

## Journal Publications (76)

- 2021 Gan, M., M.C. Nguyen, L. Zhang, N. Wei, J. Li, H. Lei, Y. Wang, X. Li, and **P.H. Stauffer**, Impact of reservoir parameters and wellbore permeability uncertainties on CO<sub>2</sub> and brine leakage potential at the Shenhua CO<sub>2</sub> Storage Site, China, in press, *Int. J. Greenhouse Gas Control*.
- 2021 Singh, M., A. Chaudhuri, M.R. Sotanian, and **P.H. Stauffer**, Coupled multiphase flow and transport simulation to model CO<sub>2</sub> dissolution and local capillary trapping in permeability and capillary heterogeneous reservoir, *Int. J. Greenhouse Gas Control*, **108**, <https://doi.org/10.1016/j.ijggc.2021.103329>.
- 2021 Nguyen, M.C., M. Morteza, M. Fazelalavi, Y. Zhang, G.W. Gay, D.W. Bowen, L.H. Spangler, W. Zaluski, and **P.H. Stauffer**, Skin factor and potential formation damage from chemical and mechanical processes in a naturally fractured carbonate aquifer with implications to CO<sub>2</sub> sequestration, in press, *Int. J. Greenhouse Gas Control*.
- 2021 Bourret, S.M., E.M. Kwicklis, and **P.H. Stauffer**, Evaluation of transport and other fractionation processes on xenon isotope ratios sampled near underground nuclear explosions in shafts and tunnels, in press, *J. Environ. Radioactivity*
- 2021 Avendano, S.T., D. Harp, S. Kurwadkar, J.P. Ortiz, and **P.H. Stauffer**, Continental-Scale Geographic Trends in Barometric-Pumping Efficiency Potential: A North American Case Study, in press, *Geophysical Research Letters*.  
<https://doi.org/10.1029/2021GL093875>
- 2020 Eric J. Gultinan , Kristopher L. Kuhlman , Jonny Rutqvist , Mengsu Hu , Hakim Boukhalfa , Melissa Mills , Shawn Otto , Douglas J. Weaver , Brian Dozier , **P. H. Stauffer**, Temperature response and brine availability to heated boreholes in bedded salt, *Vadose Zone Journal* 19(1), <https://doi.org/10.1002/vzj2.20019>.
- 2020 Middleton, R.S., J.M. Bielicki, B. Chen; A.F. Clarnes, R. Currier, K.M. Ellett, D.R. Harp; B.A. Hoover, R.M. Kammer, D. McFarlane, J.D. Ogland-Hand, R.J. Pawar, , **P.H. Stauffer**, H.S. Viswanathan, S.P. Yaw, Great SCO<sub>2</sub>T! Rapid tool for carbon sequestration science, engineering, and economics, *Applied Computing and Geosciences*, 7. <https://doi.org/10.1016/j.acags.2020.100035> (70)
- 2020 Bourret, S.M., E.M. Kwicklis, D.R. Harp, J. P. Ortiz, and **P.H. Stauffer**, Beyond Barnwell: Applying lessons learned from the Barnwell site to other historic underground nuclear tests at Pahute Mesa to understand radioactive gas-seepage observations, *J. Environ. Radioactivity*, 220, 106297.  
<https://doi.org/10.1016/j.jenvrad.2020.106297>
- 2020 Stroujkova, A., E. Gorman, S.T. Avendano, M. Horne, M. Person, P. Hubbard, J. Salerno, C.R. Carrigan, D.R. Harp, **P.H. Stauffer**, Using SF<sub>6</sub> and Xe to monitor gas migration through explosion-generated fracture networks, *J. Geophysical Research – Solid Earth*, 125(5), <https://doi.org/10.1029/2019JB018992>

- 2020 Hyman J., J. Jiménez-Martínez; C.W. Gable; **P.H. Stauffer**; Rajesh Pawar, Characterizing the impact of fractured caprock heterogeneity on supercritical CO<sub>2</sub> injection, *Transport in Porous Media*, **131**, <https://doi.org/10.1007/s11242-019-01372-1>.
- 2020 Chen, B.; Harp, D.; Pawar, R.; **Stauffer, P.H.**; Viswanathan, H.; Middleton, R., Frankenstein's ROMster: Avoiding Pitfalls of Reduced-Order Model Development, *Int. J. Greenhouse Gas Control*, **93**, <https://doi.org/10.1016/j.ijggc.2019.102892>
- 2020 Singh, M., A. Chaudhuri, **P.H. Stauffer**, R.J. Pawar, Simulation of gravitational instability and thermo-solutal convection during the dissolution of CO<sub>2</sub> in deep storage reservoirs, *Water Resources Research*, **56**(1), <https://doi.org/10.1029/2019WR026126>
- 2020 Harp, D.R., S.M. Bourret, **P.H. Stauffer** and E.M. Kwicklis, Discriminating underground nuclear explosions leading to late-time radionuclide gas seeps, *Geophysical Research Letters*, **47**(13). <https://doi.org/10.1029/2019GL086654>.
- 2019 **P.H. Stauffer**, T. Rahn, J. P. Ortiz, L. J. Salazar, H. Boukalfa, H. R. Behar, and E. E. Snyder, Evidence for High Rates of Gas Transport in the Deep Subsurface, *Geophysical Res. Let.*, **46**(7). [10.1029/2019GL082394](https://doi.org/10.1029/2019GL082394)
- 2019 Harp, D.R., J.P. Ortiz, and **P.H. Stauffer**, Identification of dominant gas transport frequencies during barometric pumping of fractured rock, *Scientific Reports*, **9**, <https://doi.org/10.1038/s41598-019-46023-z>
- 2019 Sweeney, M., C.W. Gable, S. Karra, **P.H. Stauffer**, R.J. Pawar, and J. Hyman, Upscaled discrete fracture matrix model (UDFM): an octree-refined continuum representation of fractured porous media, *Computational Geosciences*, **24** <https://doi.org/10.1007/s10596-019-09921-9>.
- 2019 Atchley, A.L., K.H. Birdsell, K. Crowell, R.S. Middleton, and **P.H. Stauffer**, Simulating 10,000 Years of Erosion to Assess Nuclear Waste Repository Performance, *Geosciences*, **9**, 120; doi:10.3390/geosciences9030120 (60)
- 2019 Singh, M., A. Chaudhuri, S.P. Chu, **P.H. Stauffer**, R.J. Pawar, Analysis of evolving capillary transition, gravitational fingering, and dissolution trapping of CO<sub>2</sub> in deep saline aquifers during continuous injection of supercritical CO<sub>2</sub>, *Int. J. Greenhouse Gas Control*, **82**, doi:10.1016/j.ijggc.2019.01.014.
- 2019 Johnson, P.J., S. Otto, D.J. Weaver, B. Dozier, T.A. Miller, A.B. Jordan, N. Hayes-Rich, and **P.H. Stauffer**, Heat-Generating Nuclear Waste in Salt: Field Testing and Simulation, *Vadose Zone J.*, **18**(1) doi:10.2136/vzj2018.08.0160
- 2019 Behar, H.R., E.E. Snyder, S. Marczak L.J. Salazar, G. Fordham, S.P. Chu, D. Strobridge, K.H. Birdsell, K.C. Rich, and **P.H. Stauffer**, An investigation of plume response to drum failure and soil vapor extraction at Material Disposal Area L, Los Alamos, NM, *Vadose Zone J.*, **18**(1), doi: 10.2136/vzj2018.04.0080.
- 2019 Onishi, T., M.C. Nguyen, J.W. Carey, B. Will, W. Zaluski, D.W. Bowen, B.C. Devault, A. Duguid, Quanlin Zhou, S.H. Fairweather, L.H. Spangler, and **P.H. Stauffer**, Potential CO<sub>2</sub> and brine leakage through wellbore pathways for geological CO<sub>2</sub> sequestration using the National Risk Assessment Partnership

