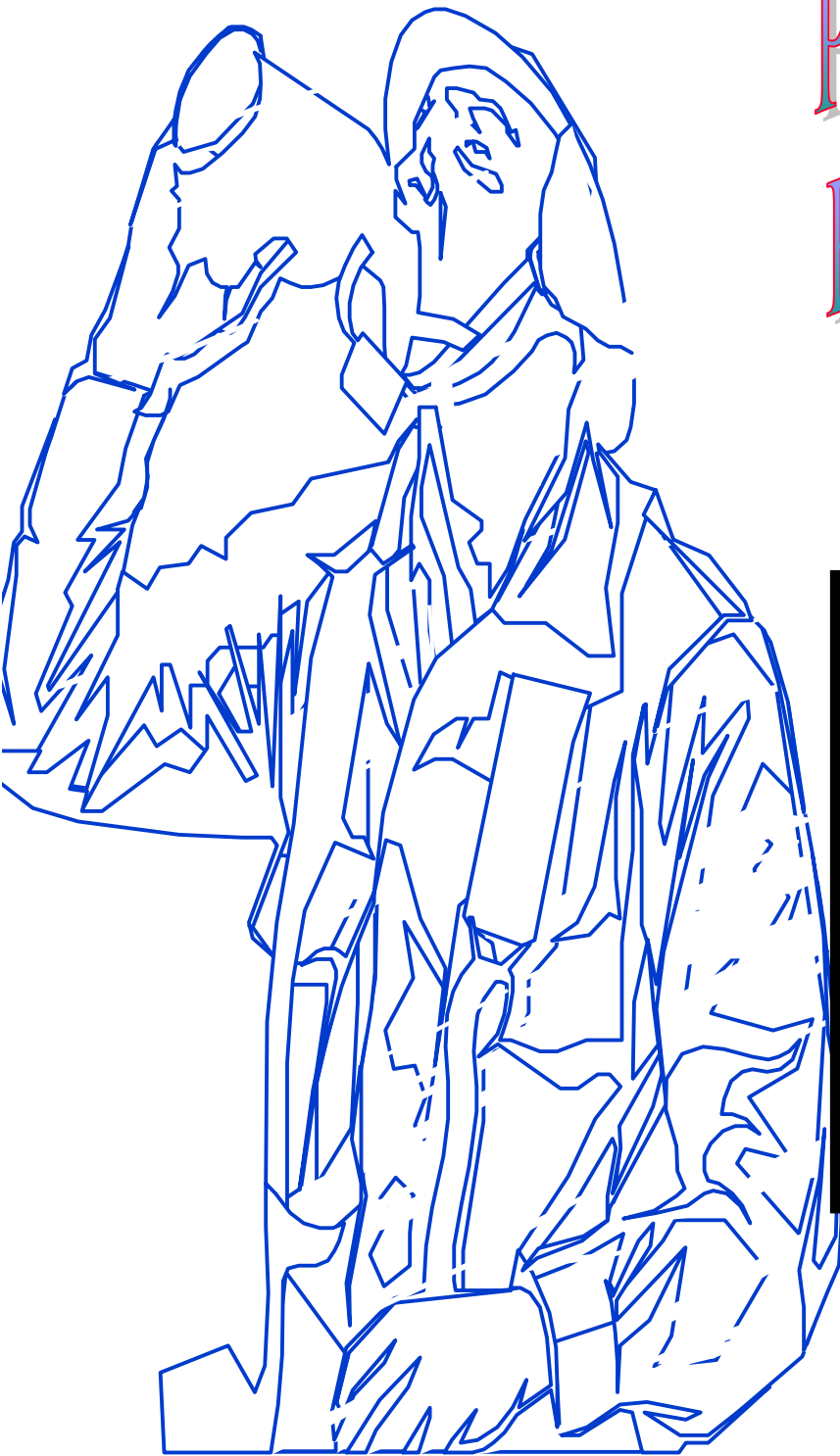


**DIRECTORATE OF COMBAT DEVELOPMENTS FOR QUARTERMASTER  
UNITED STATES ARMY COMBINED ARMS SUPPORT COMMAND  
FORT LEE, VIRGINIA 23801-1809**

# POTABLE WATER PLANNING GUIDE

**15 JUNE, 1999**



**POTABLE WATER CONSUMPTION PLANNING FACTORS  
BY ENVIRONMENTAL REGION AND COMMAND LEVEL**

# TABLE OF CONTENTS

<b>PREFACE</b>	i
<b>HOW TO USE THIS GUIDE</b>	ii

## **SECTION I: ARMY POTABLE WATER CONSUMPTION PLANNING FACTORS**

*A review of Army management, planning, and proponency responsibilities associated with the Army's designation as DOD Executive Agent for water resources management followed by a summary of revised standard Potable Water Planning Factors by climatic environment for Conventional theaters, Integrated theaters, and discrete population set/workload/equipment related water consumption in all theaters.*

