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# WINERY UTILITIES

Planning, Design  
and Operation

**David R. Storm**  
Storm Engineering, Inc.



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To wine lovers everywhere, whose  
enthusiasm for and continued loyalty to  
the remarkable beverage, fuels the  
wine industry engine.

# TABLE OF CONTENTS

PREFACE	xiii
ACKNOWLEDGMENTS	xv
<b>1 INTRODUCTION</b>	<b>1</b>
Winery Classification	1
Required Utility Services	4
Electrical Power	4
Refrigeration and Air Conditioning	6
Telecommunications	7
Sanitation, Steam and Hot Water	8
Potable Water Supply	8
Irrigation Water Supply and Reclaimed Wastewater	9
Sanitary Wastewater	10
Process Wastewater	10
Liquified Petroleum Gas Systems	11
Fire Protection Systems	12
Solid Waste Systems	13
Winery Utilities and Health and Safety Programs	14
Glossary	14

<b>2</b>	<b>ELECTRICAL SYSTEMS</b>	<b>17</b>
	Electrical Load Planning	17
	Power Distribution System Alternatives	19
	Voltage Considerations and Preferences	20
	Electrical Requirements for Process Equipment	24
	Electrical Requirements for Site Utility Equipment	25
	Electrical Power Considerations for Non-U.S. Wine-Producing Countries	26
	Analysis of Rate Structures and Service Contracts	27
	Energy Considerations in Winery Lighting	29
	Controls, Instrumentation, Utility Systems Monitoring Status, and Alarms	31
	Power Loss and Surge Protection	34
	Operation and Maintenance of Electrical Systems	35
	Glossary	38
<b>3</b>	<b>TELECOMMUNICATIONS</b>	<b>45</b>
	Definition	45
	Business Aspects and Winery Communication Needs	45
	Technology Changes Influencing Equipment Choices	46
	System Choices, Limitations, and Advantages	50
	Mobile Communication Systems	50
	Cellular Telephones	51
	Pagers	51
	Facsimile Machines	52
	Other Devices	53
	Telecommunications Security	54
	Computers and Wine-Industry-Focused Software	56
	Maintenance and Operation of Telecommunication Systems	58
	Glossary	58
<b>4</b>	<b>SANITATION, STEAM, AND HOT WATER</b>	<b>64</b>
	Winery Design Concepts, Winery Age, and Sanitation	64
	Cleaning System Options	67
	Water Use Planning Guidelines (Cleaning)	75
	Boilers and Boiler Water Quality	75
	Primer on Boilers	77
	Alternative Energy Sources for Hot Water	79
	Maintenance and Operation of Steam/Hot-Water Systems	80
	Glossary	84
<b>5</b>	<b>REFRIGERATION, VENTILATION, AND AIR CONDITIONING</b>	<b>86</b>
	Scope	86
	Basic Principles	87
	Refrigerants	93
	Fermentation Heat Balance and Tank Thermal Stratification	96
	Ventilation and Night-Air Cooling	98

Insulation and Solar Energy Considerations	100
Operation and Maintenance	104
Glossary	107
<b>6 POTABLE WATER SUPPLY SYSTEMS</b>	<b>112</b>
Winery Site Water Resource Assessments	112
Prepurchase Winery Site Analysis	112
Well Casings	119
Well-Drilling Logs and Records	120
Water-Quality Assessment	124
Pump Efficiency Test	128
Well Abandonment	133
Land Use Conversion Water Use Equivalency Test	134
Water Dowsers	135
Water Demand Calculations	136
Winery Water Development and Environmental Impact Issues	141
Pressure Requirements	143
Water Meters	147
Water Storage	151
Water Treatment	161
Conventional Versus Package Treatment System	162
Problem Minerals	163
Disinfection	165
Water Conservation	167
Piping Pipe Materials, and Secondary Contamination	170
Bottled-Water Service	171
Standby Emergency Power	171
Economical Oversizing of Water System Components for	
Future Expansion	173
Water System Operation and Maintenance	174
Glossary	175
<b>7 IRRIGATION WATER SUPPLY SYSTEMS AND RECLAIMED WASTEWATER</b>	<b>181</b>
Integration of Winery and Vineyard Functions	181
Conflicts in Recycled Water Supply and Vineyard Irrigation Demand	181
Vineyard Water Requirements	183
Systems and Equipment	186
Operation and Maintenance of Reclaimed Wastewater Drip	
Irrigation Systems	190
Glossary	191
<b>8 WASTEWATER SYSTEMS</b>	<b>195</b>
Overview and System Separation Philosophy	195
Treatment and Disposal of Sanitary Wastewater	196
Design Flows	197
Sanitary Wastewater Characteristics	198