- Tools: Application to the Big Sky Regional Partnership, *Int. J. Greenhouse Gas Control*, <https://doi.org/10.1016/j.ijggc.2018.12.002>
- 2019 Bourret, S.M., E.M. Kwicklis, T.A. Miller, and **P.H. Stauffer**, Evaluating the importance of barometric pumping for subsurface gas transport near an underground nuclear test site, *Vadose Zone J.*, 18(1), doi: 10.2136/vzj2018.07.0134 .
- 2019 Johnson, P.J., G.A. Zyvoloski, and **P.H. Stauffer**, Impact of a porosity dependent capillary function on simulations of porous flow, 127(1), *Transport in Porous Media*, March 2019. <https://doi.org/10.1007/s11242-018-1188-x>
- 2018 Harp, D.R., J.P., Ortiz, S. Pandey, S. Karra, D. Anderson, C.R. Bradley, H.S. Viswanathan, and **P.H. Stauffer**, Immobile pore-water storage enhancements and retardation of gas transport in fractured rock, *Transport in Porous Media*, 124(2), September 2018. <https://doi.org/10.1007/s11242-018-1072-8>
- 2018 Dai, Z., Zhang, Y., Bielicki, J.M., Amooie, M.A., Zhang, M. Yang, C., Zou, Y., Ampomah, W., Xiao, T., Jia, W., Middleton, R.S., Zhang, W., Sun, Y., Moortgat, J., Soltanian, M.R., and **P.H. Stauffer**, 2018, Heterogeneity-assisted carbon dioxide storage in marine sediments, *Applied Energy*. 225(1), September 2018.
- 2018 Johnson, P.J., G.A. Valentine, **P.H. Stauffer**, C.S. Lowry, I.M. Sonder, B.A. Pulgarin, C.C. Santacoloma, A. Agudelo, Long Boundary Drainage as a Source for Lahars, *Bulletin of Volcanology*, March 2018, <https://doi.org/10.1007/s00445-018-1214-4>.
- 2017 Nguyen, M., X. Zhang, N. Wei, J. Li, X. Li, Y. Zhang, **P.H. Stauffer**, An Object-based Modeling and Sensitivity Analysis Study in Support of CO<sub>2</sub> Storage in Deep Saline Aquifers at the Shenhua site, Ordos basin, *Geomech. Geophys. Geo-energ. Georesour.*, September 2017, Volume 3, [Issue 3](https://doi.org/10.1007/s40948-017-0063-5), pp 293–314 DOI 10.1007/s40948-017-0063-5.
- 2017 Harp, D., **P.H. Stauffer**, D. O'Malley, Z. Jiao, E.P. Egenolf, T.A. Miller, D. Martinez, K. A. Hunter, R.S. Middleton, J.M. Bielicki, R.J. Pawar, Development of Robust Pressure Management Strategies for Geologic CO<sub>2</sub> Sequestration, *Int. J. Greenhouse Gas Control*, 64, 43-59.
- 2016 Pawar, R.J., G. Bromhal, S.P. Chu, R.M. Dilmore, C. Oldenburg, **P.H. Stauffer**, Y. Zhang, G. Guthrie, The National Risk Assessment Partnership's Integrated Assessment Model for Carbon Storage: A Tool to Support Decision Making Amidst Uncertainty, *Int. J. Greenhouse Gas Control*, 52, 175–189. (48)
- 2016 Raduha, S., D. Butler, P. Mosley, M. Person, J. Evans, J. Heath, T. Dewers, **P.H. Stauffer**, C. Gable, S. Kelkar, Potential Seal By-pass and Caprock Storage Produced by Deformation-Band-to-Opening Mode Fracture Transition at the Reservoir/Caprock Interface, *Geofluids*, (June, 2016). DOI: 10.1111/gfl.12177
- 2016 Yoshida, N., J.S. Levine, **P.H. Stauffer**, Investigation of uncertainty in CO<sub>2</sub> reservoir models: a sensitivity analysis of relative permeability parameter values, *Int. J. Greenhouse Gas Control*, 49, 161–178 (June 2016). doi:10.1016/j.ijggc.2016.03.008

- 2016 Ziemkiewicz P., **P.H. Stauffer**, J. Sullivan-Graham, S.P. Chu, W. L. Bourcier, T. A. Buscheck, T.Carr, J. Donovan, Z. Jiao, L. Lin, L. Song, J. L. Wagoner, Opportunities for increasing CO<sub>2</sub> Storage in Deep, Saline Formations by Active Reservoir Management and Treatment of Produced Brine: Case study at the GreenGen IGCC Facility, Tianjin, PR, China, *Int. J. Greenhouse Gas Control*, (August), dx.doi.org/10.1016/j.ijggc.2016.07.039.
- 2016 Winslow, D.M., A.T. Fisher, **P.H. Stauffer**, C.W. Gable, and A. Zyvoloski, Three-dimensional modeling of outcrop-to-outcrop hydrothermal circulation on the eastern flank of the Juan de Fuca Ridge, *J. of Geophysical Research: Solid Earth* 121(3), (March 2016). DOI: 10.1002/2015JB012606
- 2015 Jordon, A.J., **P.H. Stauffer**, E. E. Knight, E. Rougier<sup>1</sup>, and D.N. Anderson, Radionuclide Gas Transport through Nuclear Explosion-Generated Fracture Networks, *Scientific Reports*, 5:18383 | DOI: 10.1038/srep18383.
- 2015 Ball, J.L., **P.H. Stauffer**, E.S. Calder, G.A. Valentine, The Hydrothermal Alteration of Cooling Lava Domes, *Bulletin of Volcanology*, 77, 102. DOI 10.1007/s00445-015-0986-z.
- 2015 Jordan, A.B., H. Boukhalfa, F.A. Caporuscio; B.A. Robinson, **P.H. Stauffer**, Hydrous Mineral Dehydration around Heat-Generating Nuclear Waste in Bedded Salt Formations, *Environmental Science & Technology*, 5:1-13. DOI: 10.1021/acs.est.5b01002.
- 2015 Jordan, A.J., **P.H. Stauffer**, D.R. Harp, J.W. Carey, R.J. Pawar, A Response Surface Model to Predict CO<sub>2</sub> and Brine Leakage along cemented wellbores, *Int. J. Greenhouse Gas Control*, (33), pp. 27-39.
- 2015 Middleton, R.S., J.S. Levine, J.M. Bielicki, H.S. Viswana, J.W. Carey, **P.H. Stauffer**, Jumpstarting commercial-scale CO<sub>2</sub> capture and storage with ethylene production and enhanced oil recovery in the U.S. Gulf, *Greenhouse Gas Science and Technology*, 5:1-13. DOI: 10.1002/ghg
- 2014 **P.H. Stauffer**, K.C. Lewis, J.S. Stein, B.J. Travis, P. Lichtner, G.A. Zyvoloski, Joule-Thomson Effects on the Flow of Liquid Water, *Transport in Porous Media*, Vol. 105 (3), December 2014. DOI 10.1007/s11242-014-0379-3.
- 2014 Jordon, A.J., J.K. MacCarthy, **P.H. Stauffer**, G.A. Zyvoloski, M.A. Person, D.N. Anderson, Uncertainty in Prediction of Radionuclide Gas Migration from Underground Nuclear Explosions, *Vadose Zone J.*, Vol 13 (10). October 2014. doi:10.2136/vzj2014.06.0070. (37)
- 2014 Dai, Z., **P. H. Stauffer**, J.W. Carey, R.S. Middleton, Z. Lu, J.F. Jacobs, K. Hnottavange-Telleen, L.H. Spangler, Pre-site characterization risk assessment for commercial-scale carbon sequestration, *Environ. Sci. Technol*, DOI: 10.1021/es405468.
- 2014 Dai, Z., E. Keating, D. Bacon, H.S. Viswanathan, **P.H. Stauffer**, A. Jordan, R.J. Pawar, Probabilistic evaluation of shallow groundwater resources at a hypothetical carbon sequestration site, *Scientific Reports* 4, doi:10.1038/srep04006

