

FISHER POND DAM
PHASE I
INSPECTION / EVALUATION REPORT



Dam Name:	FISHER POND DAM
State Dam ID#:	7 – 4 – 327 - 5
NID ID#:	MA 02225
Owner:	EDWIN & JEANNE WOODS
Town:	WEST TISBURY
Consultant:	KENT A. HEALY
Date of Inspection:	JULY 31, 2009

EXECUTIVE SUMMARY

The Fisher Pond Dam on The Mill Brook in West Tisbury, was inspected July 31, 2009 by Kent A. Healy PE, a civil engineer with 35 years of dam engineering experience, and William M. Austin a licensed professional surveyor with 30 years experience in the study of streams and ponds.

The Fisher Pond Dam was constructed in the 1800's to form a recreational pond for Dr. Fisher, the land owner, and has been maintained by the subsequent land owners.

The dam is in good condition with no major deficiencies

The Authors have completed Phase 1 reports of other dams in the water shed but have no knowledge of any formal inspections of this dam.

The brush and trees within 15 of the down stream face should be cut to allow closer inspection and to prevent any damage from roots.

PREFACE

The assessment of the general condition of the dam reported herein was based upon available data and visual inspections. Detailed investigations and analyses involving topographic mapping, subsurface investigations, testing and detailed computational evaluations were beyond the scope of this report.

The reported condition of the dam was based on observations of field conditions at the time of inspection, along with data available to the inspection team.

The safety of the dam depends on numerous and constantly changing internal and external conditions. Only through continued care and inspection can unsafe conditions be detected.

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SECTION 1

1.0 DESCRIPTION OF PROJECT

1.1 General

1.1.1 Authority

Edwin and Jeanne Woods, Trustees, have retained Kent A. Healy PE to perform a visual inspection and develop a report of conditions of The Fisher Pond Dam on The Mill Brook in West Tisbury, MA.. This inspection and report were performed in accordance with MGL Chapter 253, Sections 44-50 of The Massachusetts General Laws as amended by Chapter 330 of the Acts of 2002.

1.2 Purpose of Work

The purpose of this investigation was to inspect and evaluate the present condition of the dam and appurtenant structures in accordance with 302 CMR10.07 to provide information that will assist in both prioritizing dam repairs and planning maintenance.

The investigation was divided into four parts: 1) obtain and review available reports, investigations, and data previously submitted to the owner pertaining to the dam and appurtenant structures; 2) perform a visual inspection of the site; 3) evaluate the status of an emergency action plan for the site and; 4) prepare and submit a final report presenting the evaluation of the structure, including recommendations and remedial actions, and an estimate of the probable costs.

1.1.3 Definitions

Definitions of commonly used terms associated with dams are provided in Appendix D, with common categories associated with dams which include: 1) orientation; 2) dam components; 3) size classification; 4) hazard classification; and 5) miscellaneous.

1.2 Description of Project

1.2.1 Location

The Fisher Pond Dam is at North 41 degrees- 23.7 minutes and West 70 degrees- 41.5 minutes, about 4600 feet west of the intersection of North Road and State Road. The dam impounds the water of Mill Brook to form Fisher Pond.

1.2.2 Owner/Caretaker

Edwin and Jeanne Woods of P.O. Box 491, Santa Maria, CA 93454 are the owners. Kent A. Healy, P.O. Box 128, West Tisbury, MA 02575 is the caretaker.

1.2.3 Purpose of the Dam

Recreation

1.2.4 Description of the Dam and Appurtenances

The Fisher Pond Dam is an earthen embankment approximately 430 feet long, 12 feet wide and 4 feet high with a stone wall forming the downstream face. A mowed grass path runs along the crest. The main spillway is of granite masonry with a concrete floor. A now unusable swimming pool was constructed of concrete against the downstream face. There is no low level outlet. A 20 foot wide, one foot deep depression of the crest at the south end of the dam serves as an emergency spillway

1.2.5 Operations and Maintenance

The Woods family is responsible for the operation and maintenance of the dam and spill way. The dam crest is mowed yearly.

