SLUDGEMASTER RK 72

SLUDGEMASTER RK 72, AUTOMATED BATCH, BIOSOLIDS DEHYDRATION SYSTEM

We produce a Class A product when the SLUDGEMASTER RK is operated within the equipment operating parameters.

OPERATING PARAMETERS

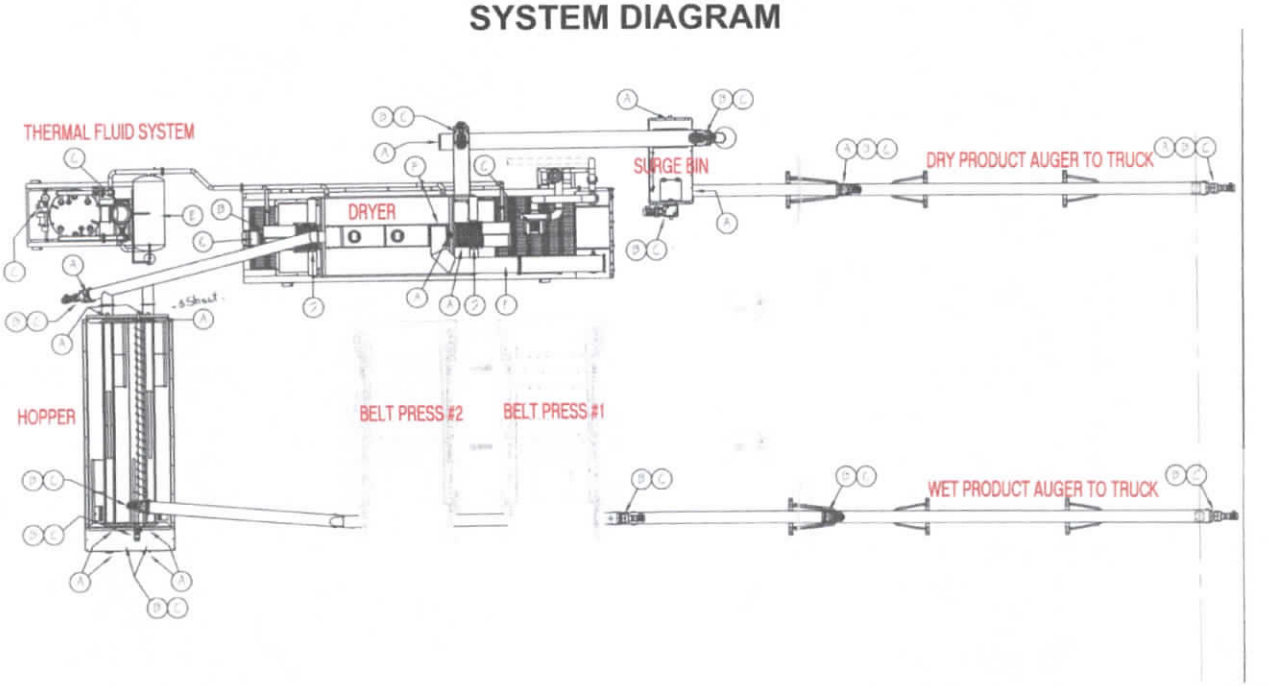
- METHOD: Automated Batch
- CAPACITY: We run 24 wet tons per 18 hour period that's all we require but sometimes we have more sludge and we run 30 wet tons per 24 hour period.
- HOPPER: The hopper holds 50 cubic yards; this is enough for 5 dryer loads.
- INPUT SOLIDS: The dryer is capable of 14% through 20% solids, our solids currently run between 16% through 18%.

GENERAL OPERATION
PLC CONTROLLED
AUTOMATIC BATCH PROCESS

- The SLUDGEMASTER RK 72, under PLC control, is started in the preheat mode to heat the thermal fluid to the correct operation temperature.
- The feed hopper receives the cake solids from the belt press.
- The PLC calls for the Biosolids to be fed to the dryer chamber.
- The feed airlock door opens.
- The feed auger feeds Biosolids to the dryer chamber per level control.
- The internal thermal fluid heated rotor moves and breaks up the Biosolids to create maximum exposure to the heated surface of the rotor and the thermal fluid heated dryer chamber.
- The PLC senses the satisfaction of the time/temperature requirement of the dehydration process.
- When the product is ready the discharge door opens, the discharge conveyer is activated, and the rotor is changed to a one direction rotation to move the dried material to the discharge conveyor.

- This automatic batch process continues to cycle until the operator places the system into cool down mode.

