Acknowledgements

First and foremost, I would like to thank the God Almighty who enabled me to ascend another step of my destination by accomplishing this piece of work.

It seems really a tough job to express the sense of gratitude to my guide Dr. Nirmal Kumar J.I., Professor and Head, P.G. Department of Environmental Science and Technology, ISTAR, under whose through and valuable guidance, with great effort, incredible moral support and encouragement and financial aid to carry several analyses including DNA sample sequencing, this research comes to its successful end. I appreciate all his contributions of time, ideas, immaculate guidance and financial support to make my Ph.D. experience productive and stimulating. The joy and enthusiasm he has for his research was contagious and motivational for me, even during tough times in the Ph.D. pursuit. Financial assistance provided by The Ministry of Environment & Forests, Government of India, New Delhi, India also needs to be highly acknowledged.

At this moment, I feel an immense pleasure to acknowledge Dr. Rita N. Kumar, HOD, Department of Biological and Environmental Sciences, NVPAS for her unwavering help and moral support during this work. I am indebted to her for all her help especially during the challenging times, which have certainly made the difference.

I would especially like to thank Dr. V.S. Patel, Director, SICART and Dr. B.G. Patel, Director, ISTAR, for providing excellent laboratory facilities and congenial scientific environment. I am also grateful to Dr. Jigar Patel, Professor, Department of Industrial Chemistry, ISTAR, for permitting me to use the laboratory and other resources to carry out a part of this work.

I gratefully acknowledge my friends and lab mates Mrs. Manishita Das, Dr. Sudeshna Chakraborty, Dr. Cini Oommen, Dr. Shailendra Vijol, Mr. Rohit Bhoi, Mr. Sajish P.R., Mr. Kanti Patel, Mr. Basil George, Mrs. Anubhuti Bora and Ms. Rajal Patel for their sustained
co-operation and support to complete my present piece of work. Dr. Hiren Soni and Dr. Tanushree Bhattacharya, Assistant Professor, ISTAR, deserve special mention for their help and direction in statistical analysis. I am also thankful to Mr. Hitesh Patel, Mr. Ritesh Patel, Mr. Pramod, Mr. Vijay Patel and the other non-teaching staff of ISTAR for their assistance in course of the work.

I wish to thank my best friends Neeta, Aji, Darshu, Vaibhav, Priyanka and Poonam for helping me get through the challenging times, and for all the emotional support and camaraderie they provided.

My husband Dr. Sanjeev Kumar is the epitome of care and understanding. Words do not suffice to express my indebtedness for him as he always stood by me throughout this research work. His affectionate blessings, undoubting support and quiet assertiveness were a source of constant inspiration during the present endeavor. He is driving force behind everything I do; His love, support and understanding never elude me.

I would also like to thank my in-law's papa ji, mummy ji and Manoj bhaya for their love and trust in me. I am indebted to my in-law family members for being with me always and for the faith and confidence bestowed upon me.

Last but not the least, my deepest gratitude goes to my Naniji for her unflagging love and blessing throughout my life. I am indebted to my father and mother for their understanding and ever-lasting love. They have always supported me in every way and whatever I chose in my life. This thesis was simply impossible without them. I express my heartfelt affection to my elder sisters- Babbi di, Bandu di and their family, especially the tiny tots Shrey, Preet and Kavya for helping me to forget all my worries with their playful and smiling faces.

Manmeet Kaur Amb