April 16, 1999

Victor Davis, LP 2T-C

KINGSTON FOSSIL PLANT (KIF) - ANNUAL INSPECTION OF WASTE DISPOSAL AREAS

Attached is a report from Cherie Minghini concerning the inspection of Kingston Fossil Plant's ash disposal areas.

This report includes recommendations for corrective work. I concur with these recommendations.

Please make necessary copies and return originals to Cherie for filing with other inspection reports.

R. E. Purkey
Manager, Civil Engineering
LP 2G-C

REP:CMM

TENNESSEE VALLEY AUTHORITY
KINGSTON FOSSIL PLANT

ANNUAL INSPECTION OF WASTE DISPOSAL AREAS

Prepared By: Cherie Minghini
Date: April 16, 1999

KINGSTON FOSSIL PLANT
NPDES PERMIT NO. TN0005452
ANNUAL ASH POND DIKE INSPECTION
1999

INTRODUCTION

The ash pond dikes and toe areas at KIF were inspected for structural stability on March 23, 1999. The inspection was conducted by Cherie Minghini of TVA Fossil Engineering Services. She was accompanied by R. L. Pope and Jim Settles of TVA Kingston Fossil Plant. The previous inspection was performed on March 30, 1998.

ACTIVE ASH DISPOSAL AREA AND DREDGE CELLS

Active Ash Disposal Area

Plant operations continues to manage this area the same as during the last inspection. Bottom ash is sluiced into a channel south of the disposal area where it deposits and is removed by drag line, approximately once a week, to be used for dike construction. Fly ash is sluiced into a channel west of the bottom ash channel. Both channels flow north into the active ash pond where the fly ash settles out and accumulates. The fly ash is periodically dredged into one of three cells located in the western half of the disposal area. The dikes of these cells are raised using bottom ash to provide more capacity for dredged fly ash as needed. The sluice water flows into the stilling pool via two plant constructed spillways. From the stilling pool the water discharges into the plant intake channel via six standard spillways. At the time of the inspection, five of the spillways were operating. The western spillway was raised above the level of the other five and was not discharging.

All exterior dike slopes around this area were in sound condition with excellent vegetative cover. The vegetation had been mowed and no signs of trees were present on any dike slopes. No new sloughs were detected, and the previously identified ones had not changed. Large pieces of concrete have been placed at the southern end of the bottom ash discharge channel to provide erosion control along the slopes. As noted previously, there was evidence of wave erosion on the interior dike slopes of the stilling pond. The divider dike between the active pond and the stilling pool had areas of rill erosion and gullies. Some clay material had been added on the dike, but there is no vegetation present, and erosion has continued to persist. Due to a recent heavy rainfall, an area several hundred feet long of saturation was noted on the northern end of the ash disposal dike. The seepage previously noted on the southeastern portion of the dike was still present and does not appear to have worsened. The dike roads were in good condition with a good crushed stone surface.

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The engineered wetland along the southeast dike was functioning normally, receiving the seepage that collects in the anoxic limestone drain from the toe of the slope.

Dredge Cells

Dredge Cell No. 2 was being dredged into at the time of inspection. Material had previously been reclaimed from Cell 3 for use in the construction of Lift C1. The top of dike elevation for Cell 2 and Cell 3 for Lift C1 is elevation 800. When construction of Lift C2 is complete, the new top of dike elevation for Cell 2 and Cell 3 will be elevation 805. Cell No. 1 is currently at elevation 795.

The dike slopes around this area were all stable and most areas had excellent vegetative cover. Most of the Stage B lift has a vegetative cover; however, the top portion of this lift does not have any vegetative cover at all. Lift C1 also does not have a vegetative cover. At completion of Lift C2, plant operations will seed and mulch Lifts C1 and C2 to establish vegetation. Dike slopes with sparse vegetation should continue to be reseeded and mulched until a good vegetative cover is apparent. Plant operations continue to do a commendable job of mowing the slopes. The previously identified minor slough on the west end of dike "C" had not changed in size or appearance. There were some rutted areas noted at the southeastern end of the ditch adjacent to Cell 1. An area of ponded water was noted along the toe of the northwest dike in the ditch between the road and the dredge cells. At the time of inspection, this area was in the process of being regraded to drain through an existing dike drain on dike "C".

