



## PURES SAFE WATER SYSTEMS VERSUS BOTTLED WATER: PROVISION OF DRINKING WATER DURING EMERGENCIES

SAFE WATER FOR A THIRSTY WORLD™

25 Fairchild Avenue, Suite 250  
Plainview, NY 11803  
[www.puresafewatersystems.com](http://www.puresafewatersystems.com)  
877 928 7426





PURES SAFE FIRST RESPONSE WATER SYSTEMS OFFER ADVANTAGES OVER BOTTLED WATER RELATIVE TO COST, LOGISTICS, AND RESPONSE DYNAMICS IN NATURAL OR MAN-MADE DISASTERS.

**COSTS TO SUPPLY 30,000 PEOPLE WITH DRINKING WATER DURING THE FIRST 72 CRITICAL HOURS OF AN EMERGENCY**

The following analysis compares bottled water costs and logistics to the PureSafe First Response Mobile Water Purification System.

**Analysis 1**

Comparison is based on ability to reach the site over land with trucks and transports

**Analysis 2**

Comparison is based on the requirement to airlift by helicopter the water to the site as seen in Haiti Earthquake relief efforts and during Hurricane Katrina relief efforts.



## **PURES SAFE WATER SYSTEMS VERSUS BOTTLED WATER: PROVISION OF DRINKING WATER DURING EMERGENCIES**

Bottled water represents the most common response to man-made and natural disasters where drinking water supplies have been disrupted. The logistical challenge of getting bottled water to a disaster area can be formidable. Trucks often deliver goods and services to a staging area before expediting them by truck or helicopter directly to a disaster zone. Helicopters are used when road access does not exist; however, many competing goods and services compete for helicopters.

### **The weight of water makes it difficult and expensive to transport whether by truck or by helicopter.**

- Trucks are generally used to transport bottled water from manufacturing companies to staging areas. One 52' trailer can supply approximately 1,577 cases (weighing 41,664 pounds or 21 tons), a one-day supply of drinking water for 5,000 people. Eighteen tractor trailers would be required to meet the needs of 30,000 people during the first 72 hours of an emergency.
- When access by road from the staging area to a disaster zone is not possible, helicopter transport may be used. Because of cumbersome nature of a pallet of water, a helicopter can only transport 240 cases of water at one time. To meet the needs of 30,000 people during the first 72 hours of an emergency (assuming only access to the disaster scene is by helicopter), 118 helicopter trips would be required.

By comparison, one PureSafe unit would require one helicopter trip to deliver the unit. The unit can be airlifted to the site where it has the most humanitarian application. It can start up, remove contaminants in the water from any water source, and provide 30,000 people with 1 gallon of drinking water per person in reusable and disposable containers. Most importantly the PureSafe unit can start producing drinking water within 30 minutes of being located next to a water source.

The analysis on the following pages compares the logistical, cost and response dynamics of bottled water with PureSafe First Response Systems under certain assumptions. The primary assumption relates to the need to provide adequate drinking water to 30,000 people during the first 72 hours of an emergency. Under World Health Organization (WHO) guidelines, each person requires one gallon of drinking water per day during an emergency. Under our primary assumption, this means getting 90,000 gallons of drinking water to a disaster zone. Recognizing that every emergency situation is unique, we have developed specific assumptions in this analysis with the objective of providing a structure to understand logistical dynamics and estimate costs.

The WHO recommends a minimum of 2 ½ liters of water per day for hydration. Using this formula and a reasonable plan of rationing in the first hours of an emergency you would be able to serve up to 45,000 people per day on the same output.

## ANALYSIS 1 - PURESAFE WATER SYSTEMS VERSUS BOTTLED WATER DURING THE FIRST 72 HOURS OF AN EMERGENCY



**BOTTLED WATER**

90,000 gallons of water = 28,481 cases of 24, ½ liter bottles = 752,468 pounds or 376 tons

<b>Product costs</b>	
Wholesale cost of bottled water @ \$ 3 per case FOB manufacturer	\$85,443
<b>Ground transport from manufacturer to staging area</b>	
Trucking Cost to staging area - 18 loads @ \$ 3,200 per load	\$57,600
Staging costs - 18 loads @ \$ 650 per load	\$11,700
Total cost to staging area	\$154,743
<b>Use of Military Transports w/ 10 pallets per Vehicle</b>	
Assume Staging area is within 30 Miles of impact center	
Total round trips 71 @ 60 miles @ 5 MPG @ 3.10 per gallon 400 cases per load	
Total fuel cost	\$2,641
It would take approximately 213 Hours of truck and manpower to distribute the water in cases to the site	
<b>Total Cost for first 72 hours of an emergency</b>	<b>\$157,384</b>

### BOTTLED WATER

The total cost to deliver water to a population of 30,000 people for the first 72 hours of an emergency is \$ 157,384 or Approx \$ 1.75 per person per day.

## ANALYSIS 1 - PURES SAFE WATER SYSTEMS VERSUS BOTTLED WATER DURING THE FIRST 72 HOURS OF AN EMERGENCY



### PURES SAFE WATER SYSTEM

One PureSafe unit delivers 30,000 gallons per day in disposable and collapsible reusable patented containers.