1.2.6 DCR Size Classification

Fishers Pond Dam has a structural height of about 8 feet and a maximum storage capacity of about 36 acre feet based on water depths measured during this inspection. Therefore, in accordance with The Department of Conservation and Recreation Office of Dam Safety classification, under Commonwealth of Massachusetts dam safety regulations stated in CMR 10.00, as amended by Chapter 330 of the Acts of 2002, Fisher Pond Dam is a small dam.

1.2.7 DCR Hazard Potential Classification

Fisher Pond Dam is located upstream of 20 acre swamp. Failure of the dam would not release water fast enough to cause any significant damage downstream, therefore, in accordance with Department of Conservation and Recreation classification procedures, under Commonwealth of Massachusetts dam safety rules and regulations stated in 302 CMR 10.00 as amended by Chapter 330 of the Acts of 2002, Fisher Pond Dam should be classified as a low hazard(class III) dam. The hazard potential classification is consistent with the hazard potential on record with the Office of Dam Safety.

1.3 Pertinent Engineering Data

1.3.1 Drainage Area

The drainage area for Fishers Pond Dam is approximately 1 ¼ square miles and extends through the towns of West Tisbury and Chilmark.

The Authors have, since 1990, studied the surface water and ground water contributions to Tisbury Great Pond as part of a continuing study of the hydrology of Tisbury Great Pond. This study involves continuous measurement of the flow in Mill Brook. The water flow into Fishers Pond results from rain on the approximately 1 ¼ square miles of surface water shed upstream of The Pond. This area is largely wooded with a significant portion in conservation. The runoff coefficient, as measured during the last 19 years is quite low (0.1).

1.3.2 Reservoir

See Table 1.1 for data about normal, maximum, and spillway design flood (SDF) pools. These data were calculated based on water depths measured from a boat during the inspection

1.3.3 Discharges at the Dam Site

The largest stream flow during the last 23 years (1986-2009) occurred at about 7 AM June 14, 19998, after about 7 inches of rain fell on The Pond water shed from 4 to 9 PM June 13, 1998. The peak flow measured at The Mill Pond dam downstream was 130 cfs. Based on water shed areas, the peak flow over Fishers Pond Dam was about 70 cfs.

1.3.4 General Elevations (feet)

- A. Top of Dam +67.8 to + 67.9
- B. Spillway Design Flood Pool +68.5
- C. Normal Pool +67.0
- D. Spillway Crest + 66.9
- E.**
- F. Upstream Water at Time of Inspection +67.0
- G. Downstream Water at Time of Inspection +61.7
- H. Streambed at Toe of the Dam + 59.7
- I. Low Point along Toe of the Dam + 64.8

1.3.5 Main Spillway Data

- A. Type Concrete floor with granite walls with 7 foot long, one foot high stop log board at the start of the spillway
- B. Weir Length 7 feet wide , 17 feet long
- C. Weir Crest Elevation +66.9
- D. Upstream Channel Granite masonry
- E. Downstream Channel Natural cobbles and gravel
- F. Downstream Outlet Invert or Channel Bottom Elevation + 59.7

1.3.7 Design and Construction Records and History

There are no records of construction available

1.3.8 Operating Records

There are no operating records available.

SECTION 2

2.0 INSPECTION

2.1 Visual Inspection

Fisher Pond Dam was inspected July 31, 2009. At the time of inspection the weather clear with a temperature of 75 degrees F. The previous rainfall and water flow was average. Photographs were taken during the inspection and included in Appendix A. A small boat was used to measure water depths of the pond and inspect the upstream face. A copy of the inspection check list is included in Appendix B.

2.1.1 General Findings

Fishers Pond Dam was found to be in good condition.

