May 24, 1999

Victor Davis, LP 2T-C

CUMBERLAND FOSSIL PLANT (CUF) - INSPECTION OF THE WASTE DISPOSAL AREAS

Attached is a report from Keith Elder concerning the inspection of Cumberland 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 Keith for filing with other inspection reports.

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

REP:BKE

TENNESSEE VALLEY AUTHORITY
CUMBERLAND FOSSIL PLANT

ANNUAL INSPECTION OF
WASTE DISPOSAL AREAS

Prepared by: Keith Elder
Date: May 22, 1999

CUMBERLAND FOSSIL PLANT
NPDES PERMIT NO. TN0005789
ANNUAL ASH POND DIKE INSPECTION
1999

INTRODUCTION

The waste disposal areas at Cumberland Fossil Plant were inspected for dike structural stability on April 6, 1999. The inspection was performed by Keith Elder and Jerry Garrett of TVA Fossil Engineering Services. They were accompanied by Joe Adams of Cumberland Fossil Plant Yard Operations. The previous annual inspection was performed on March 26, 1998.

The results of the annual stability inspection are listed below according to location within the ash disposal area.

WET GYPSUM STACKING AREA

Wet gypsum sluice and stack operations were proceeding as normal in this area. The scrubber by-product was being sluiced into the northeast corner of this area. Sluice water was being directed through the western half of the stack area where material was settling out, and the water was being discharged from the southwest corner of the area into a channel which leads to the active ash pond. The eastern half of the area was dry and plant personnel were in the process of raising the dikes on this side.

The earth starter dike between the gypsum stack and the exterior dike was in good condition with continuous vegetative cover. No signs of erosion were present on the slope. There was a heavy growth of vegetation in the ditch at the toe of the earth starter dike, particularly along the eastern dike.

The area of seepage along the lower northeastern dike that was identified last year was still present and had grown considerably. Two independent areas of seepage had been noted last year, but they had grown together to form a seep approximately 210 feet long along the toe of the lower dike. The seep averages 4 to 6 feet wide. Several more seeps were identified around the perimeter of this area at the same elevation.

These seeps were all much easier to inspect than in past years thanks to the excellent job that plant personnel are doing with regard to slope maintenance. All of the lower slopes in this area had excellent vegetative cover and all of the trees had been removed. The plant has initiated a mowing program in order to control tree growth on the dikes.

Much of the gypsum stack dikes were bare of earth cover or vegetation. No major erosion was noted, but some of the gypsum was washing down into the ditch between the starter dike and the stack.

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ACTIVE ASH POND AND DRY FLY ASH STACKING AREA

The active ash pond, dry fly ash stacking area, and bottom ash collection area are all located in the area to the west of the wet gypsum stack. Dry fly ash was being spread over the central portion of the area. Bottom ash was being sluiced to and was dropping out in the northeast corner of the region. The water from the bottom ash sluicing operation was being discharged to a ditch that ran west along the inside of the northern dike and emptied into the active ash pond through a breach in the west dike of this area. Water from the gypsum operation was flowing along a ditch between the gypsum and ash stack and was also emptying into the active ash pond through the west dike breach.

The slopes of the dry ash stack were bare and had areas of minor erosion. This erosion is depositing material in the ditch between the ash stack and the gypsum stack that may cause future flow problems.