Product costs	
All inclusive operational costs (fuel, personnel, insurance, filters 18 rolls of Poly-Film) \$36,000=72,000 ½ liter units, 3 days @ \$12,000 per day)	\$36,000
Cost of 5,000 reusable containers	\$8,750
Ground transport from manufacturer to staging area	
Trucking Cost to staging area - 1 load @ \$ 3,200 per load	\$3,200
Total cost to staging area	\$47,950
Delivery of PureSafe Unit	
1 Trip @60 miles round trip @ 5 MPG @3.10 per gallon 3 hours of truck time round trip including deployment	\$37
<b>Total Cost for first 72 hours of an emergency</b>	<b>\$47,987</b>
Deliverables included, Additional filters, chemicals, manpower, Poly-film to produce 24,000 bags per day, 15,000-30,000 gallons of EPA compliant drinking water depending on source, fuel as a cost per gallon reimbursed to the supplier post event. Additional bags 1.3 gallon can be supplied at an additional cost as noted above.	

### PURES SAFE WATER SYSTEM

The total cost to deliver water to a population of 30,000 people for the first 72 hours of an emergency is \$ 47,987 or Approx \$ 0.53 per person per day.

**Net Savings over the first 72 hours = \$109,397.00**

## ANALYSIS 2 - BOTTLED WATER USING HELICOPTER TRANSPORT



### BOTTLED WATER

90,000 gallons of water = 28,481 cases of 24, ½ liter bottles = 752,468 pounds or 376 tons

Product costs	
Wholesale cost of bottled water @ \$ 3 per case FOB manufacturer	\$85,443
Ground transport from manufacturer to staging area	
Trucking Cost to staging area - 18 loads @ \$ 3,200 per load	\$57,600
Staging costs - 18 loads @ \$ 650 per load	\$11,700
Total cost to staging area	\$154,743
Helicopter transport from staging area to disaster site	
Helicopter uplift capacity 240 cases (weighing 6,340 lbs) 118 trips at \$ 7,000 per trip	\$826,000
<b>Total Cost for first 72 hours of an emergency</b>	<b>\$980,743</b>

### BOTTLED WATER

The total cost to deliver water to a population of 30,000 people for the first 72 hours of an emergency is \$ 980,743 or Approx \$ 10.90 per person per day.

## ANALYSIS 2 - PURES SAFE WATER SYSTEM USING HELICOPTER TRANSPORT



**PURES SAFE WATER SYSTEM**

One PureSafe unit delivers 30,000 gallons per day in disposable and collapsible reusable patented containers.

Product costs	
All inclusive operational costs (fuel, personnel, insurance, filters 18 rolls of Poly-Film) \$36,000=72,000 ½ liter units, 3 days @ \$12,000 per day)	\$36,000
Cost of 5,000 reusable containers	\$8,750
Ground transport from manufacturer to staging area	
Trucking Cost to staging area - 1 load @ \$ 3,200 per load	\$3,200
Total cost to staging area	\$47,950
Helicopter transport from staging area to disaster site	
Helicopter transport - 1 for unit @ \$7,000 per lift	\$7,000
<b>Total Cost for first 72 hours of an emergency</b>	<b>\$54,950</b>
Deliverables included, Additional filters, chemicals, manpower, Poly-film to produce 24,000 bags per day, 15,000-30,000 gallons of EPA compliant drinking water depending on source, fuel as a cost per gallon reimbursed to the supplier post event. Additional bags 1.3 gallon can be supplied at an additional cost as noted above.	

### PURES SAFE WATER SYSTEM

The total cost to deliver water to a population of 30,000 people for the first 72 hours of an emergency is \$ 54,950 or Approx \$ 0.61 per person per day.

**Net Savings over the first 72 hours = \$925,793.00**

## BASIC FACTS

### The PureSafe Water System

- Produces 30,000 gallons of drinkable water from any fresh water source
- PureSafe unit weighs 11,000 lbs or 5.5 tons
- Helicopter uplift capability by a wide range of available helicopters
- Attachable to an SUV or pick up truck or other suitable vehicle
- All inclusive rental fee, includes, fuel, operating personnel, insurance, replacement filters, chemicals and disposable bags is \$ 12,000 per day
- 5,000 patented expandable 1.3 gallon containers laying flat weighs 600 lbs
- Cost per container: \$ 1.75
- Film for bags made on site is included in the price of deployment, along with all disposables.

### Bottled Water

- Bottles are packed in 24 bottle cases usually of 16, 16.9, or 20 ounce bottles
- For comparison purposes assume use of 16.9 ounce bottles
- One case of 16.9 ounce bottles contains 3.16 gallons of water and weighs 26.42 lbs
- 1 pallet holds 60 cases = 24,336 ounces = 190 gallons = weighs 1585 lbs
- Helicopter uplift maximum 4 pallets = 240 cases due to the cumbersome nature of the pallets
- 30,000 gallons equal 9,493 cases, weighing 26.42 lbs per case for a total of 245,982 lbs

These assumptions do not include the extra cost for using manpower and government type trucks other than the fuel cost, if and when the water can be delivered by land. The use of the trucks going back and forth to the red zone along with the manpower could be better spent delivering medical and food supplies while our system is producing the much needed water. This could be critical in areas where the National Guard has limited resources.



SAFE WATER FOR A THIRSTY WORLD™

[WWW.PURESAFEWATERSYSTEMS.COM](http://WWW.PURESAFEWATERSYSTEMS.COM)