2.1.2 Dam

The upstream face is protected from ice and waves by a shallow stone wall. The down stream face is a vertical granite stone wall in good condition providing lateral stability to the embankment. The crest is a grassy path mowed annually and in good condition. There are no drains or instrumentation and access is by a path at the north end of the dam.

2.1.3 Appurtenant Structures

- Primary Spillway

The primary spillway is a granite masonry structure at about the middle of the dam, with concrete floor and granite masonry training walls, and granite masonry downstream face. A 1 foot by seven feet long board at the inlet maintains the pond level one foot above the spill way floor. All of the structure is in good condition.

- Low-Level Outlets

The low level outlet is inoperable.

- Auxiliary/Emergency Spillway

There is a low (+67.8) twenty foot wide portion of the earth embankment at the south end of the dam which serves an emergency spillway. The spillway has a very flat (1:10) slope and has a strong sod floor.

2.1.3 Downstream Area

The area downstream of the dam is a heavily wooded swamp.

2.1.4 Reservoir Area

Fishers Pond is formed by the 430 foot embankment built across the shallow Mill Brook valley. The natural valley slopes are flat and stable and the pond has a maximum depth of about five feet.

2.2 Caretaker Interview

The Woods family has taken good care of the dam and will continue the maintenance. Kent A. Healy inspects the dam periodically.

2.3 Operation and Maintenance Procedures

2.3.1 Operational Procedures

There are no operation or maintenance procedures other than keeping the crest mowed.

2.4 Emergency Warning System

There is no emergency warning system.

2.5 Hydrologic/Hydraulic Data

Fisher Pond Dam has a structural height of 8 feet and a flood storage volume of about 36 acre feet, so the CMR size classification is small. The hazard potential is low so the CMR spill way capacity should be larger than the 100 year flood flow. For this inspection report, the 100 year rain fall per the updated 1993 report from the Northeast Regional Climate Center at Cornell University is 9.0 inches in 24 hours. A 6 hour 100 year rain fall would be about 6 inches. The latter is more appropriate given the 12 hour time of concentration for this watershed. On June 13, 1998 from 4 to 9 PM, about 6 inches of rain fell on the Fisher Pond watershed resulting in a recorded Mill Brook water flow of 130 cfs at the Mill Pond Dam several miles downstream and from a watershed area of about 2900 acres. The 800 acre water shed area of Fishers Pond would result in a 100 year flow of about 40 to 50 cfs.

The capacity of the primary spill way calculated using a broad crested weir formula with head of 1 foot and a width of 7 feet would be about 20 cfs. With a pond water elevation of +68.9 up to the crest , the flow through the primary spillway would be about 60 cfs and the flow across the low area at the south end of the dam would be about 20 cfs with a velocity of less than three feet per second, well under the erosion velocity for grass. There would be and there is no sigh that there has been and damage from a 100 year storm event.

2.6 Structural and Seepage Stability

2.6.1 Embankment Structural Stability

The low height to base width ratio of 1:3 and the stability of the stone wall forming the downstream face indicate a static factor of safety of more than 3. Failure during a massive storm event would be gradual erosion of the embankment during overtopping, and the loss of the pond storage volume would be unnoticed during the resulting flood flow.

2.6.2 Structural Stability of Non-Embankment Structures

The masonry walls and structures are stable and in good condition.

2.6.3 Seepage Stability

There was no significant seepage through the dam. The filtering resistance of the stonewall and the low seepage gradient (5: 20) provide more than adequate safety against instability due to seepage.

SECTION 3

3.0 ASSESSMENTS AND RECOMMENDATIONS

3.1 Assessments

The overall condition of Fishers Pond Dam is good.

The dam was found to have the following deficiency.

The trees and brush within 15, feet of the downstream face should be cut with the roots left in place.

3.2 Studies and Analyses

No additional studies of this dam are needed.

3.3 Recurrent Maintenance Recommendations

The crest should be mowed annually and the brush cut within 15 feet of the dam.

