

Lagoon Closure Steps

- Sludge Survey to determine depth estimates of liquid and sludge.
- Collection of liquid and sludge waste samples to determine nutrient concentrations of each
- Using lagoon design, estimate liquid and sludge gallons to be removed.
- Identify fields for land application of waste material, liquid fields, slurry fields, sludge fields
 - Determine crops to be grown in selected fields and tillage methods. Timing of closure may determine crops or crop PAN rates and available acres may determine timing of closure
 - Collect FSA maps for each field to be used to get tract and field #'s
 - Collect associated field information (soil series, slope, receiving slope, buffers)
 - Fields leased vs owned. Leased fields need lease and sludge agreements.
 - Run RUSLE2 to determine leaching index and soil loss rate (T) on each field
- Collect current soil samples for each application field, if in coastal plain collect deep soil samples
- Make maps for each application field with associated setbacks to determine total and wettable acres for land application
- Determine methodology of closure to determine volume estimates and nutrient concentrations of waste to be used in the NM Software. (agitate entire contents to create a slurry, pump top water off and leave some to create a slurry, pump all of the top water off then scrape out and apply sludge)
- Enter all information into the NM Software. To develop the closure source in the software, use the PPM values from the waste samples collected based off the application methodology determined.
- Run PLAT to determine PLAT rating for each field
- Check P-Index in soil samples and $P_2O_5/1000$ gallons in waste sample to determine if application rates should be reduced to prevent phosphorus leaching or runoff.
- Inspect the predicted new Cu and Zn index values in the soil metals indices report in the NM software to determine if application rates need to be reduced to prevent Cu and Zn indices from approaching excessive levels.
- Develop a detailed narrative outlining the complete closure methodology, how data was collected, PLAT results, any site specifics the producer or closure contractor needs to be aware of, permit requirements that must be completed, process for breaching the dam.
- Collect needed signatures on cover page of closure plan and submit a copy to DWR and DSWC.

If you will be the technical specialist signing off on closure:

- Meet prior to start of closure with producer and/or contractor performing the closure to go over plan, answer any questions and make sure everyone has full understanding.
- Contact DWR inspector by email at least 24 hours prior to starting as required by permit.
- Visit site as much as possible during the closure to verify the process.
- Before the dam is breached, you must verify that all waste has been removed to the maximum extent possible unless the lagoon is documented to be below the water table and the bottom of the lagoon will not support earth-moving equipment then up to 1' of sludge may be left.
- All pipes must be removed, and the dam breached or filled in so that the lagoon does not hold water anymore.
- Fill out the DWR closure form, obtain signatures and submit to DWR regional office and Raleigh.