

TABLE OF CONTENTS

COVER	i
APPROVAL PAGE	ii
DECLARATION	iii
PREFACE	iv
LIST OF TABLES	viii
LIST OF FIGURES.....	ix
LIST OF SYMBOLS	xii
ABSTRACT	xiv
CHAPTER 1 INTRODUCTION	1
1.1 Background.....	1
1.2 Statement of Problem	2
1.3 The Purposes and Objectives.....	2
1.4 The Scope of Research	2
1.4.1 Research area	2
1.4.2 The scope of work.....	4
1.4.3 Previous research	4
1.5 Limitation	5
CHAPTER 2 LITERATURE REVIEW AND THEORITICAL BACKGROUND	6
2.1 Historical Review in The Research Location	6
2.2 Influencing Factor of Slope Stability	9
2.3 Slope Stability Analyses.....	10
2.3.1 Infinite slope stability analysis	11

2.3.2 Back analysis	12
2.4 Visco-Plastic Model	13
2.4.1 Visco-plastic model for dynamic simulation	13
2.4.2 Equations of Visco-Plastic Model	15
2.5 Ground Water Level on The Slope Stability	18
2.5.1 Tank model	18
2.5.2 Correction of Simulation Result	20
2.6 Landslide Hazard and Landslide Risk	21
2.7 Landslide Monitoring and Early Warning System	21
CHAPTER 3 METHODOLOGY	24
3.1 Research Methodology	24
3.2 Phases of Research	24
3.2.1 Research preparation	25
3.2.2 Detail Investigation	25
3.2.3. Data analysis	27
3.2.4. Results and conclusions	27
3.2.5. Report	27
CHAPTER 4 DATA ANALYSIS AND RESULTS	29
4.1 Morphology	29
4.2 Lithology	30
4.3 Geotechnical Investigation	32
4.3.1 Field investigation	32
4.3.2 Laboratory Test Results	37

4.4 Rainfall and Groundwater Level	39
4.4.1 Rainfall and groundwater condition	39
4.5 Tank Model Simulation.....	42
4.5.1 Correction the simulation.....	43
4.5.2 Groundwater levels simulation results.....	48
4.6 Back Analysis	49
4.7 Slope Stability and Velocity	53
4.7.1 Analysis method and input data.....	53
4.7.2 Correction the Visco-plastic model	55
4.7.3 The correlation of groundwater levels fluctuation and safety factor	57
4.7.4 The correlation of groundwater levels and velocity	59
4.7 Landslide hazard and risk.....	61
4.9 The landslide monitoring and early warning system.....	64
CHAPTER 5 CONCLUSION AND RECOMMENDATION.....	67
5.1 Conclusion.....	67
5.2 Recommendation.....	67
REFERENCES.....	68
APPENDIX.....	71