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Authors: Kaveh Sookhak Lari, Colin D. Johnston, John L. Rayner, Greg B. Davis

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ACCEPTED MANUSCRIPT

Field-scale multi-phase LNAPL remediation: validating a new computational framework against sequential field pilot trials

Kaveh Sookhak Lari[a,b,d,1], Colin D. Johnston[a,b], John L. Rayner[a,b], Greg B. Davis[a,b,c]

[a]CSIRO Land and Water, Private Bag No. 5, Wembley WA 6913, Australia

[b]Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE)

[c]School of Engineering, Edith Cowan University, 270 Joondalup Drive, Joondalup, WA 6027, Australia

[d]School of Earth Sciences, The University of Western Australia, 35 Stirling Highway Crawley, WA 6009, Australia

[1] Corresponding author: E: kaveh.sookhaklari@csiro.au T: +61893336302

Highlights

- For the first time, a TMVOC-MP framework modelled multi-phase LNAPL recovery.
- Its multi-component feature allows simultaneous partitioning of various hazardous chemicals.
- For the first time, its field-scale performance on two supercomputers was compared.
- Results were verified using complex LNAPL recovery data from a contaminated site.
- It can define recovery endpoints and long-term risks caused by hazardous materials.

Abstract

Remediation of subsurface systems, including groundwater, soil and soil gas, contaminated with light non-aqueous phase liquids (LNAPLs) is challenging. Field-scale pilot trials of multi-phase remediation were undertaken at a site to determine the effectiveness of recovery options. Sequential LNAPL skimming and vacuum-

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