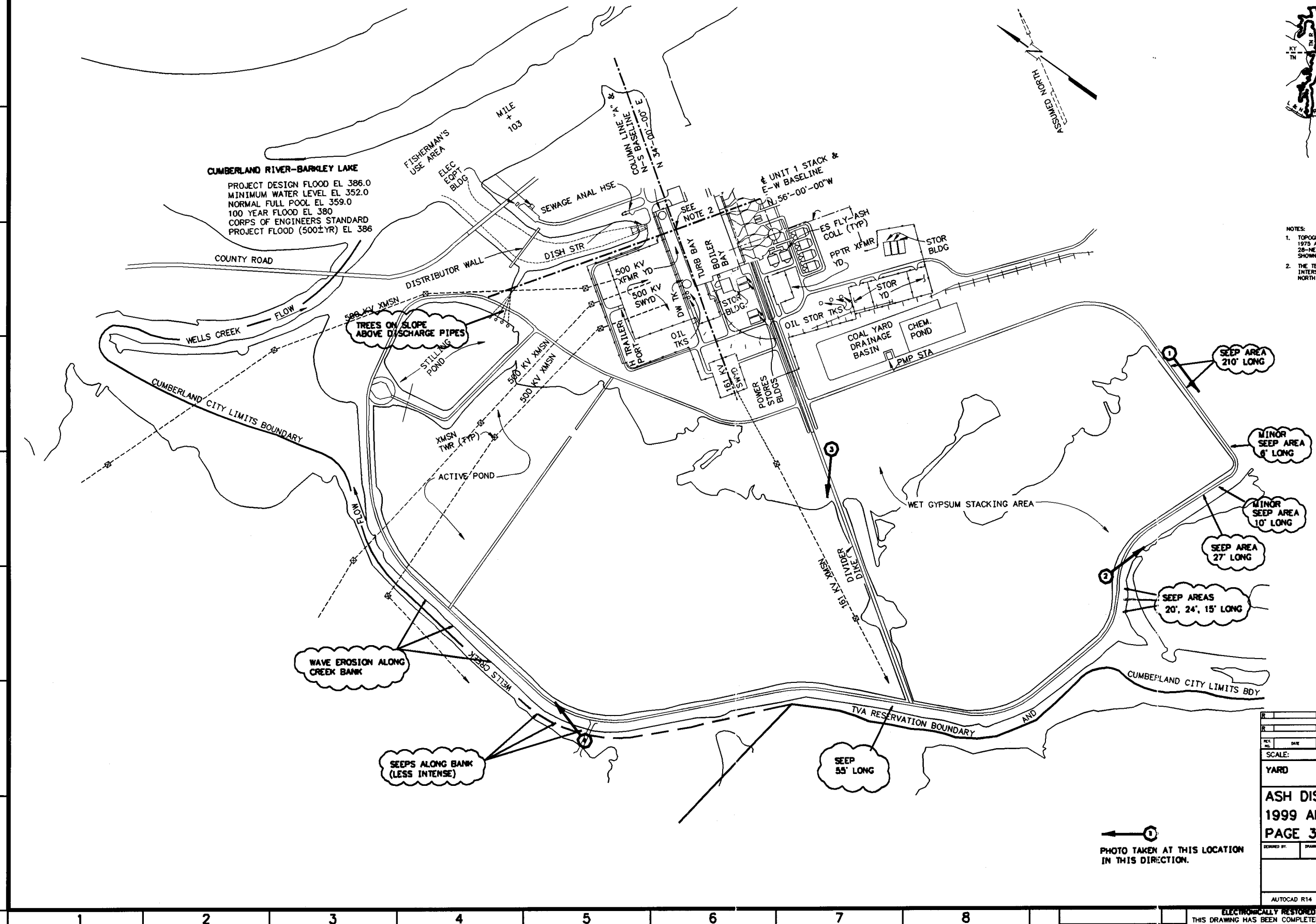
The exterior dike slopes in this area were in good condition. Just like the lower dikes of the gypsum area, these dikes had excellent vegetative cover. All trees had been removed and the slopes were recently mowed. No seeps were noted along the toe of the dikes in this area. The wave erosion along the bank of Wells Creek was still present.

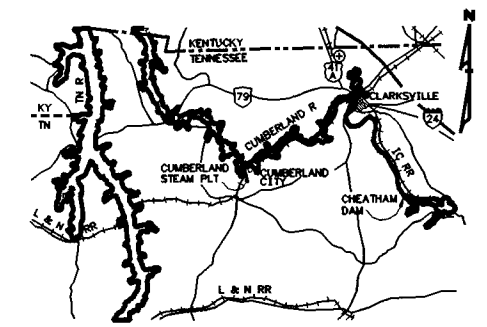
The previously identified areas of seepage near the construction bridge over Wells Creek were still present. The seeps appeared to be much smaller than last year. No visible flow of water was detected during the inspection. This noted decrease could be due to dry stacking that is now taking place behind the dike in this area as opposed to the previous wet operation.

The interior slopes of this area were in good condition. A few small trees were growing sporadically.

Both the divider dike separating the active pond from the stilling pool and the divider dike separating the active pond from the dry fly ash stacking area were in good condition. No areas of erosion or slips were noted.

The spillways and outlet pipes in the stilling pond were in excellent operating condition. A small number or trees were growing on the slope above the outlet pipes.