- 2014 Harp, D.R., **P.H. Stauffer**, P.K. Mishra, D.G. Levitt, B.A. Robinson, Modeling of High-Level Nuclear Waste Disposal in a Salt Repository, *Nuclear Technology*, 187, Pages 294-307, Sept. 2014, <http://dx.doi.org/10.13182/NT13-110>.
- 2013 Deng, H., Z. Dai, A.V. Wolfsberg, M. Ye, **P.H. Stauffer**, Z. Lu, Upscaling Retardation Factor in Hierarchical Porous Media with Multimodal Reactive Mineral Facies. *Chemosphere*. 10.1016/j.chemosphere.2012.10.105. Epub 2012 Dec 20.
- 2013 Sullivan E.J., S.P. Chu, **P.H. Stauffer** & R. J. Pawar: A CO<sub>2</sub>-PENS model of methods and costs for treatment of water extracted during geologic carbon sequestration, *Desalination and Water Treatment*, 51/7-9, 1487-1493, DOI:10.1080/19443994.2012.71472.
- 2013 Sullivan, E.J., S.P. Chu, **P.H. Stauffer**, R.S. Middleton, R.J. Pawar, A method and cost model for treatment of water extracted during geologic CO<sub>2</sub> storage, *Int. J. Greenhouse Gas Control*, (12 ) 372–381, doi [10.1016/j.ijggc.2012.11.007](https://doi.org/10.1016/j.ijggc.2012.11.007).
- 2012 Deng, H., **P.H. Stauffer**, Z. Dai, Zunsheng Jaio, R.S. Surdam, Simulation of Industrial-Scale CO<sub>2</sub> Storage: Multi-Scale Heterogeneity and its Impacts on Storage Capacity, Injectivity and Leakage, *Int. J. Greenhouse Gas Control*, Volume 10, September 2012, Pages 397–418.
- 2012 Neeper, DA; and **Stauffer, P**, Transport by Oscillatory flow in Soils with Rate-limited Mass Transfer I. Theory, *Vadose Zone J*, doi:10.2136/vzj2011.0093.
- 2012 Neeper, DA; and **Stauffer, P**, Transport by Oscillatory flow in Soils with Rate-limited Mass Transfer II. Field Experiment, *Vadose Zone J*, doi:10.2136/vzj2011.0094.
- 2012 Middleton, R.S., G. Keating, **P.H. Stauffer**, A. Jordan, H. Viswanathan, Q. Kang, B. Carey, M. Mulkey, J. Sullivan, S.P. Chu, and R. Esposito, The multiscale science of CO<sub>2</sub> capture and storage: From the pore scale to the regional scale. *Energy and Environmental Science*, 5,7328 | doi:10.1039/C2EE03227A.
- 2012 Lu, Z., and **Stauffer, P.H.**, On estimating functional average breakthrough curve using Time-Warping technique and perturbation approach. *Water Resources Research*, Vol. 48 (5), 1–11. doi:10.1029/2011WR011506.
- 2012 **Stauffer, P.H.** and Z. Lu, Quantifying transport uncertainty in unsaturated rock using Monte Carlo sampling of retention curves, *Vadose Zone J*, 11, doi:10.2136/vzj2011.0171. (25)
- 2012 Middleton, R.S., Keating, G.N., **Stauffer, P.H.**, Viswanathan, H.S., Pawar, R.J., Effects of geologic reservoir uncertainty on CO<sub>2</sub> transport and storage infrastructure. *Int. J. Greenhouse Gas Control*, doi:10.1016/j.ijggc.2012.02.005.
- 2011 **Stauffer, P.H.**, Viswanathan, H.S., Middleton, R.S., Keating, G.N., Berchtold, K.A., Singh, R.P., Mancino, A., Pawar, R.J., Greening coal: Breakthroughs and challenges of carbon capture and storage. *Environ. Sci. Technol*, 45, 8597–8604 [dx.doi.org/10.1021/es200510f](http://dx.doi.org/10.1021/es200510f).

- 2011 Keating, G, R.S. Middleton, **P.H. Stauffer**, H.S. Viswanathan, B.C. Letellier, P Pasqualini, R. Pawar, A.W. Wolfsberg, Meso-scale carbon sequestration site screening and CCS infrastructure analysis, *Environ. Sci. Technol.*, (JAN 1 2011) Vol.45, iss.1, p.215-222
- 2009 Surdam, R.S., Z Jiao, **P.H. Stauffer**, T.A. Miller, An integrated strategy for carbon management combining geological CO<sub>2</sub> sequestration, displaced fluid production, and water treatment, *Wyoming State Challenges in Geologic Resource Development No. 8*, 2009. ISBN 1-884589-50-2
- 2009 Rapaka, S., R. Pawar, **P. H. Stauffer**, D. Zhang, and S. Chen, Onset of convection over a transient base-state in anisotropic and layered porous media, *J. Fluid Mechanics*, 641, p227-244.
- 2009 Fessenden, JE, **Stauffer, PH**, and HS Viswanathan, Natural Analogs of Geologic CO<sub>2</sub> Sequestration: Some General Implications for Engineered Sequestration. In Carbon Sequestration and Its Role in the Global Carbon Cycle; Eds B.J. McPherson and E.T. Sundquist, *AGU Geophysical Monograph series*, Vol. 183 355 pp
- 2009 **Stauffer, P.H.**, J.A. Vrugt, H.J. Turin, C.W. Gable, and W.E. Soll, Untangling diffusion from advection in unsaturated porous media: Experimental data, modeling, and parameter uncertainty assessment. *Vadose Zone J.*, 8:510-522, doi:10.2136/vzj2008.0055. Referenced in: Unsaturated Zone Interest Group Overcomes Barriers to Advance Interdisciplinary Science, Nimmo, J.R., B.J. Andraski, and R. Muñoz-Carpena. CSA News, 54(5). Referenced to the **Journal Cover** May 2009 Issue of the Vadose Zone J.
- 2009 Chaudhuri, A., H. Rajaram, H.S Viswanathan, G.A. Zyvoloski, and **Stauffer, P.H.**, Buoyant convection resulting from dissolution and permeability growth in vertical limestone fractures. *Geophysical Research Letters*, 36, L03401, doi:10.1029/2008GL036533, 2009.
- 2009 **Stauffer, P.H.**, H.S Viswanathan, R.J. Pawar, and G.D. Guthrie, A system model for geologic sequestration of carbon dioxide. *Environ. Sci. Technol.*, 43(3), 565-570.
- 2008 Viswanathan, H.S., R.J. Pawar, **P. H. Stauffer**, J.P. Kaszuba, J.W. Carey, S.C. Olsen, G.N. Keating, D. Kavestski, and G.D. Guthrie, Development of a hybrid process and system model for the assessment of wellbore leakage at a geologic CO<sub>2</sub> sequestration site, *Environ. Sci. Technol.*, 42, 7280-7286.
- 2008 Rapaka, S., S. Chen, R. Pawar, **P. H. Stauffer**, and D. Zhang, Nonmodal Growth of Perturbations in Density-driven Convection in Porous Media, *J. Fluid Mechanics*, vol. 609, pp.285-303. (14)
- 2008 Vrugt, J.A., **P. H. Stauffer**, Th. Wöhling, B. A. Robinson, and V. V. Vesselinov, Inverse Modeling of Subsurface Flow and Transport Properties Using Recent Advances in Global Optimization, Parallel Computing, and Sequential Data Assimilation, *Vadose Zone J.*, 7(2), 843-864.

