

CHAPTER 5

CONCLUSION AND SUGGESTION

5.1. Conclusion

Based on the research done, it can be concluded that when sand soil of Moss Landing area on Monterey Bay, California, U.S.A. located below ground water table, where N_{60} value of the soil itself is relatively low and suffer from relatively high σ_v' value, when subjected to Loma Prieta earthquake loading, most likely soil losses some or all of its strength and causing liquefaction to happen. Soil improvement is needed to ensure soil does not subjected to liquefaction or even liquefaction resistant structure needed to make sure structure do not fail when earthquake come.

5.2. Suggestion

The research should be continued to analyze the liquefaction potential of soils with much more accurate parameters, either by doing laboratory test to get the exact value of soil parameters or developed and using better correlation equation to predict parameters value.

REFERENCES

- [1] Boulanger, R.W., Mejia, L.H., and Idriss, I.M. (1997). "Liquefaction at Moss Landing during Loma Prieta Earthquake". *Journal of Geotechnical and Geoenvironmental Engineering*, 123(5), pp. 453-467.
- [2] Hashash, Y.M.A., Musgrove, M.I., Harmon, J.A., Ilhan, O., Xing, G., Groholski, D.R., Phillips, C.A., and Park, D. (2020) "DEEPSOIL 7.0, User Manual". Urbana, IL, Board of Trustees of University of Illinois at Urbana-Champaign.
- [3] Center for Engineering Strong Motion Data (CESMD),, <http://strongmotioncenter.org/>.
- [4] Peck R.B., Hanson W.E., and Thornburn T.H. (1974). "Foundation Engineering". Wiley.
- [5] Hara A., Ohta T., Niwa M., Tanaka S. and Banno T. (1974). "Shear Modulus and Shear Strength of Cohesive Soils", *Soils and Foundations*, Vol. 14, No. 3, pp. 1-12.
- [6] WU J., Kammerer A.M., Riemer M.F., Seed R.B., Pestana J.M. (2004). "Laboratory Study of Liquefaction Triggering Criteria, 13th Conference on Earthquake Engineering", Vancouver, B.C., Canada, August 1-6, 2004.
- [7] Wair B.R., DeJong J.T., Shantz T. (2012). "Guidelines for Estimation of Shear Wave Velocity Profiles". Pacific Earthquake Engineering Research Center.
- [8] Carlton B. (2014). "An Improved Description of the Seismic Response of Sites with High Plasticity Soils, Organic Clays, and Deep Soft Soil Deposits." University of California, Berkeley.
- [9] Beaty, M.H., and Perlea, V.G., (2011). "Several Observations on Advanced Analyses with Liquefiable Materials", 31st Annual USSD Conference, San Diego, California.
- [10] Mohr, H., Draper, S., and White, D. (2013). "Free Field Sediment Mobility on Australia's North West Shelf,. Proceedings of the ASME 2013 22nd International Conference on Ocean, Offshore and Arctic Engineering.

- [11] Hettiarachchi, H., and Brown, T. (2009). "Use of SPT Blow Counts to Estimate Shear Strength Properties of Soils: Energy Balance Approach", *Journal of Geotechnical and Geoenvironmental Engineering*, 135(6), pp. 830-834.