LOCALITY MAP
SCALE: 1"=10 MILE

NOTES:
1. TOPOGRAPHY TRACED FROM REDUCED KELSH PLOTTED FROM MARCH 1975 AERIAL PHOTOGRAPHS AND USGS-TVA 7.5 MINUTE QUADRANGLE, 28-NE AND 36-SW (CUMBERLAND AND ERIN, TN.) CONTOUR INTERVAL SHOWN IS 10 FT.
2. THE TENNESSEE STATE RECTANGULAR COORDINATES AT THE INTERSECTION OF THE N-S AND E-W BASELINES ARE NORTH 732,290.00 AND EAST 1,512,660.00.

SCALE: EXCEPT AS NOTED

YARD

ASH DISPOSAL AREA
1999 ANNUAL INSPECTION
PAGE 3 OF 4

DESIGNED BY	DRAWN BY	CHECKED BY	SUPERVISED BY	REVIEWED BY	APPROVED BY	ISSUED BY
	WTM	RIB	ELE		JP	WNC

CUMBERLAND FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R14 | DATE 02/01/68 | 46 | C | APl99 | R

ELECTRONICALLY RESTORED DRAWING
THIS DRAWING HAS BEEN COMPLETELY REDRAWN AND SUPERSEDES :(10N200 & R10)

TASK COMPLETED BY: | REV NO.

PLOT FACTOR: W_TVA

C.A.D. DRAWING DO NOT ALTER MANUALLY

CUMBERLAND FOSSIL PLANT
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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

TVA USE ONLY

OTHER AREAS INSPECTED, ACTIONS ON PREVIOUS RECOMMENDATONS, AND RECOMMENDATIONS FOR CORRECTIVE ACTION

CHEMICAL TREATMENT POND

This pond is located north of the wet gypsum stacking area. Discharge from this pond is pumped to the active ash pond. The southern and eastern borders of this area are formed by a slope that was excavated into existing ground. The northern and western borders are formed by a dike that separates this pond from the coal yard stilling basin.

The interior slopes of this area were in good condition. They had good riprap cover with no signs of structural deficiency.

COAL YARD DRAINAGE BASIN

This pond is also located north of the wet gypsum stacking area and is adjacent to the chemical treatment pond. It also has no exterior side slopes. Water is pumped from this pond west to the detention pond.

All interior slopes had excellent vegetative cover. The previously noted area of erosion along the south dike had not changed and was covered with vegetation.

ACTIONS SINCE LAST INSPECTION

- All trees on the exterior slope of both the gypsum stack area and the active pond/ash stack area had been removed. The disturbed areas had been seeded and had a good stand of grass.
- All exterior dike slopes had been recently mowed and were being maintained well.
- The previously identified animal burrows had been repaired per the report from last year's inspection.
- Plant personnel have closely monitored the seeps along the toe of the lower dike of the gypsum area.

RECOMMENDATIONS

- Monitor the seeps along the lower dike of the wet gypsum stacking area. Check for signs of material movement and increased seepage. Please notify Fossil Engineering Services if any significant changes are noticed.

TVA USE ONLY

OTHER AREAS INSPECTED, ACTIONS ON PREVIOUS RECOMMENDATONS, AND RECOMMENDATIONS FOR CORRECTIVE ACTION

- Cover the upper slopes of the gypsum stack with earth and seed them to prevent potential erosion and dusting problems.

- Cover the slopes of the dry ash stack with earth and seed them to prevent erosion of material into the lower ditches.

- Continue the mowing program along the exterior dike slopes to prevent tree growth and aid in the inspection and monitoring of the slopes.

- Monitor the seeps along the bank of Wells Creek in the vicinity of the construction bridge. Please report any changes to Fossil Engineering.

- Monitor the bank erosion along Wells Creek. Please notify Fossil Engineering if the top of bank begins to encroach on the slope of the dike.

- Remove the trees on the interior slope of the stilling pond above the discharge pipes.

Figure 1. Seep area along eastern dike. Note excellent vegetative cover and absence of trees and brush on dike due to proper maintenance.

Figure 2. Bare upper slopes of gypsum stack. Note material in ditch below.

Figure 3. Ditch between gypsum stack and dry ash stack. Notice the bare slope and erosion on the dry ash stack.

Figure 4. Seeps along bank of Wells Creek as seen from bridge.