- 2007 Miller, T.A., V. V. Vessilinov, **P.H. Stauffer**, K. H. Birdsell, and C. W. Gable, INTEGRATION OF GEOLOGIC FRAMEWORKS IN MESHING AND SETUP OF COMPUTATIONAL HYDROGEOLOGIC MODELS, PAJARITO PLATEAU, NEW MEXICO, *New Mexico Geological Society Guide Book, 58<sup>th</sup> Field Conference*, Geology of the Jemez Mountains Region III.
- 2006 Kwicklis, E.M., A.V. Wolfsberg, **P.H. Stauffer**, M.A. Walvroord, and M.J. Sully, Multiphase Multicomponent Parameter Estimation for Liquid and Vapor Fluxes in Deep Arid Systems Using Hydrologic Data and Natural Environmental Traces, *Vadose Zone Journal*, 2006 5:934-950
- 2006 Hutnak, M; Fisher, AT; Zuhlsdorff, L; Spiess, V; **Stauffer, PH**; Gable, CW, Hydrothermal recharge and discharge guided by basement outcrops on 0.7-3.6 Ma seafloor east of the Juan de Fuca Ridge: Observations and numerical models, *GEOCHEMISTRY GEOPHYSICS GEOSYSTEMS*; v.7, p.Q07O02
- 2006 Pawar, RJ, NR Warpinski, JC Lorenz, RD Benson, RB Grigg, BA Stubbs, **PH Stauffer**, JL Krumhansl, SP Cooper, and RK Svec, Overview of a CO<sub>2</sub> sequestration field test in the West Pearl Queen reservoir, New Mexico, *Environmental Geosciences*; September 2006; v. 13; no. 3; p. 163-180.
- 2006 **Stauffer, P.H.** Flux Flummoxed: A Proposal for Consistent Usage, *Ground Water*, V. 44(2): 125-128.
- 2005 **Stauffer, P.H.**, K.H. Birdsell, M.S. Witkowski, and J. K. Hopkins, Vadose Zone Transport of 1,1,1-Trichloroethane: Conceptual Model Validation through Numerical Simulation, *Vadose Zone Journal* 2005 4: 760-773.
- 2005 **Stauffer, P.H.** and W. J. Stone, Surface Water\Groundwater Connection at the Los Alamos Canyon Weir Site: Part 2. Modeling of Tracer Test Results, *Vadose Zone Journal* 2005 4: 718-728.
- 2005 Neeper, DA; and **Stauffer, P**, Unidirectional gas flow in soil porosity resulting from barometric pressure cycles, *Journal of Contaminant Hydrology*; August 2005; v.78, no.4, p.281-289
- 2001 **Stauffer, P.** ; Bekins, Barbara A., Modeling consolidation and dewatering near the toe of the northern Barbados accretionary complex, *J. Geophys. Res. Vol. 106*, No. B4, p. 6369 - 6384.
- 2000 **Stauffer P.H.**, and Rosenberg, N.D., Vapor phase transport at a hillside landfill, *Environmental and Engineering Geoscience*, Vol. VI, No. 1, p. 71-84
- 1998 Moore, J.C, and the Leg 171A Shipboard Scientific Party, Consolidation patterns during initiation and evolution of a plate boundary decollement zone: Northern Barbados accretionary prism, *Geology*, 26(9), p. 811-814. 1998 Moore, J.C. et al., *Proc. ODP, Initial Repts.*, 171A: College Station, TX
- 1997 **Stauffer P.H.**, Auer, L.H., and Rosenberg, N.D., Compressible gas in porous media: A finite amplitude analysis of natural convection, *Int. J. of Heat and Mass Transfer*, 40 (7), 1585-1589.

## National Laboratory Reports (67)

- 2021 Kuhlman, K., M. Mills, R. Jayne, E. Matteo, C. Herrick, M. Nemer, Y. Xiong, C. Choens, M. Paul, **P.H. Stauffer**, H. Boukhalfa, E. Guiltinan, T. Rahn, D. Weaver, S. Otto, J. DAVIS, J. Rutqvist, Y. Wu, M. Hu, S. Uhlemann, J. Wang, Brine Availability Test in Salt (BATS) FY21 Update, Spent Fuel and Waste Disposition Milestone M2SF-21SN010303052, 61p., August 31, 2021.
- 2021 Guiltinan, E., H. Boukhalfa, M. Dangelmayr, M. Janicke, O. Marina, D. S. Otto, T. Rahn, B. Dozier, D. Ware, D. Weaver, **P.H. Stauffer**, K. Kuhlman, Mills, M.M., R. Jayne, E. Matteo, C. Herrick, M. Nemer, J. Heath, Y. Xiong, C. Choens, M. Paul, J. Rutqvist, Y. Wu, J. M. Hu, 2021 LANL Contributions to the BATS Test in WIPP, Spent Fuel and Waste Disposition Milestone M3SF- 21LA010303012, Los Alamos National Laboratory Report LA-UR- 21-28130, 62p. August 17, 2021.
- 2021 Ortiz, J.P., S.T. Avendano, P.H. Stauffer, NROMM Documentation, Release 0.3.02021. Los Alamos National Laboratory Report LA-UR-21-25270, 69 p., June 2021.
- 2021 DOE-EM, Periodic Monitoring Report for 2019 Vapor-Sampling Activities at Material Disposal Area L, Solid Waste Management Unit 54-006, at Technical Area 54, Revision 1, EM2021-0039, 154 p., March 2021.
- 2021 DOE-EM, Periodic Monitoring Report for 2019 Vapor-Sampling Activities at Material Disposal Area C, Solid Waste Management Unit 50-009, at Technical Area 50, Revision 1, EM2021-0041, 208 p., February 2021.
- 2020 G. Bussod, **P.H. Stauffer**, H. Boukhalfa, M. Dangelmayr, S. Kuluris, N. Hayes-Rich, T.A. Miller, G. Woldegabriel, R. Rosenzweig, R. Calvo, N. Balaban ,O. Klein-Ben David, A. Dody, 2017-2020 FINAL REPORT NNSA-IAEC SCIENCE AREA 5 ENVIRONMENTAL ISR, Los Alamos National Laboratory Report LAUR-20-28271, 115 p., October 15, 2020.
- 2020 Guiltinan, E., H. Boukhalfa, M. Dangelmayr, B. Dozier, M. Janicke, O. Marina, D. S. Otto, T. Rahn, D. Ware, D. Weaver, **P.H. Stauffer**, K. Kuhlman, Mills, M.M., R. Jayne, E. Matteo, C. Herrick, M. Nemer, J. Heath, Y. Xiong, C. Choens, J. Rutqvist, Y. Wu, J. M. Hu, 2020 LANL Contributions to the BATS Test in WIPP, Spent Fuel and Waste Disposition Milestone M3SF-20LA010303012, Los Alamos National Laboratory Report LA-UR-20-26603, 127p. August 30, 2020.
- 2020 Kuhlman, K., M. Mills, R. Jayne, E. Matteo, C. Herrick, M. Nemer, J. Heath, Y. Xiong, C. Choens, **P.H. Stauffer**, H. Boukhalfa, E. Guiltinan, T. Rahn, D. Weaver, B. Dozier, S. Otto, J. Rutqvist, Y. Wu, M. Hu, S. Uhlemann, J. Wang, FY20 Update on Brine Availability Test in Salt, Spent Fuel and Waste Disposition Milestone M2SF-20SN010303032, 107p., August 28, 2020. (60)
- 2020 Gross, M., **P.H. Stauffer**, T.A. Miller, E. Miller, E. Swanson, N. Hayes-Rich, A. Lavadie-Bulnes, D. Milazzo, R. Roback Geologic Framework Models for the Alluvial Basin Reference Case, Spent Fuel and Waste Disposition Milestone M3SF-20LA010304022, Los Alamos National Laboratory Report LA-UR-20-25594, 116p. July 31, 2020.



