5th Annual Waste Treatment Symposium

EQUALIZATION & STORAGE

Wednesday, September 15, 2010
Crystal Environmental

Therese Wheaton

How Can We make the Process EASY?

“How Specializing in Industrial and Municipal Solids-Liquid Separation”
Learn from the Mistakes of Others…

Don’t take the time to make them yourself!
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Learn from the Mistakes of Others...

OOPS!
Learn from the Mistakes of Others...

Are you ready for some experience?
EQUALIZATION & STORAGE

- Homogenize Loads in Tanks
- This Makes Each Batches Similar
- IN: Offload Truck at 200-400 GPM
- Equalize / Mix / Agitate
- OUT: Process Waste 30-200 GPM
- Homogenizes your Solid and Liquid Results
- Minimizes your Chemical Use...$$$$$
INFLUENT TO EFFLUENT VALUES

- TSS...Total Suspended Solids
- FOG...Fats, Oils & Grease
- BOD...Biological Oxygen Demand
- CBOD...Quick Test for BOD...Operational Indicator
- pH... Alkalinity or Acidity Range
- Metals for Solid or Liquid Discharge
- Combined Nitrogen; Phosphorus, Chloride, Sodium?
WHY IS EQUALIZATION & STORAGE IMPORTANT?

- Attenuates the Flow
- Minimizes Human Error
- Provides for a Consistent Result
- Buffers Off-Loading & Operations
- Allows for a More Automated Result
- Equalization Optimizes Chemical Use
- Lack of Water Quality Can Shut You Down!
- WATER QUALITY KEEPS YOUR DOORS OPEN!
WHY IS EQUALIZATION & STORAGE IMPORTANT?
WHY IS EQUALIZATION & STORAGE IMPORTANT?
SEE US FOR MORE INFORMATION ON YOUR “GAME PLAN”
Be Prepared!

How Can We make the Process EASY?

Prepare the Liquid Prior to Equalization!
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PRE-SCREENING & GRIT REMOVAL
YOU MAY FIND:
15 - 30 YARDS OF GRIT PER MILLION
THERESE'S RULE...
DETERMINE YOUR DAILY FLOW

BUILD TWO TANKS...
MODULATE YOUR EQUALIZATION FOR GROWTH

MOST FACILITIES GROW QUICKLY!
TANKS AROUND THE USA
CAN YOU BURY THEM UNDERGROUND?
TANKS AROUND THE USA
CAN YOU BURY THEM UNDERGROUND?
TANKS AROUND THE USA
SIMPLE STORAGE
TANKS AROUND THE USA
SIMPLE STORAGE FOR LAND APPLICATION
TANKS AROUND THE USA
LINED LAGOONS
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TANKS AROUND THE USA
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TANKS AROUND THE USA
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TANKS AROUND THE USA
CONCRETE TANKS
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BOLTED TANKS
BOLTED TANKS WITH CONTAINMENT
OTHER CONSIDERATIONS

Odor Control for Transfer Time
OTHER CONSIDERATIONS

Drain to a Sump Pit to Transfer!
OTHER CONSIDERATIONS

Pump with VFD to the Dewatering!
MIXING

Make good choices for optimum performance!
OTHER CONSIDERATIONS

Pumps to Mix / Equalize the Tanks
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MIXERS
MIXING SOME LIQUIDS CAN PRODUCE FOAM
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MIXING GONE WILD!
OTHER CONSIDERATIONS

pH Monitoring vs. pH Guess work
OTHER CONSIDERATIONS

Accessibility for Cleaning & Maintenance!
OTHER CONSIDERATIONS

Do your Plans Make Sense?
CLIMATE CONSIDERATION

Inside or Outside...Check the Temperature!
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SNEAK PEAK OF THE PLANT TOUR

LAD PROCESSING EQUALIZATION TANKS
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ACCESSIBLE WITH STAIR CASES

LAD PROCESSING EQUALIZATION TANKS
PLUMBING IN VS. PLUMBING OUT

LAD PROCESSING EQUALIZATION TANKS
MIXERS IN EACH TANK

LAD PROCESSING EQUALIZATION TANKS
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MORE STORAGE...
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MORE STORAGE...
EQUALIZATION
LAD PROCESSING’S FINAL DISCHARGE TANKS

LOTS OF GALLONS ++++++

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CONSIDER THE MATERIALS

- 316 Stainless Steel
- Galvanized Steel
- Painted Steel
- Coated Steel
- Aluminum
- Concrete
- Plastics
LOOKING AT THE LARGE PICTURE...

WHAT ARE THE COSTS?

- Used: Nickel, Dime Quarter on the Dollar
- Buy a Site with Tanks
- Fabricated / Coated Steel $1.00 to $3.00 per Gallon
- Concrete: $1.00 to $3.00 per Gallon
- Covered or Uncovered? Odor Control or No Odor Control
LOOKING AT THE LARGE PICTURE...

...STRESS RELIEVERS?

- Use Pre-Manufactured / Pre-Engineered
- Perform Your Site Work
- New verses Used
- Location & Freight Costs
- Repair & Modification Costs
- Choose Experience...
Questions?
Therese Wheaton
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Call us for you Custom Tank Options!
We Modulate... 800-328-9720