There is an area between the perimeter ditch and dike "C" that was used for material reclamation to construct the dredge cell dikes. As a result, the area contains some regions with ponded water that do not drain well. There is no earth cover or vegetation in this area. Plant personnel plan to cover this area with clay and seed and mulch to establish vegetation. There is also erosion present at the culvert which drains this same area.

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NPDES PERMIT NO. TN0005452
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1999

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein; and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. See 18 U.S.C. Section 1001 and 33 U.S.C. Section 1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)

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SIGNATURE OF PRINCIPAL/EXECUTIVE OFFICER OR AGENT

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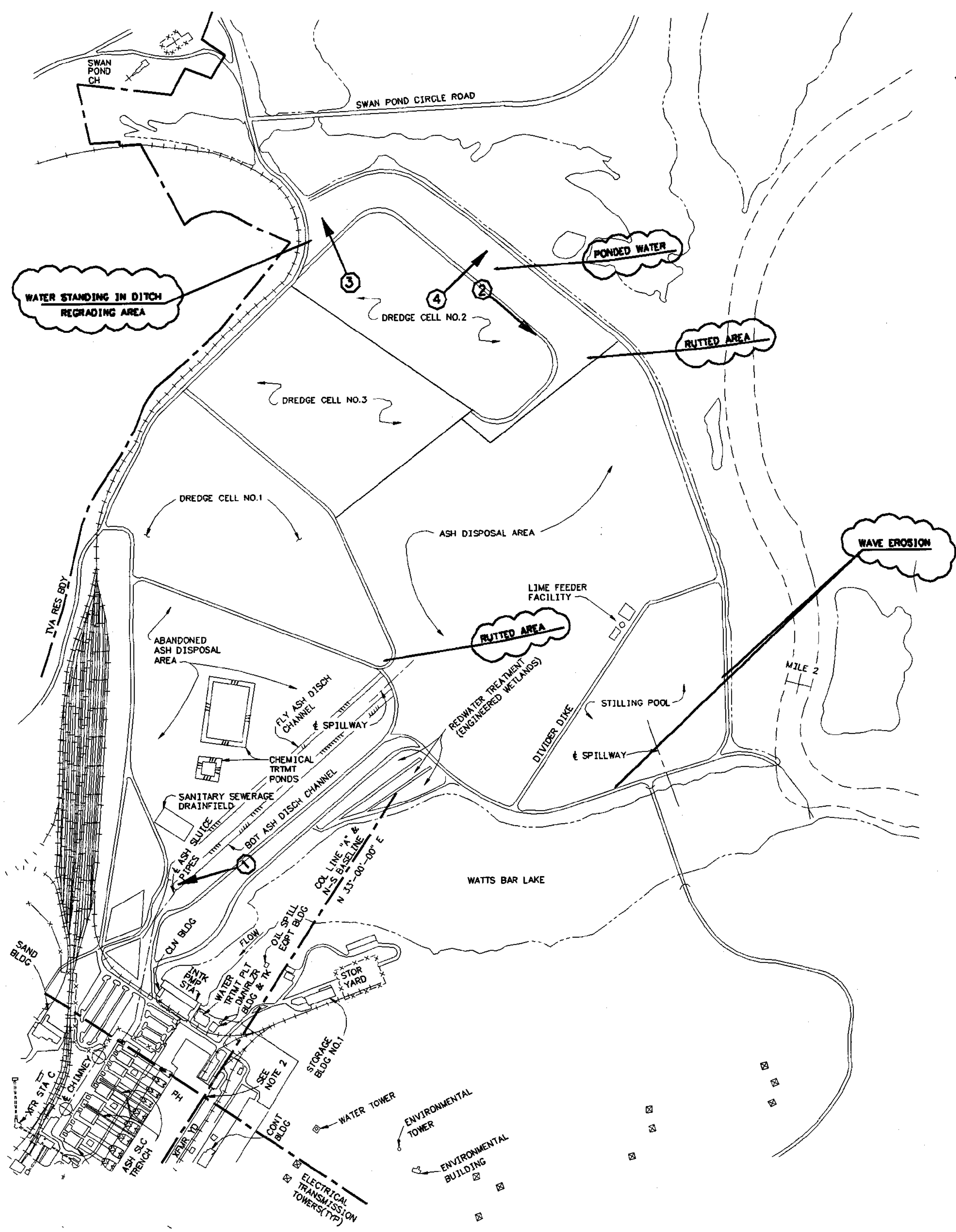