- 2020 DOE-EM, Periodic Monitoring Report for 2019 Vapor-Sampling Activities at Material Disposal Area C, Solid Waste Management Unit 50-009, at Technical Area 50, EM2020-0281. 166p. August 2020.
- 2020 DOE-EM, Periodic Monitoring Report for 2019 Vapor-Sampling Activities at Material Disposal Area L, Solid Waste Management Unit 54-006, at Technical Area 54, EM2020-0189, 138 p., May 2020
- 2019 **Stauffer, P.H.**, M.R. Gross, P. Dobson, LANL Contributions to Technical Support for Underground Research Laboratory Activities, M4SF-19LA010310012, Los Alamos National Laboratory Report LA-UR-19-29779. September 30. (55)
- 2019 Mills, M.M., K. Kuhlman, E. Matteo, C. Herrick, M. Nemer, J. Heath, Y. Xiong, C. Lopez, **P.H. Stauffer**, H. Boukhalfa, E. Guiltinan, T. Rahn, D. Weaver, B. Dozier, S. Otto, J. Rutqvist, Y. Wu, M. Hu, D. Crandal, Salt Heater Test (FY19), M2SF-19SN010303031, SAND2019-4814 R, Sandia National Laboratories. April 30, 2019,
- 2019 Mills, M.M., K. Kuhlman, E. Matteo, C. Herrick, M. Nemer, J. Heath, Y. Xiong, M. Paul, **P.H. Stauffer**, H. Boukhalfa, E. Guiltinan, T. Rahn, D. Weaver, B. Dozier, S. Otto, J. Rutqvist, Y. Wu, J. Ajo-Franklin, M. Hu, Salt Heater Test (FY19), M3SF-19SN01030303, SAND2019-10240 R, Aug. 30, 2019.
- 2019 **Stauffer, P.H.**, E.J. Guiltinan, S.M. Bourret, G.A. Zyvoloski, Salt Thermal Testing in Heated Boreholes: Experiments and Simulations, Used Fuel Disposition Campaign Milestone M3SF-19LA010303011, Los Alamos National Laboratory Document LA-UR-19-22729, March 31, 25 p.
- 2019 **Stauffer, P.H.**, J.J. Beisman, W.W. Gable, D.R. Harp, T.A. Miller, E.J. Guiltinan, M. Ebeida, 2019 LANL contribution to Salt-GDSA Integration, M3SF-19LA010303012, LA-UR-23322, April 30.
- 2019 **Stauffer, P.H.**, H. Boukhalfa, S.M. Bourret, E. Guiltinan, P. J. Johnson, D.J. Weaver, S. Otto, N. Hayes-Rich, B. Dozier, D. Ware, T. Miller, K. Kuhlman, C. Herrick, M. Mills, LANL Presentations to WM2019, M4SF-19LA01030304, Los Alamos National Laboratory Report LA-UR -19-24337. May 31.
- 2019 **Stauffer, P.H.**, S.P. Chu, R.J. Pawar, A.L. Atchley, E.D. Miller, and S.B. French, Annual Summary Report for the Los Alamos National Laboratory Technical Area 54, Area G Disposal Facility Fiscal Year 2018, LA-UR-19- 22237, 106 p.
- 2019 Rahn, T., M. Guard, E. Miller, B. Newman, **P.H. Stauffer**, 2019, LANL Suggestions for the Area G PA/CA Monitoring Plan, Los Alamos National Laboratory, Los Alamos National Laboratory Report LA-UR-19-22339, March.
- 2019 Chu, S., **P.H. Stauffer** and T.A. Miller, Upgrade of Area G PA-CA Model to Updated Version of GoldSim Software and Model Comparison, Los Alamos National Laboratory Report LA UR-19-21825, February.
- 2018 Boukhalfa, H., **P.H. Stauffer**, P. J. Johnson, D.J. Weaver, S. Otto, B.L. Dozier, K. Kuhlman, C. Herrick, M. Mills, Y. Wu, J. Rutqvist, Experiments and Modeling to Support Field Test Design, M4SF-17LA010303022, LA-UR-18-29203, 70 p.

- 2018 Johnson, S. Otto, D.J. Weaver, B.L. Dozier, T.A. Miller, A.B. Jordan, N.G. Hayes-Rich, **P.H. Stauffer**, LANL Salt International Update, LA-UR- LA-UR-18-29105, M4SF-18LA010303041, 83 p.
- 2018 Johnson, G.A. Zyvoloski, **P.H. Stauffer**, Experiments and Modeling to Support Field Test Design, M3SF-18LA010303015, LA-UR-18-28189, 78 p.
- 2018 **Stauffer, P.H.**, K.H., Birdsell, S.P. Chu, R.J. Pawar, A.L. Atchley, E.D. Miller, and S.B. French, Annual Summary Report for the Los Alamos National Laboratory Technical Area 54, Area G Disposal Facility Fiscal Year 2017, LA-UR-18- 23726, 100 p.
- 2018 Dai, Z., K.H. Birdsell, **P.H. Stauffer**, B. D. Newman, Simulations of Moisture Movement through Pits 37 and 38 at Los Alamos National Laboratory Technical Area 54, Area G, Los Alamos National Laboratory, Los Alamos, NM, 'LA-UR-18-23686', 57 p.
- 2018 Chu, S.P., K.H. Birdsell, **P.H. Stauffer**, S.B. French, Evaluation of Low-Level Waste Disposal Receipt Data for Los Alamos National Laboratory Technical Area 54, Area G Disposal Facility – Fiscal Years 2015-2017, Los Alamos National Laboratory, Los Alamos, NM, 'LA-UR-18-23560', 42 p.
- 2018 Miller, E., K.H. Birdsell, **P.H. Stauffer**, E.Schultz-Fellenz, R. Kelley, B. Goehring, S.B. French, Cliff Retreat Characterization at Technical Area 54, Los Alamos National Laboratory, Los Alamos, NM, 'LA-UR-18-23663, 68 p.
- 2018 Pawar, R.J., S.P. Chu, A.L. Atchley, and **Stauffer, P.H.**, Groundwater Modeling and Predictions of C-14 Transport from Pit 38 at Material Disposal Area G, LA-UR-18- 23491, 13 p.
- 2018 Atchley, A.L., K.H., Birdsell, S.B. French, and **P.H. Stauffer**, 2018b. Special Analysis 2016-004: Decommissioning & Demolition (D&D) of Dome 224 and Associated Concrete Ring-wall, Asphalt Pad, and Liner, Los Alamos National Laboratory Report LA-UR-18- 23727. (40)
- 2018 Atchley, A.A., **P.H. Stauffer**, and K.H. Birdsell, Updated Erosion Analysis for Material Disposal Area G, Technical Area 54, Los Alamos National Laboratory, LA-UR-18- 23419, 45 p.
- 2018 Los Alamos Environmental Management (EM), Interim Measures Final Report for Soil-Vapor Extraction of Volatile Organic Compounds from Material Disposal Area L, Technical Area 54, LA-UR-18-20132 (primary author: **Stauffer, P.H.**, 113 p. (37)
- 2018 **Stauffer, P.H.**, Rahn, T.A., J.P. Ortiz, L.J. Salazar, Boukhalifa, H., and E.M. Snyder, Summary of a Gas Transport Tracer Test in the Deep Cerros Del Rio Basalts, Mesita del Buey, Los Alamos NM, LA-UR-17-31351, 48p. Rev. 1.
- 2017 Nguyen, N. T. Onishi,. J.W. Carey, B. Will, W. Zalusky, D. Bowen, B. Devault, A. Duguid, L. Spangler, and **P.H. Stauffer**, Risk Assessment of Carbon Sequestration into A Naturally Fractured Reservoir at Kevin Dome, Montana, LA-UR-17-31501, 65p.

