

TABLE OF CONTENT

ACKNOWLEDGMENTS	III
ABSTRACT	IV
List of Figures	VIII
List of Tables.....	X
List of Annexes	XIII
LIST OF ABBREVIATIONS	XIV
Chapter One: Introduction.....	1
1.1 Background.....	2
1.2 Objectives	4
1.3 Research Question	4
1.4 Research Motivation.....	4
1.5 Significance	5
1.6 Beneficiaries	5
1.7 Obstacles and Problems.....	6
1.8 Structure of the thesis	6
Chapter Two: Literature Review	7
2.1 Introduction	8
2.2 Wastewater Sampling	9
2.3 Wastewater Quantification	11
2.4 Wastewater Characteristics.....	11
2.4.1 Pollution Load	12
2.4.2 Heavy Metals.....	12
2.5 Water and nitrogen mass balance	15
Chapter Three: Material and Methods	17
3.1 Study Area	18
3.1.1 Description	18
3.1.2 Main Environmental Problems in Fara'a Catchment	19
3.1.3 Nablus-East Wastewater Collection System, Cesspits and Outlets	20
3.2 Methodology.....	26
3.2.1 Data Collection.....	28
3.2.2 Data input and analysis in ArcMap 9.3	29
3.2.3 Water Consumption Approach.....	30

3.2.4 Wastewater Flow Measurements	31
3.2.5 Sampling Method and Wastewater Characterization	35
3.2.6 Mass Balance Calculations.....	39
3.2.7 Recharge and Pollutant Load Estimations	39
Chapter Four: Results and Discussion	41
4.1 General.....	42
4.2 Water and Wastewater Mass Balance.....	42
4.2.1 Sub-main Catchment	42
4.2.2 Main Catchment Mass Balance.....	47
4.2.3 Summary of Water and Wastewater Mass Balance Results.....	51
4.3 Characterization of Wastewater Quality.....	53
4.4 Wastewater pollutant load	66
4.5 Results and Literature Comparison	69
4.6 Discussion.....	70
Chapter Five: Conclusions and Recommendations.....	72
5.1 Conclusions	73
5.2 Recommendations	73
ANNEXES	74
REFERENCES	102