

# WATERFREE URINAL SYSTEM



**Revision Date:** 08/02

**Usage:** Tri-Service applications

**Compliance Impact:** Low

**Alternative for:** *Equipment Modification::  
Traditional Water Flush  
Urinals*

**Applicable EPCRA Targeted Constituents:** N/A;  
this equipment modification reduces water  
consumption and maintenance costs.

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<b>Overview:</b>	<p>The current national standard for new low-consumption urinals specifies a maximum flush volume of 1.0 gallons of water. Innovative technologies led to the development of waterfree technology. In addition to eliminating water from the operation of the urinal, plumbing is also eliminated, which greatly reduces installation costs.</p> <p>Falcon Waterfree brand urinals use recyclable cartridges that contain a biodegradable liquid. This liquid is lighter than other liquids, and therefore, floats on and seals the urine from the room atmosphere. The cartridge has a design duty life of 7,000 uses. Independent studies have shown that the production of bacteria or ammonia odors are no greater in the waterfree system than in a traditional water flushing system.</p> <p>The Army Research Laboratory Rodman Building at the Aberdeen Proving Ground site installed 4 Falcon Waterless Urinals in August of 2002. Under usual circumstances, the payback period is expected to be approximately 2 years per urinal. However, the City of Aberdeen does not charge APG for its water based on fluctuating use. APG is charged a flat fee for water use, treatment and disposal, irrespective of use. While these waterfree urinals are expected to eliminate approximately 49,000 gallons of water, there is no anticipated cost savings associated with this reduction.</p>
<b>Compliance Benefit:</b>	<p>The installation of waterfree urinals at the Rodman Building as a replacement for traditional water flushing urinals results in the following compliance benefits:</p> <ul style="list-style-type: none"><li>• Reduction in fresh water use.</li><li>• Elimination of waste water from urinals.</li><li>• Elimination of installation costs of traditional flush urinals.</li></ul>
<b>Materials Compatibility:</b>	<p>The transition to waterfree urinals from traditional flush urinals is seamless.</p>
<b>Safety and Health:</b>	<p>The liquid used in the waterfree urinals does not contain any TRI listed chemicals and is biodegradable.</p>
<b>Benefits:</b>	<p>The benefits to waterfree urinals include:</p> <ul style="list-style-type: none"><li>• Reduced installation costs.</li><li>• Elimination of waste water.</li><li>• Reduced water use.</li><li>• Virtually no odor or bacterial growth (same as that of water flush urinals).</li></ul>

**Disadvantages:** None known.

**Economic Analysis:**

**Annual Operating Cost Comparison for Waterfree Urinal System and Traditional Water Flush Urinal**

	Waterfree	Water Flush
<b>Water Consumption:</b>		
Water Use Per Urinal Per Day	0	210 gal
Water Use Per Urinal Per Year	0	49,350 gal
Water and Sewer Costs Per Urinal	\$ 0.00	\$ 210.55
<b>Total Water &amp; Sewer Costs</b>	\$ 0.00	\$ 210.55
<b>Total Maintenance Costs</b>	\$ 27.00 x 7 = \$189.00	\$ 35.00
<b>Total Annual Operational Costs</b>	\$ 189.00	\$ 245.55
<b>Net Annual Cost Savings with Waterfree System</b>	\$ 56.55	
<b>Investment:</b>		
Urinal Cost and Installation Cost	\$186 (porcelain) \$405 (fiberglass)	-
Payback Time of Waterfree Urinal System	3.2 years porcelain 7.16 years fiberglass	
<b>Cartridge Consumption:</b>		
Cartridge life cycle	7,000 Uses	N/A
Annual Consumption	49,350	N/A
Cartridges	7	N/A

**Economic Analysis Summary**

Annual Savings for Waterfree Urinal:

Capital Cost for Diversion Equipment/Process:

Payback Period for Investment in Equipment/Process:

[Click Here](#) to view an Active Spreadsheet for this Economic Analysis and Enter Your Own Values. To return from the Active Spreadsheet, click the **reverse arrow** in the Tool Bar.

**Approving Authority:** No major claimant has disapproved or endorsed this technology for use. This technology should be adopted only if the user has endorsed its performance for his/her particular application(s).

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**Vendors:** Falcon Waterfree Technologies  
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**Sources:** *None listed*

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