Dr. Lorenzo specializes in the failure analysis of metals and plastics, and has over 35 years of experience investigating accidents and consulting on matters involving industrial machinery, steam and gas turbines, piping systems, chemical plants, power plants, petroleum refineries, and oil fields. Mr. Godoy has over 28 years of experience in mechanical engineering design, energy and wind turbine design, pressure vessels and pipeline design, power generation, and structural engineering. Both authors have specific expertise across the range of issues that are unique to the industries they serve, and a broad range of technical skills in mechanical testing, materials evaluations, applied fluid mechanics, finite element analysis, process engineering, and stress analysis.

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