GAS ENERGY MIXING SYSTEM vs. DAF TECHNOLOGY

GEM SYSTEM (Gas Energy Mixing)	DAF (Dissolved Air Flotation)
As water conservation increases, GEM System handles very high contaminant loading with NO increase in capital	As water conservation increases, DAF needs larger tank to adjust to higher contaminant loading which incurs capital expenditures
At onset, GEM System adds oxygen to 100% of the waste stream	Air is not added to waste stream until it hits (or is about to hit the flotation tank)
100% aeration/oxygenation generates 1,000 times more NANO bubbles	Only 20% stream aeration generates very few usable bubbles
The liquid solid gas mixers (LSGM's) use hydrocyclone / centrifugal energy to provide extremely high energy mixing of waste water, oxygen and polymers	Relies upon flocculation tubes for chemical addition and a larger tank for mixing of chemical, air and settlement of solids
Upon introduction to the LSGM heads, polymers are uncoiled to expose 100% of the polymer to attract a higher percentage of contaminants	Chemical introduction occurs in the flocculation tubes where the polymers remain coiled
LSGM uncoiling of polymers exposes more charge sites to attract more than 2 times the number of contaminants per polymer	Coiled polymers only attract waste particles to the exposed portion of the chemical making the polymer more than half as efficient
Drier Solids – Less Waste – Less Hauling $ Sludge off the beach is 10 – 13% solids Sludge after decant is 20 – 30% solids	Wetter Looser Solids – More Waste – More Hauling $ Sludge off the beach is 2 – 8% solids Sludge after decant is 6 – 14% solids
GEM System can adapt to changes in stream in less than ONE MINUTE	Response to changing stream can be greater than ONE HOUR
Tank is only used for skimming solids and therefore can be very small	DAF relies upon longer residence times and larger tanks to treat heavier flows and loads
GEM System can expand to double the original flow capacity with NO additional capital expenditures	DAF can only increase in capacity by approximately 20% before a larger system needs to be specified
Simple Design / Easy Maintenance / Few Moving Parts	Many moving parts / High Maintenance
GEM System creates tighter, longer lasting flocs	DAF creates weaker flocs that must be pressed
Modular Design that is easily EXPANDABLE and easily to relocate	Bulky Design that costs more to expand and is much more difficult (if even possible) to relocate
LSGM Technology can be added as a retrofit to existing DAF's to double or triple capacity	No expansion possibilities (just 20% over design)
GEM FOOTPRINT IS 30 – 90% SMALLER THAN CONVENTIONAL DAF FOOTPRINT	CONVENTIONAL DAF FOOTPRINT IS GENERALLY MUCH LARGER THAN GEM

MODERN DESIGN WITH AN EYE ON SUSTAINABILITY

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