<b>A. GENERAL</b>	
1. References	I-1
2. Army Executive Agency Responsibilities	I-1
3. Army Water Proponency	I-2
4. Water Conservation and Supply Discipline	I-3
<b>B. ASSUMPTIONS</b>	I-3
<b>C. WATER CONSUMPTION PLANNING FACTOR TABLES</b>	I-5
TABLE 1. Conventional Theater, Military Gal/Man/Day Planning Factors	I-6
TABLE 2. Integrated Theater, Military Gal/Man/Day Planning Factors	I-7
TABLE 3. All Theaters, Discrete Population Set/Workload/ Equipment Planning Factors	I-8
<b>D. GLOSSARY</b>	
1. Acronyms	I-9
2. Definitions	I-11



# TABLE OF CONTENTS

## SECTION II: WATER CONSUMPTION AND PLANNING FACTOR COMPUTATION

*A discussion of the currently recognized Army force/mission operations that consume water, and a detailed description and rationale for the computation of the standard Potable Water Planning Factors presented in Section I of this Planning Guide. Factors are provided for both Conventional and Integrated theaters by climatic environment.*

### A. CONVENTIONAL THEATER FORCE WATER CONSUMPTION

1.	Universal Unit Level Water Requirements	II-A-1
	a. Water Consumption	
	b. Standard Gal/Man/Day Potable Water Planning Factors	
2.	Central Hygiene, Shower, and Laundry Operations	II-A-3
	a. Water Consumption	
	b. Standard Gal/Man/Day Potable Water Planning Factors	
3.	Medical Operations	II-A-5
	a. Water Consumption	
	b. Standard Gal/Day Facility Potable Water Planning Factors	
	c. Standard Gal/Man/Day Potable Water Planning Factors	
4.	Mortuary Affairs Operations	II-A-7
	a. Water Consumption	
	b. Standard Gal/Man/Day Potable Water Planning Factors	
5.	Engineer Operations	II-A-8
	a. Water Consumption	
	b. Standard Gal/Man/Day Potable Water Planning Factors	
6.	Aircraft Maintenance Operations	II-A-9
	a. Water Consumption	
	b. Standard Gal/Man/Day Potable Water Planning Factors	



# TABLE OF CONTENTS

## SECTION II: WATER CONSUMPTION AND PLANNING FACTOR COMPUTATION (CONT.)

### B. INTEGRATED THEATER FORCE WATER CONSUMPTION

- |    |  |        |
|----|--|--------|
| 1. | Universal Unit Level Water Requirements  | II-B-1 |
|    | a. Water Consumption   |        |
|    | b. Standard Gal/Man/Day Potable Water Planning Factors                                 |        |
| 2. | Central Hygiene, Shower, and Laundry Operations  | II-B-3 |
|    | a. Water Consumption   |        |
|    | b. Standard Gal/Man/Day Potable Water Planning Factors                                 |        |
| 3. | Medical, Mortuary Affairs, Engineer, and Aircraft Maintenance Operations               | II-B-4 |
|    | a. Standard Medical Facility Gal/Day Potable Water Planning Factors                    |        |
|    | b. Standard Medical Operations Gal/Man/Day Potable Water Planning Factors              |        |
|    | c. Standard Mortuary Affairs Operations Gal/Man/Day Potable Water Planning Factors     |        |
|    | d. Standard Engineer Operations Gal/Man/Day Potable Water Planning Factors             |        |
|    | e. Standard Aircraft Maintenance Operations Gal/Man/Day Potable Water Planning Factors |        |
| 4. | NBC Decontamination Operations   | II-B-6 |
|    | a. Individual Soldier NBC Decontamination Water Consumption                            |        |
|    | b. Individual and Unit Equipment NBC Decontamination Water Consumption                 |        |
|    | c. Standard Gal/Man/Day Potable Water Planning Factors                                 |        |

# TABLE OF CONTENTS

## SECTION II: WATER CONSUMPTION AND PLANNING FACTORS (CONT.)

### C. DISCRETE POPULATION SET/WORKLOAD/EQUIPMENT RELATED WATER CONSUMPTION

1. Enemy Prisoner of War (EPW) and Civilian Internee/Refugee Operations      II-C-1
  - a. Water Consumption
  - b. Standard Gal/Man/Day Potable Water Planning Factors
  