FIGURES

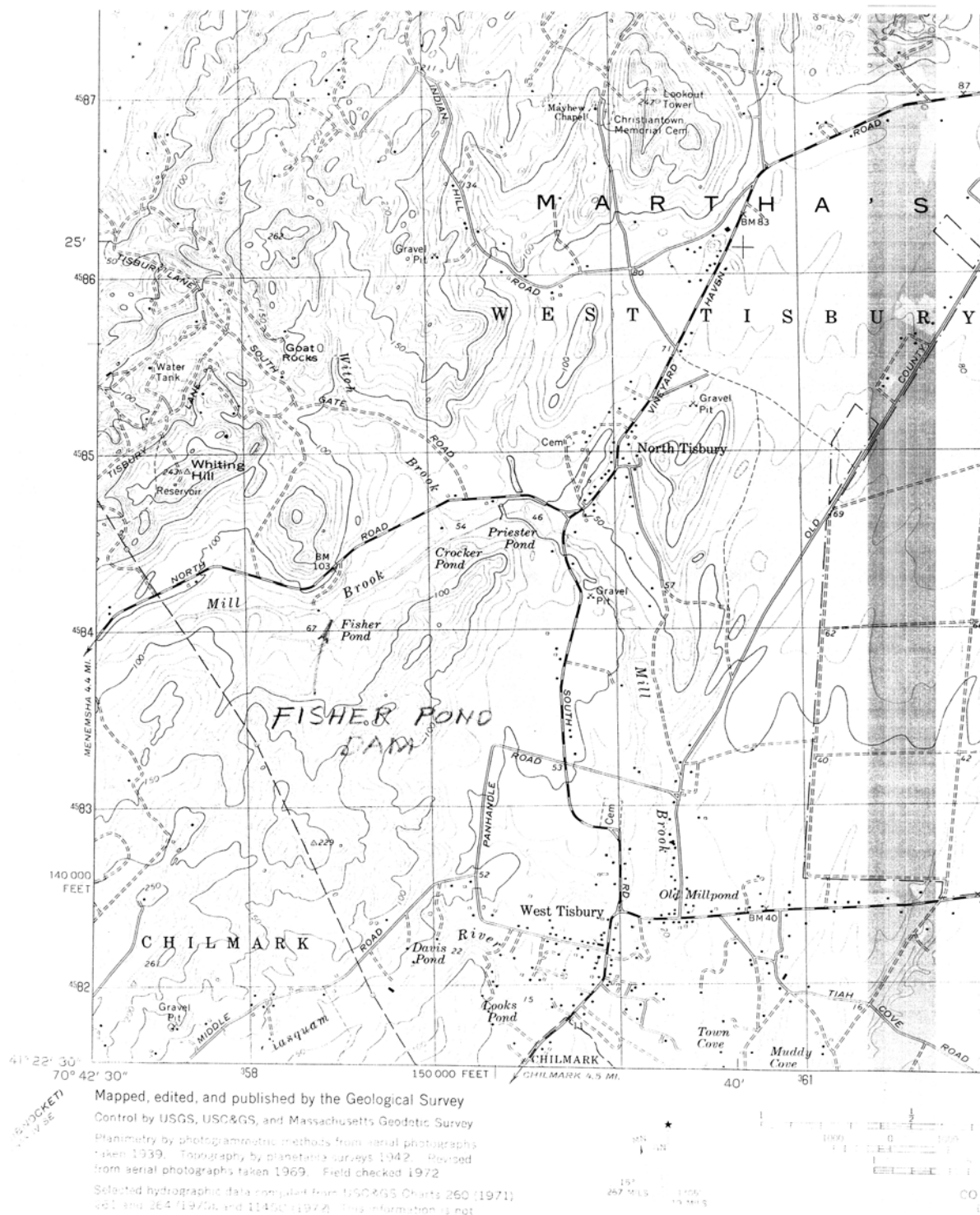


FIGURE 1 LOCUS MAP