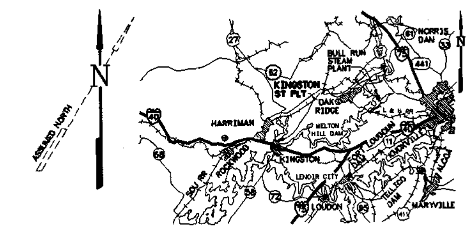

LOCALITY MAP

NOTES:
1. TOPOGRAPHY TRACED FROM KELSH PLOTTED FROM APRIL 1974 AERIAL PHOTOGRAPHS AND FROM USGS 7.5 MINUTE QUADRANGLE (HARRIMAN, TN 123-NE AND LENOIR CITY, TN 130-SE) ENLAGRED. CONTOUR INTERVAL SHOWN IS 10 FEET.
2. THE TENNESSEE STATE COORDINATES AT THE INTERSECTION OF THE N-S AND E-W BASELINES ARE NORTH 551,854.16 AND EAST 2,439,236.03.
3. FOR PROPOSED AND TEMPORARY FEATURES SEE DWG 10E202-01.

← ① PHOTO TAKEN AT THIS LOCATION IN THIS DIRECTION.

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TOPOGRAPHY TRACED BY M.P. TERMOH 1/30/1981

SCALE: NONE — EXCEPT AS NOTED

YARD

ASH DISPOSAL AREA
1999 ANNUAL INSPECTION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
	MPT	CPJ	CPJ		ROB	

KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R14 | DATE 04/28/81 | 36 | C | API99 | R

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CHEMICAL TREATMENT PONDS

The chemical treatment ponds are located southwest of the active ash pond. Both ponds were excavated and have no exterior slopes. The internal dike slopes are covered with riprap. These slopes were in good condition.

COAL YARD DRAINAGE BASIN

The coal yard drainage basin is located at the southwest corner of the coal pile. This basin was excavated below grade; therefore, there are no exterior dikes. All discharge from this basin is pumped into the fly ash discharge ditch which flows to the active ash disposal area. The slopes appeared to be in good condition. The pond was low at the time of inspection.

ACTIONS ON RECOMMENDATIONS OF LAST INSPECTION

- Some riprap has been placed on the interior dikes of the stilling pool; however, wave erosion has continued to persist.
- The ruts along the southeastern roads have been repaired.
- The drainage ditch at the toe of the northwest corner of Dredge Cell No. 2 was in the process of being regraded to drain.
- The seep from the anoxic limestone drain has been repaired.
- Plant personnel have continued to monitor any known seep and slough areas for material movement.

RECOMMENDATIONS

- Plant personnel should repair the areas of wave erosion on the interior dikes of the stilling pond by placing riprap where the slope has a visible vertical face of 1 foot or more.
- Plant personnel should repair the divider dike by adding bottom ash to the eroded areas.
- Plant personnel are in the process of grading the drainage ditch in the northwest corner of Dredge Cell No. 2 to drain. One foot of clay cover should be added adjacent to

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OTHER AREAS INSPECTED, ACTIONS ON PREVIOUS RECOMMENDATIONS / CURRENT RECOMMENDATIONS AND PHOTOGRAPHS

Swan Pond Road to keep redwater from surfacing in the ditch. Approximately six inches of soil suitable to support vegetation should then be added. An erosion control mat which incorporates seed and mulch into a one-step process should be placed to provide erosion control and a good vegetative cover.

- Plant personnel should seed and mulch Stage B lift to provide a good vegetative cover. Dike slopes with sparse vegetation should continue to be reseeded and mulched until a good vegetative cover is present.

- Plant personnel should repair the rutted areas at the southeastern end of the ditch adjacent to Cell 1 by placing riprap in eroded areas.

- Plant personnel should cover the area between the perimeter ditch and dike "C" with clay and seed and mulch to establish vegetation. Plant personnel should fill eroded areas with clay and place riprap at the outlet end of the culvert which drains this area.

- Plant maintenance should continue to periodically mow grass and remove small trees and brush from all dike slopes.

- Plant personnel should monitor the exterior dike slopes for seepages, wet soft spots, animal burrowing, sloughing, etc. and notify Fossil Engineering Services of any changes.