- 2017 Johnson, P.J., S.M. Bourret, H. Boukhalfa, F.A. Caprouscio, G.A. Zyvoloski, D.J. Weaver, S. Otto, M.M. Mills, E.M. Matteo, K.L. Kuhlman, J. Rutqvist, Y. Wu, and **P.H. Stauffer**, Test Plan Document for Thermal Testing in Salt, M3SF-18LA010303013, LA-UR-1730762, 45p.
- 2017 Johnson, P.J., H. Boukhalfa, D.J. Weaver, S. Otto, B.L. Dozier, **P.H. Stauffer**, Experiments and Modeling to Support Field Test Design, M4SF-17LA010303022, LA-UR-17-27759, 98 p.
- 2017 K.H. Birdsell, **Stauffer, P.H.**, S.B. French, Special Analysis: 2017-001 – Disposal of Drums Containing Enriched Uranium in Pit 38 at Technical Area 54, Area G. LA-UR-17-24345, 44p.
- 2017 **Stauffer, P.H.**, D.G. Levitt, T.A. Miller, A.B Jordan, S.P. Chu, Z.V. Dash, Groundwater Pathway Model for the Los Alamos National Laboratory, Technical Area 21, Material Disposal Area T, LA-UR-17-21054, 151 p.
- 2017 Birdsell, K.H., **P.H. Stauffer**, A. Atchley, E. Miller, S.P. Chu, S.B. French, Annual Report for Los Alamos National Laboratory Technical Area 54, Area G Disposal Facility - Fiscal Year 2016, LA-UR-17-22215, 82p.
- 2017 Chu, S.P., **P.H. Stauffer**, K.H. Birdsell, J.M. Veilleux, S.B. French, Special Analysis: 2016-001 – Analysis of the Potential Under-Reporting of Am-241 Inventory for Nitrate Salt Waste at Area G, LA-UR-17-26674, 41 p.
- 2016 S.P. Chu. K.H. Birdsell, R. Shuman, **P.H. Stauffer**, Special Analysis: 2016-003 – Upgrade of Area G PA-CA Model to Updated Versions of GoldSim Software and to LANL Analysts, LA-UR-17-20616, 44 p.
- 2016 Bourret, S.M., P.J. Johnson, G.A. Zyvoloski, S.P. Chu, D.J. Weaver, S. Otto, H. Boukhalfa, F.A. Caporuscio, A.B. Jordan, **P.H. Stauffer**, 2016, Experiments and Modeling in Support of Generic Salt Repository Science, Los Alamos National Laboratory, USDOE Used Fuel Disposition Campaign, LA-UR-16-2732
- 2016 Hansen, F., S. Sobolik, **Stauffer, P.H.**, Intermediate Scale Testing Report, September 14, 2016, US DOE-NE, Used Fuel Disposition Campaign, FCRD-UFD-000030 Rev. 0, Sandia National Laboratory Document SAND2016-9041R.
- 2016 Los Alamos Environmental Management (EM), Work Plan for a Tracer Test at Material Disposal Area L, Technical Area 54, Los Alamos National Laboratory Document LA-UR-16- 24628 (primary author: **Stauffer, P.H.**)
- 2016 Los Alamos Environmental Management (EM), Interim Measures Progress Report for Soil-Vapor Extraction of Volatile Organic Compounds from Material Disposal Area L, Technical Area 54, Los Alamos National Laboratory Document LA-UR-16-23065 (primary author: **Stauffer, P.H.**)
- 2016 S.B. French, **P.H. Stauffer**, K.H. Birdsell, Annual Report for Los Alamos National Laboratory Technical Area 54, Area G Disposal Facility – Fiscal Year 2015, Los Alamos National Laboratory Document LA-UR-16-21238, 2016-02-29.
- 2015 A.B. Jordan, H. Boukhalfa, F.A. Caporuscio, **Stauffer, P.H.**, Brine Transport Experiments in Granular Salt, August 31, 2015, US DOE-NE, Used Fuel

- Disposition Campaign, Level 4 Milestone, M4FT-15LA0819013, Los Alamos National Laboratory Document LA-UR-15-26804.
- 2015 A.B. Jordan, G.A. Zyvoloski, D.J. Weaver, S. Otto, **Stauffer, P.H.**, Coupled Thermal-Hydrologic-Chemical Model for In-Drift Disposal Test, September 25, 2015, US DOE-NE, Used Fuel Disposition Campaign, Level 4 Milestone, M4FT-15LA0819015, Los Alamos National Laboratory Document LA-UR-15-27442.
- 2015 **Stauffer, P.H.**, S. Chu, C. Tauxe, R. Pawar, NRAP Integrated Assessment Model-Carbon Storage (NRAP-IAM-CS) Tool User's Manual, NRAP-TRS-III-00X-2015, LA-UR-15-26073.
- 2015 Tauxe, C. and **Stauffer, P.H.**, NRAP-IAM-CS Viewer User Manual, LA-UR-15-26203.
- 2015 Los Alamos Environmental Programs (EP), Data Summary for MDA L Interim Measure: Six Months of Soil Vapor Extraction, Los Alamos National Laboratory Document LA-UR-15-26893 (primary author: **Stauffer, P.H.**)
- 2015 **Stauffer, P.H.**, A.B. Jordan, D.J. Weaver, F.A. Caporuscio, J.A. Tencate, H. Boukhalfa, B.A. Robinson (LANL), D.C. Sassani, K.L. Kuhlman, E.L. Hardin, S.D. Sevougian, R.J. MacKinnon (SNL), Y. Wu, T.A. Daley, B.M. Freifield, P.J. Cook, J. Rutqvist, and J.T. Birkholzer (LBNL). Test Proposal Document for Phased Field Testing in Salt, April 30, 2015, US DOE-NE, Used Fuel Disposition Campaign, Level 2 Milestone M2FT-15LA08119016, FCRD-UFD-2015-000077, Los Alamos National Laboratory Document LA-UR-15-23154, 103 p.
- 2014 Los Alamos Environmental Programs (EP), Interim Measures Work Plan for Soil-Vapor Extraction of Volatile Organic Compounds from Material Disposal Area L, Technical Area 54, Revision 1, September 15, 2014, LA-UR-14-26472
- 2014 **Stauffer, P.H.**, A.B. Jordan, Z. Lu, G.A. Zyvoloski, Boukhalfa, F.A. Caporuscio, T.A. Miller, B.A. Robinson, Thermo-hydrological and Chemical (THC) modeling to support field test design, September 30, 2014 *Milestone M4FT-14LA0818064*, Los Alamos National Laboratory Document LA-UR 14-27548
- 2013 **Stauffer, P.H.**, D.R. Harp, A.B. Jordan, Z. Lu, S. Kelkar, Q. Kang, J. Ten Cate, H. Boukhalfa, Y. Labyed, P.W. Reimus, F.A. Caporuscio, T.A. Miller, B.A. Robinson, Coupled model for heat and water transport in a high level waste repository in salt, September 30, 2013 DOE Level 2 Milestone FCRD-UFD- 2013-000206 Los Alamos National Laboratory Document LA-UR 13-27584
- 2013 S.B. French, D. Levitt, **P.H. Stauffer**, K.H. Birdsell, R. Shuman, Special Analysis: Impacts of Water Usage in Pits 37 and 38 at Technical Area 54, Area G, Revision 2, March 2013, UDQE Reference Number, UDQE-1207.
- 2013 **Stauffer, P.H.**, Z. Dai, Z. Lu, R.S. Middleton, J.F. Jacobs, J.W. Carey, LANL Deliverable to the Big Sky Carbon Sequestration Partnership: Preliminary CO<sub>2</sub>-PENS model, LA-UR-13-22466.
- 2013 **Stauffer, P.H.**, S. Chu, T.A. Miller, D. Strobbridge, G. Cole, K.H. Birdsell, B.A. Robinson, C.W. Gable, D.E. Broxton, E.P. Springer, T.G. Shofield, Groundwater