Conventional Septic Tank and Leachfield System Components	201
Sewage Pump Stations	204
Package Treatment Plants and Other Above-Ground Alternatives (Sanitary Wastewater)	212
Alternative Wastewater Systems (Specially Engineering Systems; Sanitary Wastewater)	216
Operational and Maintenance of Sanitary Wastewater Systems	222
Winery Process Wastewater	225
Wastewater Flows	225
Process Wastewater Characterization	227
Aboveground Aerobic Waste Treatment Systems and Performance Standards	236
Treatability of Winery Process Wastewater	237
Aerobic Treatment Options and Equipment Choices	242
Clarification and Settling Aids	245
System Expansion and Equipment Choices	248
Wastewater Metering	253
Winter Storage Requirements and Water Balance	254
Other Reclaimed Wastewater Reuse Options	257
Aquaculture	257
Landscape Irrigation	258
Fire Protection	258
Off-Site Use	259
Seasonal Wetlands and Wildlife Habitat Improvement	260
All-Weather Access	260
Fencing and Signage	260
Operation and Maintenance of Process Wastewater Treatment and Disposal Systems	261
Responsibility of Wastewater System Designer	261
Elements of an O&M Manual	262
Staffing and Service Maintenance Contracts for Wastewater Systems	268
Glossary	271
<b>9 LIQUIFIED PETROLEUM GAS SYSTEMS</b>	<b>278</b>
Introduction	278
Gaseous Fuel Characteristics	279
Design Details	280
Odorized LP Gas, Forklift Garaging, and Gas Leak Detection	283
Pressure Relief Valves	285
Operational Maintenance of LP-Gas Systems	285
Other Forklift Options	286
Glossary	286
<b>10 FIRE PROTECTION SYSTEMS</b>	<b>288</b>
Winery Fire Hazard and Occupancy Class	288
Fire Threats	290

Structural Features for Fire Prevention and Spread Containment	295
Fire Protection System Testing Institutes	296
Fire Protection Water Supply Systems	301
General Considerations	301
Fire Flow Rate and Duration	301
Fire Protection Storage Facilities	309
Fire Flow Pressure	315
Fire Pumps	316
Fire Alarms and Instrumentation	323
Sprinkler Systems	327
Overview	327
Sprinkler Design and Selection Considerations	329
Miscellaneous Fire Protection Equipment and Apparatus	335
Fire Hydrants	335
Interior and Exterior Fittings and Equipment	338
Portable Fire Extinguishers	340
Operation and Maintenance of Fire Protection Systems	341
Glossary	343
<b>11 SOLID WASTE SYSTEMS</b>	<b>349</b>
Overview	349
Laws and Regulations Governing the Handling of Solid Waste	350
Winery Solid Waste Characterization	352
Winery Solid Waste	353
Vineyard Solid Waste	366
Winery Waste Generation Rate Estimates	369
Solid Waste Containers and Equipment	372
Solid Waste System Operation and Maintenance	376
Wineries and Adopt-a-Highway Programs	377
Glossary	378
<b>12 WINERY UTILITIES AND HEALTH AND SAFETY PROGRAMS</b>	<b>382</b>
Introduction	382
Human Behavior and High-Risk Job Activities	384
Workers' Compensation Law (WCL)	385
Winery Operations and Air Resources	386
Utility Systems as Air-Pollution Sources	386
Indoor Air Quality	386
Respiratory Protection	389
Noise	391
Confined Space Regulations	393
Machinery Guards, Walking and Working Surfaces	393
Site Utilities and Health and Safety Planning	396
Electrical Systems	397
Refrigeration, Ventilation, and Air Conditioning	398
Telecommunications	399
Sanitation, Steam and Hot Water	399

Potable Water Systems	399
Wastewater Systems	400
Liquified Petroleum Gas Systems	402
Fire Protection Systems	402
Solid Waste Systems	402
Accident Prevention Plan	402
Glossary	421
<b>Appendix</b>	<b>425</b>
<b>Index</b>	<b>428</b>

# PREFACE

This book has been written for an eclectic audience of winery developers (owners), winemakers with utility responsibilities (real or implied), winery design professionals (architects and engineers), and university-level enology professors, all of whom at sometime in their careers must address the subject of winery site utilities as a distinct and important element of their jobs.

Wine and other fermented beverages in one form or another are produced commercially in almost all temperate zones of the world. Utility requirements for wineries, which use grapes as the fermentable sugar source, are the focus of this reference book, although similarities in fundamental production processes for other subdivisions of the fermented beverage industry may find useful reference information in the chapters which follow.

Wine production methods may differ somewhat from country to country, but the sizing, need for reliability, ease of operation, and cost-effectiveness of water, wastewater, electrical, fire protection, and other support systems remain nearly universally constant. Of necessity, the author's past planning and design experience with nearly 60 winery utility systems, will

emphasize contemporary design fundamentals related to the U.S. wine industry. However, where possible, opportunities will be taken to relate American practice to, for example, European, Australian, and South American wine industries where discrete differences in utility systems have been observed by the author or discovered in the literature research that was part of the production effort for this volume.

A glossary of terms has been included with each chapter, although the structure of the text, illustrations, and references presumes a limited technical knowledge or experience with utilities nomenclature on the part of the reader.

Finally, this book is not meant to serve as a substitute for the services of competent design professionals. Architects and engineers must still play an important role in the planning, design, and construction of new wineries and their utility systems, and in the expansion of existing facilities to meet new and enlarged wine production goals.

The last decade has, more than any other time in recent history, coalesced worldwide thought to develop principles for the universal protection of freshwater, marine, terrestrial, and atmospheric resources. The wine industry has an opportunity to lead in the development of utility systems which both conserve and protect land, air, and water resources, and at the same time remain cost competitive in domestic and world markets.

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