Cherie M. Minghini
Civil Engineering
LP 2G-C

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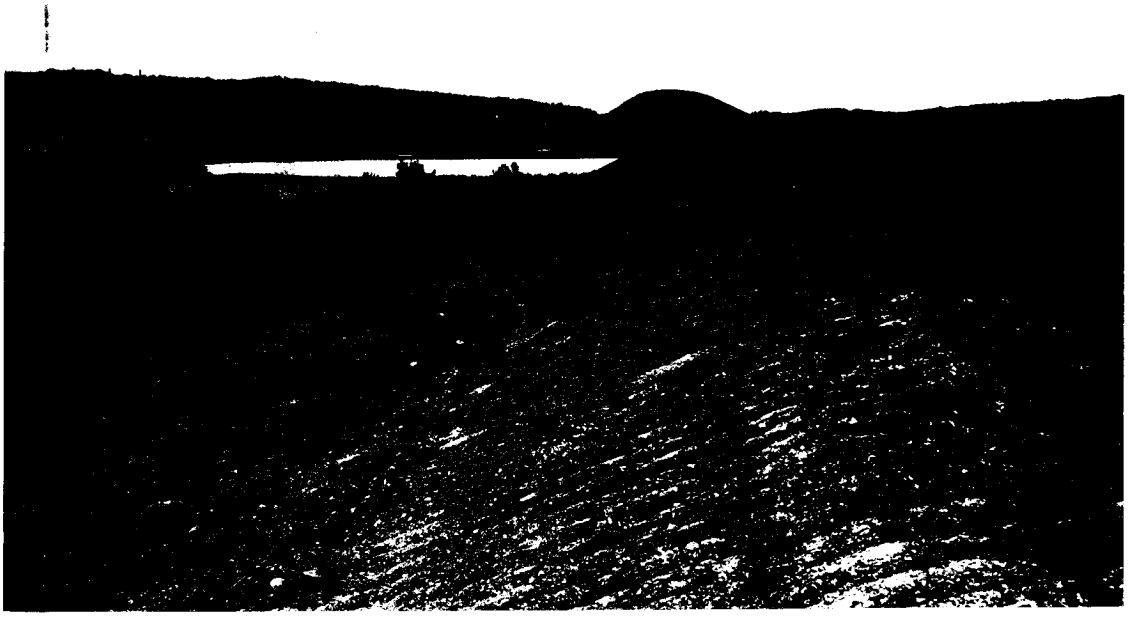
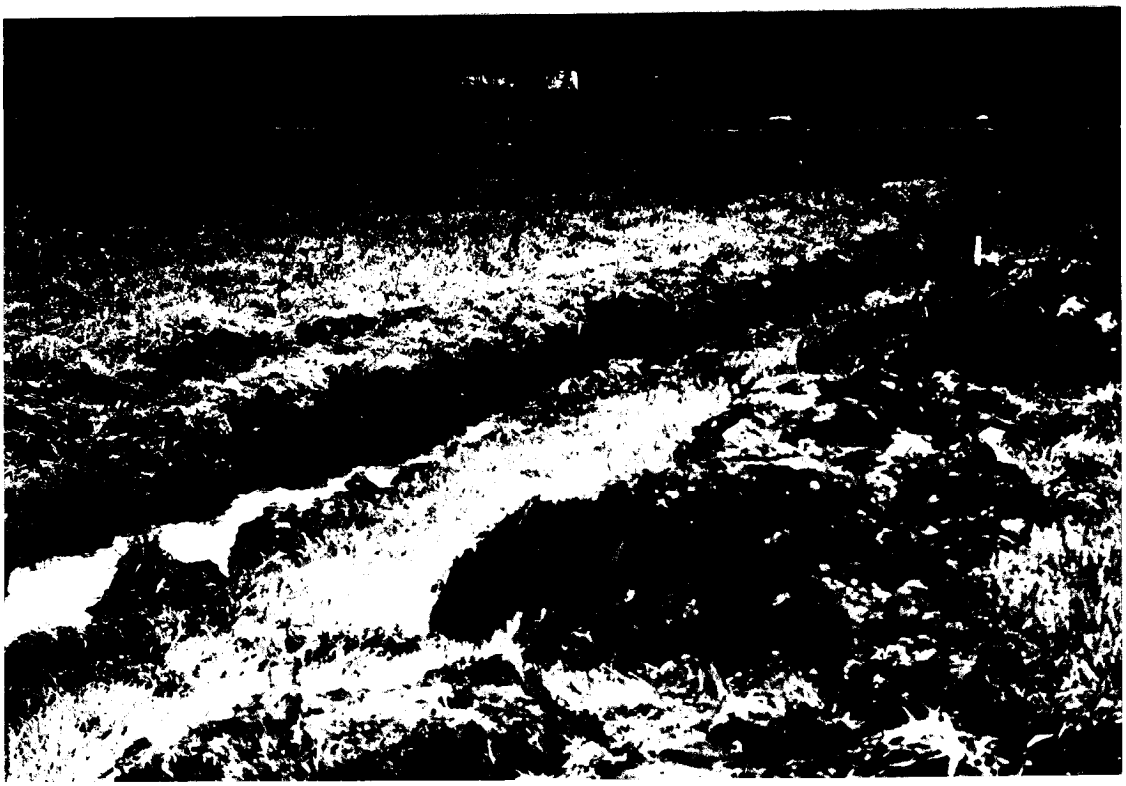
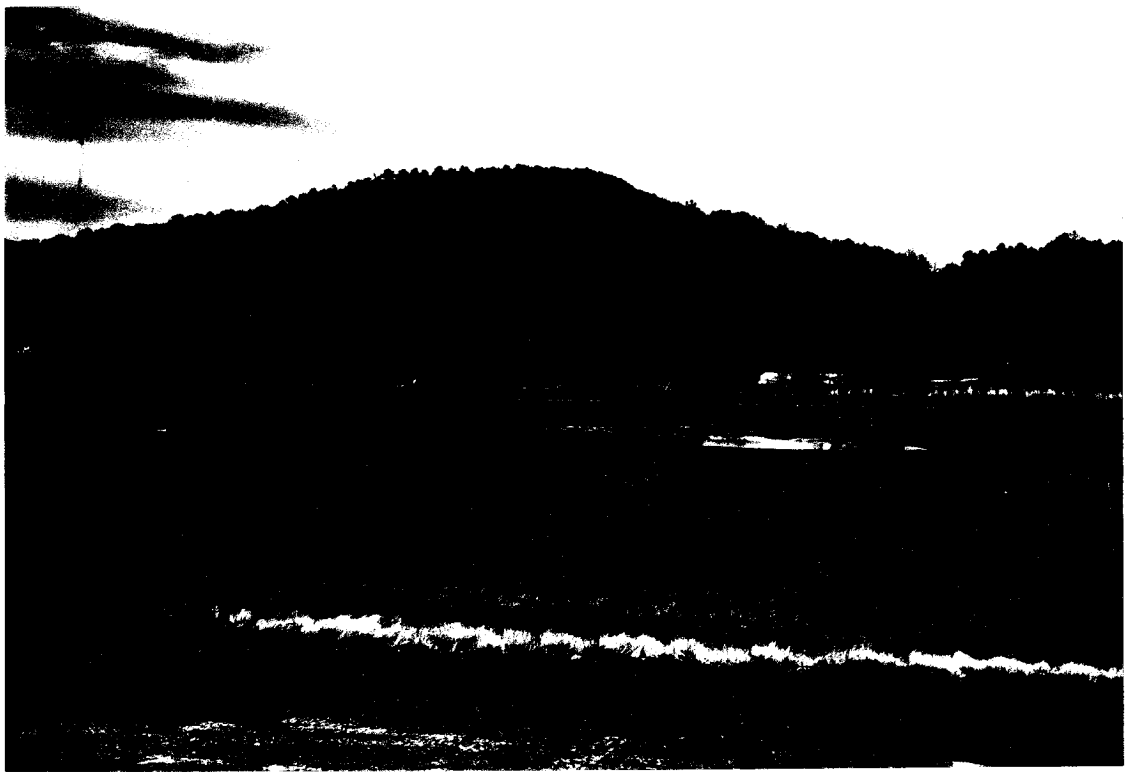
PICTURE 1 - NOTE: EROSION CONTROL ON SLOPES OF BOTTOM ASH DISCHARGE CHANNEL



PICTURE 2 - NOTE: LACK OF VEGETATIVE COVER ON DREDGE CELL NO.2



PICTURE 3 - NOTE: REGRADING OF DITCH ADJACENT TO SWAN POND ROAD



PICTURE 4 - NOTE: PONDED WATER BETWEEN PERIMETER DITCH AND DIKE "C"

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