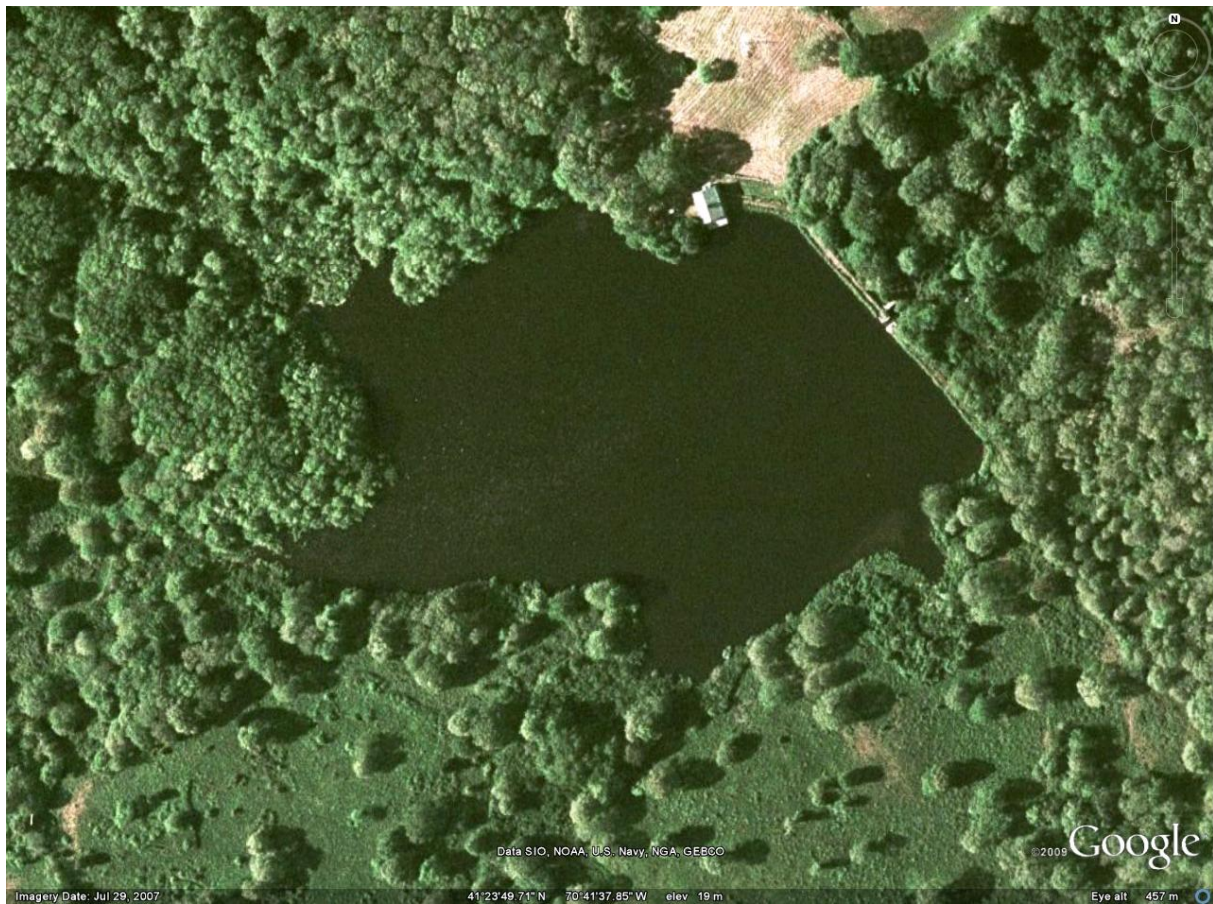


FIGURE 2 AERIAL PHOTO