SYSTEM DIAGRAM



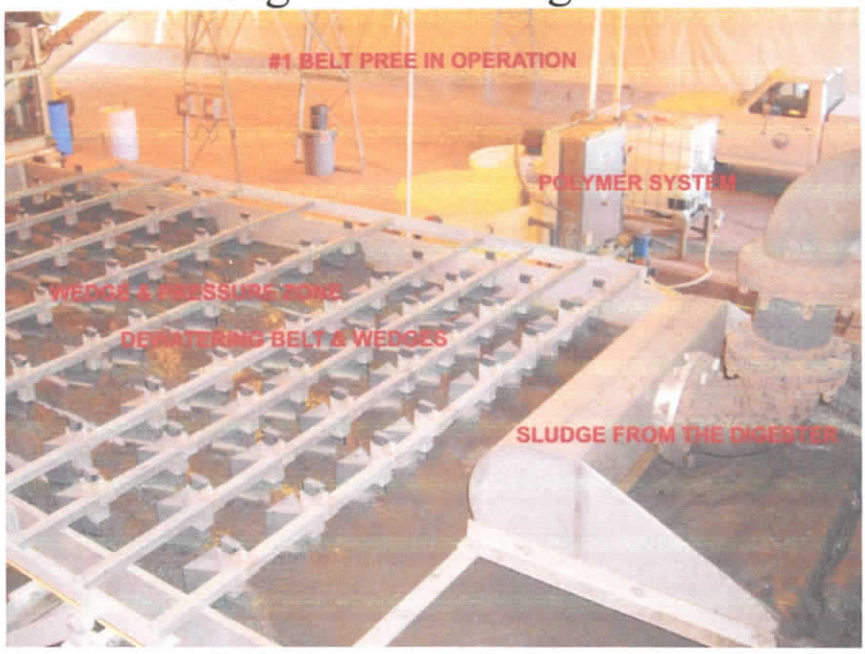
NOTE: If the dryer is down for maintenance, with the turn of a switch the WET PRODUCT AUGER can be turned on and sludge can still be removed to SUPERIOR LANDFILL in Savannah, Georgia.

The first step in our system is receiving the liquid sludge from the digester to one of our two belt press's.

Notice the pipe in the picture above that leads to the top of the belt press.

NOTE: The polymer injector ring is the location polymer is injected into the sludge and at the top of the pipe is the Venturi Mixer that mixes the sludge and polymer together before it comes out on the top of the belt. This is what causes the sludge to flock together into a cake.

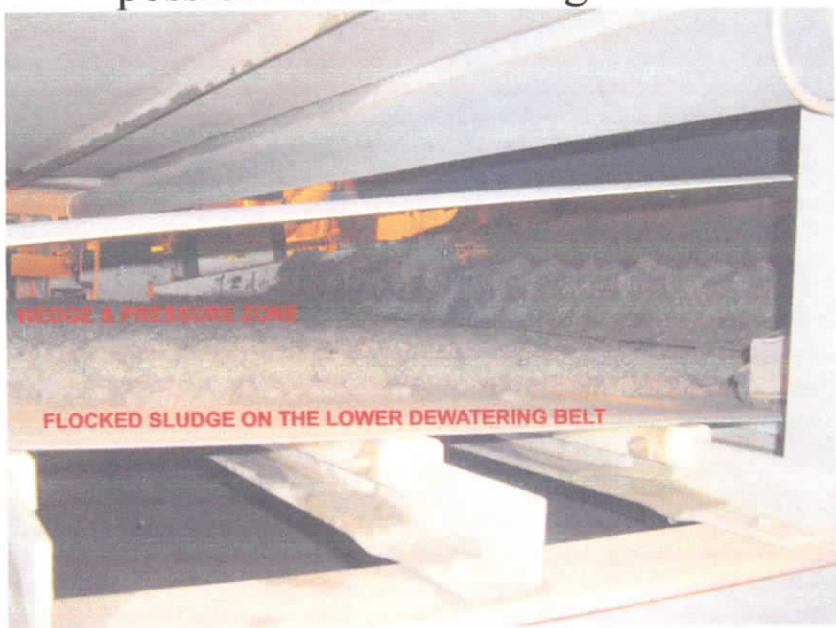
The sludge comes out on the top of the dewatering belt and begins to travel through the gravity zone. This is where the water starts to fall through the belt and as it moves through the wedges it flocks together.



There is just enough Polymer added to make the sludge flock after the fourth row of wedges.
The sludge cake continues to the end of the top level and falls to the Wedge & Pressure Zone on the lower level.
NOTE: The polymer system is an automatic system located in the background of the picture above.

WEDGE & PRESSURE ZONE

This level brings the top and bottom belt together this is the wedge and pressure zone. This area squeezes as much water as possible out of the sludge cake.



