

# Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>The Historical Context for Examining Industrial Pollution</b>	<b>5</b>
	Introduction	5
	Protection of Surface Water	7
	Land Disposal, Landfilling, and Their Regulation	8
	Understanding of Pollution	10
	Waste Discharges were Allowable and Nuisances Hard to Predict	11
	Pollution was Temporary	11
	Pollution Definition Limitations	12
	Evolution of Pollution Understanding	13
	The Gas Manufacturing Trade	14
	References	15
<b>3</b>	<b>Environmental Sampling</b>	<b>19</b>
	Introduction	19
	Representative Sampling	19
	Accurate Measurement	22
	Amazing Results	23
	References	23
<b>4</b>	<b>Environmental Analytical Chemistry 101</b>	<b>25</b>
	Introduction	25
	Fundamentals	26
	The Instruments	28
	Analysis	29
	How to Consider the Results	29
	References	29

<b>5</b>	<b>Environmental Forensics</b> .....	31
	Introduction .....	31
	Typical Applications and Advantages .....	32
	Limitations .....	33
	When to Use Environmental Forensics .....	34
	References .....	34
<b>6</b>	<b>Environmental Data Visualization</b> .....	35
	Introduction .....	35
	A Picture Is Worth Many Tables .....	35
	Data, Metadata, Concepts, and Tools .....	36
	Common Data Visualizations .....	37
	The Future .....	41
<b>7</b>	<b>Environmental Modeling</b> .....	43
	Introduction .....	43
	Modeling 101 .....	44
	Basic Environmental Models .....	45
	When to Model, What to Look For? .....	47
	References .....	48
<b>8</b>	<b>Risk Assessment</b> .....	49
	Introduction .....	49
	Exposure Analysis .....	50
	Toxicity Analysis .....	52
	What It Means? .....	52
	References .....	53
<b>9</b>	<b>Water Quality and Its Management</b> .....	55
	Introduction .....	55
	Definitions and Measurement of Water Quality .....	56
	Sources of Water Pollution .....	57
	Municipal Wastewaters .....	57
	Industrial Wastewaters .....	58
	Stormwater .....	58
	Leaks, Spills, and Mining Waters .....	59
	Wastewater Treatment .....	59
	Water Quality Regulation .....	60
	References .....	62

<b>10 Air Quality and Its Management</b> .....	63
Introduction .....	63
Definitions and Measurement of Air Quality .....	64
Sources of Air Quality Problems .....	65
Air Emissions Treatment .....	66
Air Quality Regulation .....	67
References .....	69
<b>11 The National Contingency Plan</b> .....	71
Introduction .....	71
NCP Outline .....	72
Response Actions .....	74
The Nine Criteria .....	75
References .....	76
<b>12 Technical Impracticability</b> .....	79
Introduction .....	79
Typical Problems, Appropriate Perspective .....	80
USEPA TI Waiver Guidance .....	81
More Perspective .....	83
References .....	83
<b>13 Superduperfund</b> .....	85
Introduction .....	85
Superfund Remedy Statistics .....	86
RCRA Requirements .....	87
When RCRA Meets CERCLA .....	88
References .....	88
<b>14 Heads in the Sand</b> .....	89
Introduction .....	89
The Brutal Facts .....	89
Dispelling the Myth .....	91
Rational Policy .....	92
References .....	92
<b>15 The Safety of Chemical Products</b> .....	95
Introduction .....	95
Product Liability .....	96
Product Safety Rating .....	98
Product Gestalt .....	99
References .....	99
<b>Index</b> .....	101

<http://www.springer.com/978-3-319-06277-8>

Environmental Perspectives  
A Brief Overview of Selected Topics  
Shifrin, N.  
2014, IX, 102 p. 5 illus., Softcover  
ISBN: 978-3-319-06277-8