



AQUA-AEROBIC SYSTEMS, INC.  
A Metawater Company

# AquaPrime® / AquaStorm®

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# AquaStorm® Wet Weather Evaluation vs Competition

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# AquaPrime® / AquaStorm®



## Footprint Comparison

### Effective Horizontal Hydraulic Loading Rate (EHHLR)

Includes treatment area, ancillary processes & equipment, chemical feed, etc.

Description	Value	Unit
Pile Cloth Media Filter HLR	5	gpm / sf (of filter disk)
Filter Surface Area / Disk	108	Sf / filter disk
No of Filter Disks / Unit	16	#
Total Surface Area / Unit	1,728	sf
Max Flowrate per HLR	8,640	sf
Total Horizontal Area	450	gpm
Additional Horizontal Area <sup>(1)</sup>	100	sf
EHHLR	15.7	gpm/sf

(1) Includes area for channels, galleries, etc.

## Criteria & Scoring Process

### Select Criteria of Importance

Includes treatment area, ancillary processes & equipment, chemical feed, etc.



#### Meet Treatment Performance Requirements

- 1 Point – Meets Performance Criteria
- 0 Points – Doesn't Meet Performance Criteria



#### Degree of Facility Modification Required

- 3 Points – Fits in existing Process Space
- 2 Points – Fits, but requires expansion
- 1 Point – Doesn't Fit



#### Chemical Use & Expendables

- 3 Points – No chemical / ballast
- 2 Points – Chemical or ballast required
  - 1 Points - Chemicals and Ballast Required



#### Dual Use

- 2 Points - Beneficial
- 1 Point – Limited Benefit
- 0 Points – N/A

### Criteria 1

#### Meet Treatment Performance Requirements

>70% Removal

Except for primary treatment and microscreens, all technologies can achieve the criteria


Technology	Typical Performance Range (% TSS Reduction)	
Traditional Primary Treatment	40 to 60%	<input checked="" type="checkbox"/>
Chemically Enhanced Primary Treatment	60 to 90%	<input checked="" type="checkbox"/>
Ballasted Clarification	80 to 95%	<input checked="" type="checkbox"/>
Pile Cloth Media Filtration	70 to 90%	<input checked="" type="checkbox"/>
Compressible Media	70 to 90%	<input checked="" type="checkbox"/>
Floating Media	70 to 80%	<input checked="" type="checkbox"/>
Microscreens	10 to 50%	<input checked="" type="checkbox"/>

### Criteria 2

#### Degree of Facility Modification Required

(10,000 sf building / 3,500 sf of process space)

Building expansion and modification is a correlated with increased project cost and construction schedule, making this a multi-faceted criterion

Technology	Est. EHHRT (gpm/sf)	Estimated Footprint (sf)	
Traditional Primary Treatment	1	50,000	
Chemically Enhanced Primary Treatment	3.5	14,000	+1
Ballasted Clarification <sup>(1)</sup>	15	5,500	+2
Pile Cloth Media Filtration	15	3,500	+3
Compressible Media	5	10,000	+1
Floating Media	5	10,000	+1
Microscreens	12	6,200	+2

<sup>(1)</sup> Ballasted and Microscreens will require ¼" bar screening to provide treatment increasing footprint by 2,000 sf.



### Criteria 3

#### Chemical Use & Expendables such as ballasts

Chemical and ballast use can increase operation and maintenance costs

Technology	Or Both Neither	
Traditional Primary Treatment	Neither	+3
Chemically Enhanced Primary Treatment	Or	+2
Ballasted Clarification	Both	+1
Pile Cloth Media Filtration	Neither	+3
Compressible Media	Neither	+3
Floating Media	Neither	+3
Microscreens	Neither	+3

### Criteria 4

#### Dual Use Treatments

The technology can be used for advanced primary treatment (APT) or tertiary treatment (TT)

Technology	Dual Use Application	
Traditional Primary Treatment	None	+1
Chemically Enhanced Primary Treatment	APT	+2
Ballasted Clarification	APT	+2
Pile Cloth Media Filtration	APT or TT	+3
Compressible Media	APT or TT	+3
Floating Media	APT	+2
Microscreens	APT	+2





## Evaluation Summary



Technology	HLR (gpm/sf)	Est. EHHRT (gpm/sf)	Typical Performance Range (% TSS Reduction)
Traditional Primary Treatment	1	1	40 to 60%
Chemically Enhanced Primary Treatment	3.5 to 5	3.5 – 5	60 to 90%
Ballasted Clarification	40 to 60	15 – 20	80 to 95%
Pile Cloth Media Filtration	5 – 6.5	10 – 15	70 to 90%
Compressible Media	4 to 6	3 – 5	70 to 90%
Floating Media	6 to 8	4 – 5	70 to 80%
Microscreens	10 - 20	8 - 14	10 to 50%



Technology	Criteria 1	Criteria 2	Criteria 3	Criteria 4	Total Score
Traditional Primary Treatment	0	1	3	1	5
Chemically Enhanced Primary Treatment	1	1	2	2	6
Ballasted Clarification	1	2	1	2	6
Pile Cloth Media Filtration	1	3	3	3	10
Compressible Media	1	1	3	3	8
Floating Media	1	1	3	2	7
Microscreens	0	2	3	2	7