Water-based Maintenance Program

In recent years the use of a small barge-mounted backhoe is used to excavate and remove debris and silt blocking water flow. The use of this equipment prevents damage to any vegetation and is performed from water level without touching the channel banks, which allows for the channel banks to be replanted with native vegetation.

Two primary objectives for maintenance practices: sediment removal and vegetation control. All maintenance performed is for the purpose of maintaining the cross section of the minimum hydraulic channel necessary to convey water flows through the system and to the pumping facilities.

Standard Operating Procedure for Sediment Removal:

- The cross-sectional parameters for sediment removal include the entire slough bottom width, but not to exceed 30 feet in width at elevation 3 feet NGVD
- When the slough bottom width exceeds 30 feet, the channel bottom centerline is followed and sediment is removed to 15 feet on each side of the centerline
- Turbidity kept to a minimum, pumping operations are shut down during excavation to reduce or stop the flows in the slough and/or secondary ditch systems
- Practice allows time for suspended sediments to redeposit in the general area of the disturbance and has been very effective
- Sediments removed by barge-mounted backhoe to a minimum elevation of 3 feet NGVD. Exceptions: in the approach channels to the forebays at PS #1 and #4, where specific criteria is determined for the minimum hydraulic channel parameters
- Entire width and length of the slough maintained in this manner, critical attention taken so as to not undermine the slough banks
- Backhoe operator responsible for operation and maintenance of backhoe, barge, and barge components, and excavation depth
- Backhoe operator maintains daily log recording the daily production
- Sediments are placed into a materials barge and transported to a designated off-load point by a push boat
- Boat operator responsible for all transport operations, maintenance to the boat and material barges, and knowing the slough clearances and obstacles that may hinder a safe trip
- At every off-load location, the slough bank is lined with hay/straw bales for erosion control.
- Operator of the hydraulic clam is responsible for maintaining the condition of the hay/straw bales, maintenance of the equipment, and the operations for unloading the barges and loading the dump trucks.
- Records are kept for every barge unloaded and every dump truck loaded. The sediments are removed from the material barge using a hydraulic clam and placed into a dump truck to a level safe for transporting.

- The dump truck then transports the sediments to an approved disposal site. All records are picked up every Friday by the Foreman and given to the Operations Manager.

Standard Operating Procedure for Vegetation Control:

The parameters for vegetation control include:

- Entire slough width from elevation 3.0 to 8.5 feet NGVD, then a vertical cut on both sides of the slough banks to a maximum elevation of 14.0 feet NGVD.
- When the slough width at the average water surface is greater than 50 feet, only the vegetation that encroaches into the 50-foot width up to elevation 14 feet NGVD is removed.

Backhoe operations – operator is responsible for:

- Knowing the limits of vegetation clearing and operations on the water
- Locating and removing trees on slough bank that may be windblown and compromise integrity of slough bank
- All trees 4 inches or larger in diameter will be cut as close to ground level as possible with a chainsaw
- Tree is felled towards the slough or in the direction that minimizes damage to other vegetation
- Stump is treated with an herbicide solution to prevent re-growth.
- Decision to remove a felled tree is made depending on the area and the direction the tree has fallen
- A log boom or anti-drift device is installed downstream of the maintenance operation in order to collect all vegetation entering the waterway. Vegetation is removed and disposed of by chipping, or hauling to a wood recycling center or approved disposal site.
- Blackberries are removed to the top of bank or 14 feet NGVD; whichever is lower, for any slough cross section that is less than 50 feet in width at elevation 8.5 feet NGVD (average water line elevation).
- Blackberries are controlled by mechanical mowing and treated with an herbicide solution to prevent re-growth. MCDD staff is certified for applying pesticides and herbicides. All areas treated with herbicides are recorded as prescribed in the districts' policy for chemical maintenance and approved for use around waterways.