

HOWARD DAM #4  
~~HARWOOD DAM #2~~

September 1, 1976.



Spillway bridge. Note repairs needed.



Spillway bridge on Dam centreline.



Howard Dam #4  
~~HAREWOOD DAM #2~~

September 1, 1976.



Spillway chute downstream of bridge.



Howard Dam #4  
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September 1, 1976.



Sluice gates and area where dam crest fill has eroded away.



#137  
Crest of dam and reservoir. Note heavy growth on downstream face of dam.



HOWARD DAM #4  
HAREWOOD DAM #2

September 1, 1976.



Spillway chute and plunge pool from downstream.



Howard Dam #4  
~~HAREWOOD DAM #2~~

September 1, 1976.



End of spillway chute showing concrete erosion water falls on sound rock.

x 30  
VI



Howard Reservoir #4  
~~HAREWOOD DAM #2~~

September 1, 1976.



#1309  
JL

Two level sluice and  
plunge pool.



Typical overgrowth on downstream face of dam.



Stabilizing berm viewed from left abutment  
area.



Filter material placed along abutment contact.



Diversion of spillway flows while  
undertaking spillway repairs.



Sandbagging employed to divert water  
through 2-12" C.M.D. culverts while  
spillway repairs are undertaken.



HAREWOOD RESERVOIR

15 July, 1980

Stabilizing berm viewed from the right abutment contact.





HAREWOOD RESERVOIR

15 July, 1980

Repairs to the end of the spillway chute.





HOWARD #4

18  
August, 1980

Downstream face of recent rehabilitation including a  
filter blanket and toe drain.





Drain rock toe drain used to pick up embankment seepages.



Top of filter blanket berm from left abutment.



Toe of spillway patched during recent rehabilitation.



Repaired concrete spillway channel. Note right wing wall raised 8".



View of Downstream face from left abutment  
showing line of alignment points set to monitor  
cracking filter material.





Closeup of crack in downstream berm.  
Note - crack just below break is  
approximately 1/10' in width.



Cracking in berm observed from dam toe.



HOWARD DAM #4

August 1980

View of completed berm placed downstream of existing dam.





February 24, 1981

HOWARD #4 DAM



Erosion on  
left abutment.

Seep causing sluff  
in area of left  
abutment.





February 24, 1981

HOWARD #4 DAM



Left abutment washout.



Infilling of toe drain from left abutment sluff.



February 24, 1981

HOWARD #4 DAM



Downstream toe.



Run-off pooling on filter blanket.