- Pathway Model for the Los Alamos National Laboratory, Technical Area 54, Area G, Revision 1, LA-UR-13-24014.
- 2012 Zvoloski, G.A., B.A. Robinson, Z.V. Dash, S. Kelkar, H.S. Viswanathan, R.J. Pawar, **Stauffer P.H.**, T.A. Miller, S.P. Chu, Software Users Manual (UM) for the FEHM Application Version 3.1 - 3.X, LANL Report LA-UR-12-24493.
- 2012 **Stauffer P.H.**, D.R. Harp, B.A. Robinson, Model Development and Analysis of the Fate and Transport of Water in a Salt-Based Repository, DOE Level 3 Milestone M2FT-12LA08180112, LANL Report LA-UR-12-25050.
- 2010 LANL, Report for Supplemental Soil-Vapor Extraction Pilot Test at Material Disposal Area G, Technical Area 54, Los Alamos National Laboratory document LA-UR-10-3409, 122 p., May 2010.
- 2009 **Stauffer, P.H.**, Numerical Analysis of the Soil-Vapor Extraction Test at Material Disposal Area G, Technical Area 54, Los Alamos National Laboratory document LA-UR-09-0995, Los Alamos, New Mexico. (LANL 2009, 105413) March 2009.
- 2007 **Stauffer, P.H.**, J.K., Hopkins, T. Anderson, and J.A. Vrugt, SOIL VAPOR EXTRACTION PILOT TEST AT TECHNICAL AREA 54, MATERIAL DISPOSAL AREA L: NUMERICAL MODELING IN SUPPORT OF DECISION ANALYSIS, Los Alamos National Laboratory Report, LA-UR-07-4890, 47 pages, July 11, 2007.
- 2005 **Stauffer, P.H.**, H.S. Viswanathan, B.A. Robinson, C.W. Gable, G.L. Cole, D.E. Broxton, E.P. Springer, and T.G. Schofield, 2005. Groundwater Pathway Model for the Los Alamos National Laboratory Technical Area 54, Material Disposal Area G, Los Alamos National Laboratory, document LA-UR-05-7393, Los Alamos, New Mexico. (ER-ID Stauffer et al. 2005, 097432), 66 pages.
- 2003 **Stauffer, P.H.**, J.S. Stein, and B.J. Travis, The correct form of the energy balance for fully coupled thermodynamics in water, Los Alamos National Laboratory Report, LA-UR-03-1555, 9 pages.
- 2003 Wolfsberg, A.V. and **P.H. Stauffer**, Vadose-zone fluid and solute flux: advection and diffusion at the Area 5 Radioactive Waste Management Site, Los Alamos National Laboratory Report, LA-UR-03-4819, 94 pages.
- 2002 **Stauffer, P.H.**, Tritium transport beneath surface impoundments at TA-53 modeling and analysis in support of data needs, Los Alamos National Laboratory Report, LA-UR-02-5321.
- 2000 **Stauffer P.H.**, B. Robinson, and K. Birdsell, Modeling Transport in Los Alamos Canyon: Effects of Hypothetical Increased Infiltration after the Cerro Grande Fire, Los Alamos National Laboratory Report, LAUR 00-5923.
- 2000 **Stauffer P.H.**, K. Birdsell, M. Witkowski, T. Cherry, and J. Hopkins, Subsurface Vapor-Phase Transport of TCA at MDA L: Model Predictions, Los Alamos National Laboratory Report, LAUR 00-2080.

## Selected Conference Publications (38)

- 2021 Stauffer, P.H., K. Kuhlman, J. Rutqvist, Hakim Boukhalfa, R.C. Choens, Brian L. Dozier, Eric J. Gultinan, Courtney G. Herrick, Melissa M. Mills, Shawn Otto\*, Thomas A. Rahn, Douglas J. Weaver, Yuxin Wu, 2021 Update on the US DOE Generic Salt Repository URL - Brine Availability Test in Salt – 21152, Waste Management Symposium, March 8-12, 2020, Phoenix AZ. LA-UR-21-20548.
- 2020 **Stauffer, P.H.**, K. Kuhlman, S.D. Sevougian, and J. Rutqvist, Overview of Salt Repository Research and Development for Spent Nuclear Fuel and High-level Nuclear Waste in the United States – 20307, Waste Management Symposium, March 8-12, 2020, Phoenix AZ. LA-UR-19-31517.
- 2020 Rahn, T., K. Kuhlman, H. Boukhalfa, B. Dozier, D. Ware, S. Otto, D. Weaver, M. Mills, C. Herrick, J. Rutqvist, Y. Wu, **P.H. Stauffer**, E. Gultinan, Brine Availability Test in Salt, a Heated Borehole Experiment at the Waste Isolation Pilot Plant, New Mexico, USA – 2023, Waste Management Symposium, March 8-12, 2020, Phoenix AZ. LA-UR-19-31620.
- 2020 Gultinan, E., T.A. Miller, K. Kuhlman, J. Rutqvist, **P.H. Stauffer**, Brine Availability Test in Salt: THMC Simulations of a Heated Borehole in Salt – 20239, Waste Management Symposium, March 8-12, 2020, Phoenix AZ. LA-UR-19-31638.
- 2019 Li, X., Q. Li, G. Lui, S. Forbes, K. Hnottavange-Telleen, A. Tanaka, F. May, S. Greenberg, **P.H. Stauffer**, R. Chalaturnyk, H. Fabriol, X. Yang, A. Brown, Introduction to ISO Technical Report on Lifecycle Risk Management for Integrated CCS Projects, IEA-GHGT 14 conference paper, May 2019.
- 2019 Boukhalfa, H., S. Ware, P.J. Johnson, S. Otto, D. Weaver, B. Dozier, M.M. Mills, C. Herrick, K.L. Kuhlman, **P.H. Stauffer**, (2019), Development of an Experimental Approach for Thermal Testing in Bedded Salt, Waste Management 2019 Proceedings
- 2019 Bourret, S. M., E. J. Gultinan, P. J. Johnson, S. Otto, D. J. Weaver, B. Dozier, H. Boukhalfa, T. A. Miller, and **P. H. Stauffer** (2019), Experiments and Simulation of a Borehole in Salt to Understand Heat, Brine, and Vapor Migration. Waste Management 2019 Proceedings. LA-UR-18-30194
- 2019 G. Bussod, P. Reimus, **P.H. Stauffer**, M. Dangelmayr, N. Hayes-Rich, P. Dixon, R. Harris, D. Ware, H. Behar, R. Calvo, O. Klein-Ben David, D. Avraham, N. Balaban, R. Rosenzweig, Subsurface Radionuclide Transport: Northeastern Negev Desert Vadose Zone Model Development. Waste Management 2019 Proceedings, LA-UR-19-20210.
- 2019 Fredlund M.D., Meng S., Zvolosk G.A., **Stauffer P.H.**, Orr S. (2019) Benchmarking of FEHM Control Volume Finite Element Solver. In: Zhan L., Chen Y., Bouazza A. (eds) Proceedings of the 8th International Congress on Environmental Geotechnics Volume 1. ICEG 2018. Environmental Science and Engineering. Springer, Singapore. [https://doi.org/10.1007/978-981-13-2221-1\\_57](https://doi.org/10.1007/978-981-13-2221-1_57).

- 2017 **Stauffer, P.H.**, K.H. Birdsell, Z. Dai, D. Levitt, A. Atchley, R.J. Pawar, S.P. Chu, and S.B. French, Simulated Impacts of Water Introduced into Pits 37 and 38 at Technical Area 54, Area G, Los Alamos National Laboratory, Waste Management-17 Conference, LA-UR-16-29480 (30).
- 2017 Bourret, S., S. Otto, P.J. Johnson, D. Weaver, H. Boukalfa, **P.H. Stauffer**, High Level Waste in Salt Repositories: Experiments and Simulations of Evaporation in the Underground, Paper 17167, Waste Management-17 Conference, LA-UR-16-28158.
- 2017 Snyder, E., S. Marcazak, L. Salazar, J. Fordham, S.P. Chu, D. Strobridge, K.H. Birdsell, K. Rich, **P.H. Stauffer**, The Impact of Soil Vapor Extraction at Material Disposal Area L, Los Alamos National Laboratory, Paper 17155, Waste Management-17 Conference, LA-UR 17-21706.
- 2017 Nguyen, M., Y. Zhang, L. Jun, X. Li, B. Bai, H. Wu, N. Wei, **P.H. Stauffer**, A Geostatistical Study in Support of CO<sub>2</sub> Storage in Deep Saline Aquifers of the Shenhua CCS Project, Ordos Basin, China, **Energy Procedia**, 114, July 2017, pp. 5826-5835.
- 2017 Ellett, K.M., R.S. Middleton, **P.H. Stauffer**, J.A. Rupp, Facilitating CCS Business Planning by Extending the Functionality of the SimCCS Integrated System Model, **Energy Procedia**, 114, July 2017, pp. 6526-6535.
- 2017 Pawar, R., R. Dilmore, S.P. Chu, Y. Zhang, C. Oldenburg, P.H. Stauffer, G. Guthrie, B. Brohmhal, Informing Geologic CO<sub>2</sub> Storage Site Management Decisions under Uncertainty: Demonstration of NRAP's Integrated Assessment Model (NRAP-IAM-CS), **Energy Procedia**, 114, July 2017, pp. 4330-4337.
- 2017 Dai, Z., Y. Zhang, **P.H. Stauffer**, T. Xiao, M. Zhang, W. Ampomah, C. Yang, Y. Zou, M. Ding, R.S. Middleton, R. Solitani, J. Bielicki, Injectivity Evaluation for Offshore CO<sub>2</sub> Sequestration in Marine Sediments, **Energy Procedia**, 114, July 2017, pp. 2921-2932.
- 2017 Hunter, K., J.M. Bielicki, Middleton, R.S., **P.H. Stauffer**, R.J. Pawar, D. Harp, D. Martinez, Integrated CO<sub>2</sub> Storage and Brine Extraction, **Energy Procedia**, 114, July 2017, pp. 6331-6336.
- 2017 Middleton, R.S. J.S. Levine. J.M. Bielicki, **P.H. Stauffer**, Industrial CO<sub>2</sub> and carbon capture: near-term benefit, long-term necessity, **Energy Procedia**, 114, July 2017, pp. 7601-7605.
- 2014 Bielicki, J.M., R.S. Middleton, J. Levine, **P.H. Stauffer**, An Alternative Pathway for Stimulating Regional Deployment of Carbon Dioxide Capture and Storage, GHGT-12, *Energy Procedia*, Volume 63, 2014, Pages 7215-7224.
- 2014 **Stauffer P.H.**, Middleton, Rupp, Bai, Li, System integration linking CO<sub>2</sub> Sources, Sinks, and Infrastructure for the Ordos Basin, China GHGT-12, *Energy Procedia*, Volume 63, 2014, Pages 2702-2709. (20)
- 2014 Pawar, Bronhal, Carroll, Chu, Dilmore, Gastelum, Oldenburg, **P.H. Stauffer**, Zhang, Guthrie, Quantification of Key Long-term Risks at CO<sub>2</sub> Sequestration Sites: Latest Results from US DOE's National Risk Assessment Partnership

