Upstream concrete wall on structure.
5 August, 1980

HOWARD DAM NUMBER THREE

Dam crest viewed from right abutment prior to clearing.

Crest viewed from spillway bridge prior to clearing.
Crest of dam from spillway bridge.

Reservoir shoreline.
Seepage weir, downstream face of dam and spillway.
Upstream face of dam showing one foot high concrete wall addition and concrete plug at old outlet area. Note also deterioration of existing concrete.

Spillway channel from crest of dam.
Upstream face of dam showing remains of low level outlet upstream gate. Diver had located the top of the valve.
HOWARD 3

Spillway channel during rehabilitation. Note green 12" siphon used to draw the lake down.

August, 1980
A concrete plug was used to patch a hole through the dam. Although no date was available, the hole had been made several years ago for rapid drawdown during heavy rains.

Concrete plug from upstream face after stripping.
Howard #3

Initial excavation showing heavy seepages encountered.

Seepages at downstream toe prior to excavation.
Howard #3

August, 1980

Heavy seepage noted passing through the original fill.

Excavation while attempting to locate wood stave low level outlet.
HOWARD #3

August, 1980

Beginning of excavation after drain rock placement was complete.
HOWARD #3

August, 1980

Downstream face of dam from crest during excavation.
HOWARD #3

August, 1980

Left abutment wing wall added to spillway was completed.
Beginning of original log crib dam was exposed - note log protruding from fill.

Original log crib dam exposed - logs were still intact.
A 12" high lift was added to the upstream concrete wall after construction. Note old sand bags on upstream face.
Replacement of fill in 12-18" lifts. A nuclear density tester was used to monitor compaction and moisture content after compaction on each lift.

Downstream toe during construction showing edge of drain rock and impervious cover.
HOWARD #3

Beginning of fill replacement - note, vibratory compaction on left of photo.
HOWARD #3

16 September, 1980

Recently repaired dam - note coarse drainrock at base to accommodate heavy seepages.
Trout re-stocking at Howard #3 Dam.
Crest view from left abutment.

Seepage path to wier.
Lake level at full pool elevation.

Spillway channel seen from walkway.
Spillway flowing at right of photo into monitoring weir.

Water flowing from sillway into monitoring weir.
Upstream face of completed renovations. Note concrete plug repairing hole through concrete face.

Temporary weir monitoring heavy seepages.
February 24, 1981

HOWARD #3 DAM

Seepage at downstream toe.