2. Force Provider Operations      II-C-2
  - a. Military Mission Operations Water Consumption
  - b. OOTW Mission Operations Water Consumption
  - c. Standard Gal/Site/Day Potable Water Planning Factors
  - d. Standard Gal/Man/Day Potable Water Planning Factors
  
3. Redeployment Vehicle Washrack Operations      II-C-4
  - a. Major End Item Wash Water Consumption
  - b. Standard Gal/Unit Potable Water Planning Factors
  
4. Watercraft Maintenance Operations      II-C-5
  - a. Water Consumption
  - b. Standard Gal/Vessel/Day Potable Water Planning Factors

# TABLE OF CONTENTS

## SECTION III: POTABLE WATER PLANNING FACTORS BY ARMY FORCE ECHELON/COMMAND LEVEL

*Gallon/Man/Day potable water planning factors based on environmental region consumption requirements, related functional mission profiles, and the standard Gal/Man/Day potable water planning factors derived in Section II.*

### A. CONVENTIONAL THEATER PLANNING

1. Small Force (Company Through Brigade) III-A-1
  - a. Maneuver Company  
Battalion/Separate Company  
Maneuver/Separate Brigade
  - b. Non-organic Small Force Functional Mission Requirements
  - c. Other Theater Functional Mission Potable Water Requirements
2. Medium Force (Divisions or EAD Division Force Equivalents) III-A-3
  - a. Division
  - b. Non-organic Division Force Functional Mission Requirements
  - c. EAD Division Force Equivalent
  - d. Other Theater Functional Mission Potable Water Requirements
3. Large Force (One or More Corps'/General Theater Force) III-A-5
  - a. Corps/General Theater
  - b. Other Theater Functional Mission Potable Water Requirements

### B. INTEGRATED THEATER PLANNING

1. Small Force (Company Through Brigade) III-B-1
  - a. Maneuver Company  
Battalion/Separate Company  
Maneuver/Separate Brigade
  - b. Non-organic Small Force Functional Mission Requirements
  - c. Other Theater Functional Mission Potable Water Requirements
2. Medium Force (Divisions or EAD Division Force Equivalents) III-B-3
  - a. Division
  - b. Non-organic Division Force Functional Mission Requirements
  - c. EAD Division Force Equivalent
  - d. Other Theater Functional Mission Potable Water Requirements
3. Large Force Echelon/Command Level III-B-5  
(One or More Corps'/General Theater Force)
  - a. Corps/General Theater
  - b. Other Theater Functional Mission Potable Water Requirements

## TABLE OF CONTENTS

### **SECTION IV: POTABLE WATER AND TRANSPORTATION UNIT CAPABILITIES**

*A summary of general Army Potable Water unit purification, storage, and distribution capabilities for separate brigade, divisional and non-divisional force elements.*

A.	WATER UNIT CAPABILITIES	IV-A-1
	1. Command and Control Units	IV-A-1
	2. DS/GS Non-Divisional Units	IV-A-1
	3. Divisional and Separate Brigade Units	IV-A-3
	4. Arid Augmentation Units	IV-A-5
B.	TRANSPORTATION UNIT CAPABILITIES	IV-B-1
C.	WATER QUALITY ANALYSIS SET - PURIFICATION DENSITY IN QM WATER UNITS	IV-C-1

### **SECTION V: POTABLE WATER PRODUCTION GRAPHS**

*Graphs showing potable water production capability of each type of Army ROWPU as a function of source water temperature and Total Dissolved Solids.*

### **SECTION VI: CONSUMABLES**

*Estimated Consumable requirements (chemicals, filters and RO elements) expressed in 5 day/100 operational-hour increments.*

A.	600 GPH ROWPU	VI-A-1
B.	3000 GPH ROWPU	VI-B-1
C.	CALCIUM HYPOCHLORITE REQUIREMENTS FOR WATER STORAGE AND DISTRIBUTION SYSTEMS	VI-D-1

# TABLE OF CONTENTS

## **SECTION VII: POTABLE WATER PLANNING EXAMPLES**

*Two practical examples demonstrating the integrated use of the data contained in the previous six sections of this Guide.*

A.	GENERAL	VII-A-1
B.	MAJOR REGIONAL CONFLICT, ARID ENVIRONMENT, EXAMPLE #1	VII-B-1
C.	OPERATION OTHER THAN WAR, TEMPERATE ENVIRONMENT, EXAMPLE #2	VII-C-1

## **SECTION VIII: POINTS OF CONTACT**

*Offices, agencies and organizations responsible for policy, doctrine, training ,research and development, supply, plans and operations.*

## **SECTION IX: LINE ITEM NUMBERS**

*Line Item Numbers (LIN) for principal water purification, storage, distribution, and quality analysis equipment, and associated transportation equipment.*