628.3 BOW

CONTENTS

		Page
1.	Introduction	1
	1.1 Background	1
	1.2 Purpose	1
	1.3 References	1
2.	Theory, Prediction, and Measurement of Odor and Corrosion	2
	2.1 Introduction	2
	2.2 Compounds Causing odor and Corrosion	2
	2.3 Mechanisms for the Generation of Hydrogen Sulfide	7
	2.4 Mechanisms of Corrosion	16
	2.5 Predicting Sulfide Buildup and Corrosion in Sewers	19
	2.6 Approach to Investigating Odor and Corrosion	24
	2.7 Measurement and Monitoring of Corrosion and Odor	28
	2.8 Toxicity and Safety Practices	30
	2.9 References	32
3.	Odor and Corrosion Control in Existing Wastewater Collection systems	34
	3.1 Introduction	34
	3.2 Improving the Oxygen Balance	34
	3.3 Chemical Addition	52
	3.4 Case Histories	60
	3.5 References	65
4.	Odor and Corrosion Control in Existing Wastewater Treatment Plants	68
	4.1 Introduction	68
	4.2 Sources of Odors in Wastewater Treatment Plants	68
	4.3 Control of Odors in Existing Wastewater Treatment Plants	70
	4.4 Corrosion in Wastewater Treatment Plants	93
	4.5 Corrosion Control Techniques at Existing Wastewater Treatment Plants	94
	4.6 Case Histories	95
	4.7 References	99
5.	Designing to Avoid Odor and Corrosion in New Wastewater Collection Systems	101
	5.1 Introduction	101
	5.2 Hydraulic Design	101
	5.3 Ventilation of Sewers	108
	5.4 Selection of Materials	110
	5.5 References	114
6.	Designing to Avoid Odor and Corrosion in New Wastewater Treatment Facilities	115
	6.1 Introduction	115
	6.2 Common sites of Odor Generation	116
	6.3 General Design Considerations for Avoiding Odor Generation and Release	117
	6.4 Design Procedures for Specific Odor-Producing Unit Processes	119
	6.5 General Design Considerations for Avoiding Corrosion	124
	6.6 Paint and Coatings	125
	6.7 Selection of Materials	128
	6.8 References	130