



Canadian Liquefaction Experiment Project (CANLEX)

Geographical location

Across Canada; primarily western Canada

When it began or was completed

Began in 1993; was completed in 2000.

Why a Canadian geotechnical achievement?

In the early 1990s, the characterization of loose sandy soils was an area of uncertainty in geotechnical engineering. Unlike clay soils, it was almost impossible to obtain undisturbed samples of loose sandy soils, especially at depth, using conventional methods. Thus, researchers at the University of Alberta, University of British Columbia, Carleton University, and Université Laval began to study the phenomenon of soil liquefaction to evaluate liquefaction potential at major mining sites in Canada. Their collaborative effort was called the *Canadian Liquefaction Experiment Project (CANLEX)*.

CANLEX was Canada's largest collaborative geotechnical research project involving academia, industry, and engineering consultancies. Involving over 30 researchers and professional practitioners. CANLEX included five research phases and fully characterized six field sites across Western Canada. CANLEX's key research findings improved the overall understanding of soil liquefaction and formed the industry's state-of-practice. For example, CANLEX set a consistent lexicon of definitions for liquefaction phenomena within Canada. Furthermore, the project improved the understanding of the safety of structures involving sand deposits which was immediately transferred to industry.

The legacy of CANLEX was the focus and coordination of Canadian geotechnical expertise on soil liquefaction. Its success was recognized in 1998, when CANLEX won the Association of Professional Engineers, Geologists, and Geophysicists of Alberta (APEGGA) Project Achievement Award.

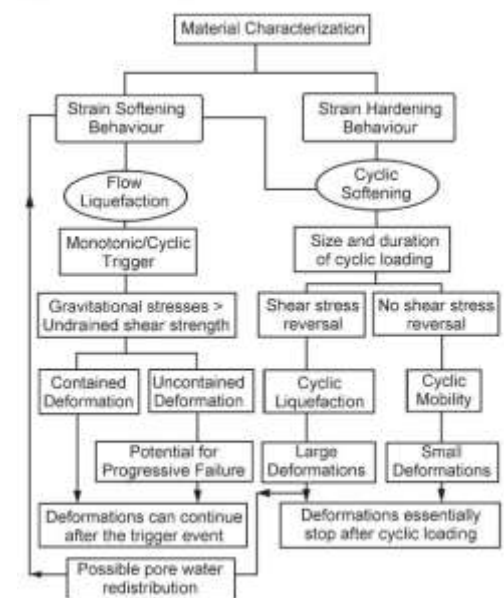
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Key Reference

Robertson, PK, (Fear) Wride, CE, List, BR, Atukorala, U, Biggar, KW, Byrne, PM, Campanella, RG, Cathro, DC, Chan, DH, Czajewski, K, Finn, WDL, Gu, WH, Hammamji, Y, Hofmann, BA, Howie, JA, Hughes, J, Imrie, AS, Konrad, J-M, Küpper, A, Law, T, Lord, RF, Monahan, PA, Morgenstern, NR, Phillips, R, Piché, R, Plewes, HD, Scott, D, Segó, DC, Sobkowicz, J, Stewart, RA, Watts, BD, Woeller, DJ, Youd, TL, Zavodni, Z. 2000. **The CANLEX project: summary and conclusions.** Canadian Geotechnical Journal, Vol 37, pp 563-591.

Figure



Suggested flow chart for evaluation of soil liquefaction (Fig 1 in Robertson et al, 2000).