- (NRAP) Project, GHGT-12, *Energy Procedia*, Volume 63, 2014, Pages 4816-4823  
Pages 4765-4773 2014
- 2014 Sullivan, E.J., SP Chu, RJ Pawar, **P.H. Stauffer**, The CO<sub>2</sub>-PENS Water Resource Module: evaluation of cost profiles and importance scenarios for brackish water extracted during carbon storage, GHGT-12, *Energy Procedia*, Volume 63, 2014, Pages 7205-7214.
- 2014 Robinson, Weaver, **P.H. Stauffer**, Nelson, Buschman, The Salt Defense Disposal Investigations (SDDI): Current Status and Future Plans, WM-14, LA-UR-13-29193.
- 2014 **Stauffer P.H.**, Robinson, Nelson, Harp, Jordan, Boikhalfa, Laybed, Ten Cate, Simulations in Support of the Salt Defense Disposal Initiative (SDDI): Water and Salt Transport Driven by Heat Generating Nuclear Waste in Bedded Salt, WM-14, LA-UR-13-27584.
- 2013 J.S. Levine, S. Kelkar, **P.H. Stauffer**, Hydraulic Fracturing During Injection of CO<sub>2</sub> into Deep Ocean Sediments, American Rock Mechanics Association Symposium, San Francisco CA, June 2013.
- 2013 Pawar, R.J., G. Brohmal, R. Dilmore, B. Foxall, E. Jones, C. Oldenburg, **P.H. Stauffer**, S. Unwin, G. Guthrie, Quantification of Risk Profiles and Impacts of Uncertainties as part of the US DOE's National Risk Assessment Partnership (NRAP)., *Energy Procedia*, Volume 37, pages 4765-4773.
- 2013 R.C. Surdam, Z. Jiao, Y. Ganshin, R. Bentley, M. Garcia-Gonzalez, S.A. Quillinan, J.F. McLaughlin, **P.H. Stauffer**, H. Deng, Characterizations of the CCUS Attributes of a High-priority CO<sub>2</sub> Storage Site in Wyoming, USA, *Energy Procedia*, Volume 37, 2013, Pages 3911-3918.
- 2013 A.J. Jordon, J.K. MacCarthy, **P.H. Stauffer**, G.A. Zyvoloski, M.A. Person, D.N. Anderson, Simulation of Radionuclide Gas Breakthrough from Underground Nuclear Explosions, Monitoring Research and Review, DTRA Project Meeting (10 pp)
- 2011 Surdam, R.C., Z. Jiao, **Stauffer, P.H.**, T.A. Miller, The key to commercial-scale geological CO<sub>2</sub> sequestration: Displaced fluid management. *Energy Procedia*, Volume 4, 2011, Pages 4246-4251
- 2011 Keating, G.N., Richard S. Middleton, Hari S. Viswanathan, **P.H. Stauffer**, Rajesh J. Pawar, How Storage Uncertainty Will Drive CCS Infrastructure, *Energy Procedia*, Volume 4, 2011, Pages 2393-2400
- 2011 **Stauffer, P.H.**, Pawar R.J, R.C. Surdam, Z. Jiao, Hailin Deng, B.C. Lettelier, H.S. Viswanathan, D.L. Sanzo, and G.N. Keating, Application of the CO<sub>2</sub>-PENS risk analysis tool to the Rock Springs Uplift, Wyoming. *Energy Procedia*, Volume 4, 2011, Pages 4084-4091
- 2011 Jiao Z., R. C. Surdam, Lifa Zhou, **P.H. Stauffer**, Tingting Luo, A feasibility study of geological CO<sub>2</sub> sequestration in the Ordos Basin, China, *Energy Procedia*, Volume 4, 2011, Pages 5982-5989.



- 2011 Stauffer, P.H. K.H. Birdsell, and W.J. Rice, 3-D Model Validation in Support of Site Closure, Material Disposal Area L, Los Alamos, NM, Waste Management 2011, Phoenix Arizona, March 7-11.
- 2009 **Stauffer, P.H.**, R.C. Surdam, Z. Jiao, T.A. Miller, Combining geologic data and numerical modeling to improve estimates of the CO<sub>2</sub> sequestration potential of the Rock Springs Uplift, Wyoming. *Energy Procedia*, (2009) Vol.1, iss.1, p.2717-2724
- 2007 **Stauffer, P.H.**, J.K., Hopkins, and T. Anderson, “A Soil Vapor Extraction Pilot Study in a Deep Arid Vadose Zone Part 2: Simulations in Support of Decision Making Processes”, in Proceedings of the Waste Management Conference, paper 7185, Tucson AZ, Feb 26-March 1 2007, 19 pages.
- 2007 Anderson, T, **P.H. Stauffer**, J. Hopkins, B. Stewart, P. Mark, **A Soil Vapor** Extraction Pilot Study in a Deep Arid Vadose Zone, Part I: Field Study Summary, Waste Management Conference 2007, February 25–March 1, 2007, Tucson, Arizona, paper 7311, 13 pages.
- 2006 **Stauffer, P.H.**, H.S. Viswanathan, R.J. Pawar, M.L. Klasky, and G.D. Guthrie M. Klasky. CO<sub>2</sub>-PENS: A CO<sub>2</sub> Sequestration Systems Model Supporting Risk-Based Decisions, in Proceedings of the XVI International Conference on Comp. Methods in Water Resources, edited by P. J. Binning P. K. Engesgaard, H.K. Dahle, G. F. Pinder and W.G. Gray. Copenhagen, Denmark, June, 2006. 8 pages.
- 2006 Pawar R.J., John Lorenz, Charles Byrer, Reid Grigg, Bruce Stubbs, Robert Benson, James Krumhansl, **Philip Stauffer**, Sequestration of CO<sub>2</sub> in a depleted sandstone oil reservoir: results of a field demonstration test, *Proceedings of the Greenhouse Gas Control Technologies Conference (GHGT8)* Trondheim, June 2006 (2006).
- 2006 Pawar R.J., Carey, S. Chipera, J. Fessenden, J. Kaszuba, G. Keating, P. Lichtner, S. Olsen, **P. Stauffer**, H. Viswanathan, H. Ziock and G. Guthrie, Development of a framework for long-term performance assessment of geologic CO<sub>2</sub> sequestration sites. In: N. Rokke, O. Bolland and J. Gale, Editors, *Proceedings of the Greenhouse Gas Control Technologies Conference (GHGT8)* Trondheim, June 2006 (2006).