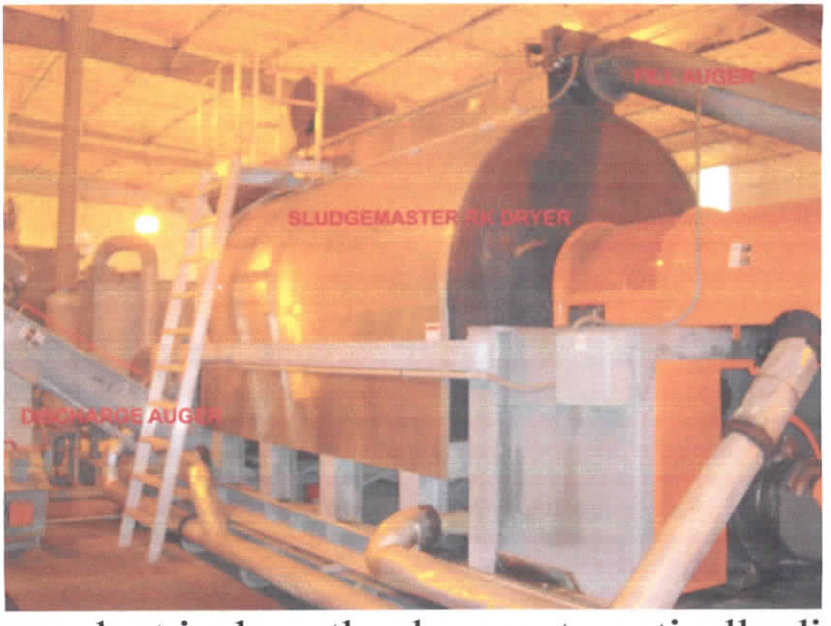
After the sludge cake is ran through the belt press it travels through auger #4 to the hopper.

The Hopper is our storage area for the sludge cake. The dryer holds six tons per load and the hopper is a 50 yard container, this is enough for 5 loads.

The next step is the drying process. This facility has an SLUDGEMASTER RK 72 dryer. The dryer is basically a large drum that is surrounded by oil that's called thermal fluid. The following picture is the thermal fluid system that heats the oil that is pumped through the dryer to dehydrate the product.

The sludge cake in the hopper is carried by the fill auger to the dryer.

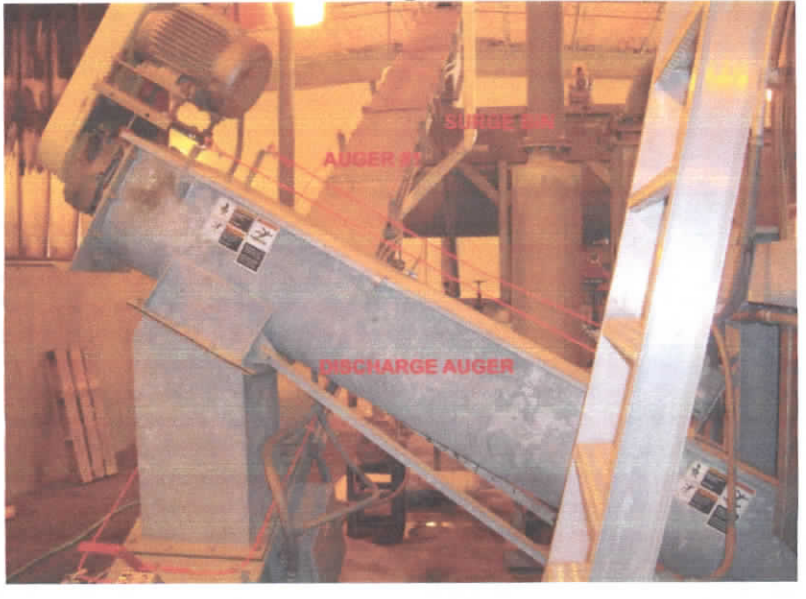
SLUDGEMASTER RK DRYER



When the product is done the dryer automatically discharge's the product.

NOTE: 6 wet tons go in the dryer and at discharge 1 ½ dry tons come out.

The product goes through discharge auger then up auger #1 to the Surge Bin.



The product can be a very high temperature when it's first discharged and the surge bin is a component that will help cool the product before continuing on to the truck.

After the product temperature has been brought down auger #2 & #3 take it to the truck to be carried to the mulch facility.

Golden Isles Wood Products

The product is taken to the storage area until it can be blended into other material to make topsoil.

Storage Area

This is the finished High Grade Top soil to be sold to the public.

Pricing