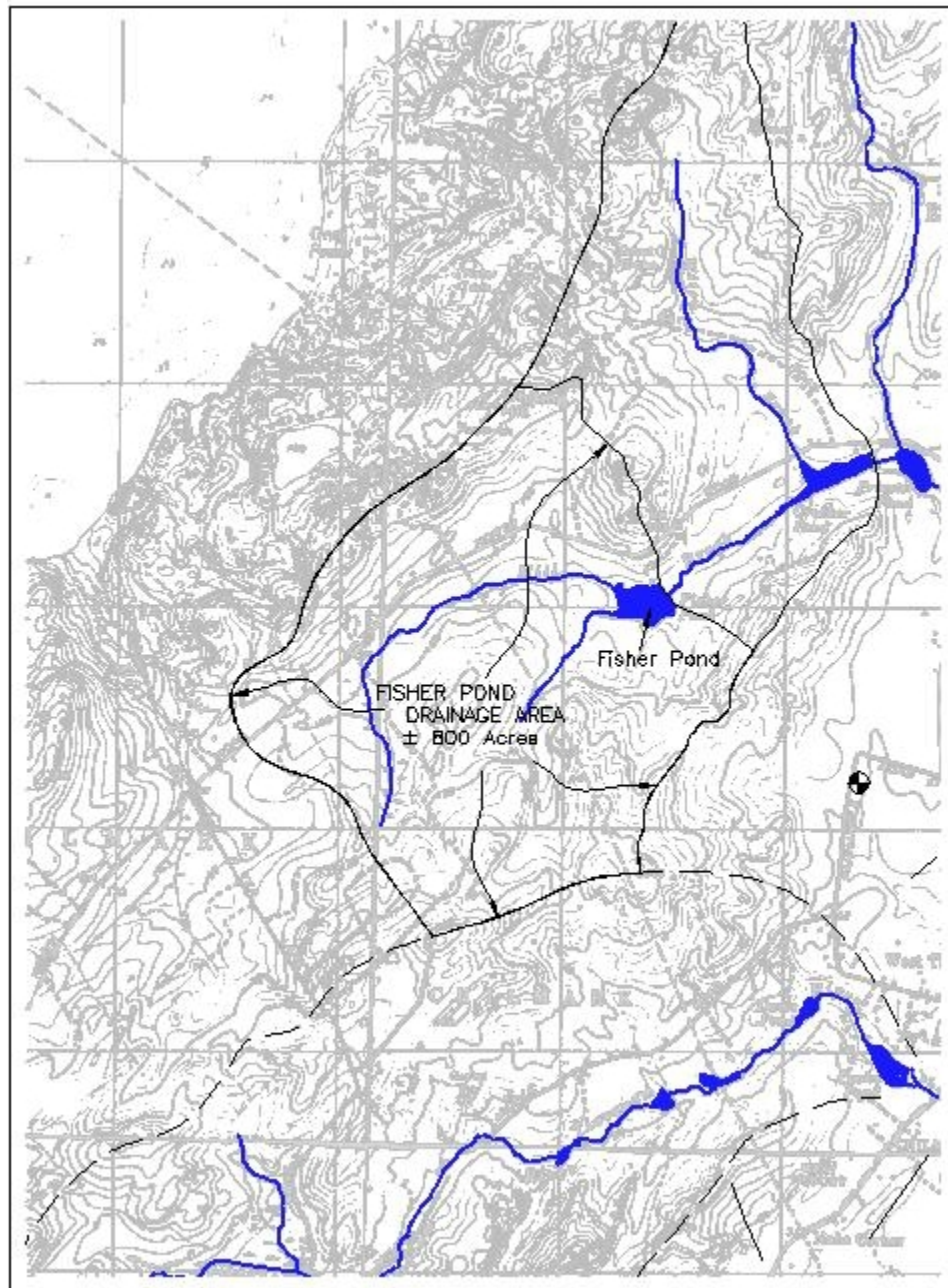


FIGURE 3 DRAINAGE AREA



FIGURE 4 DOWNSTREAM AREA

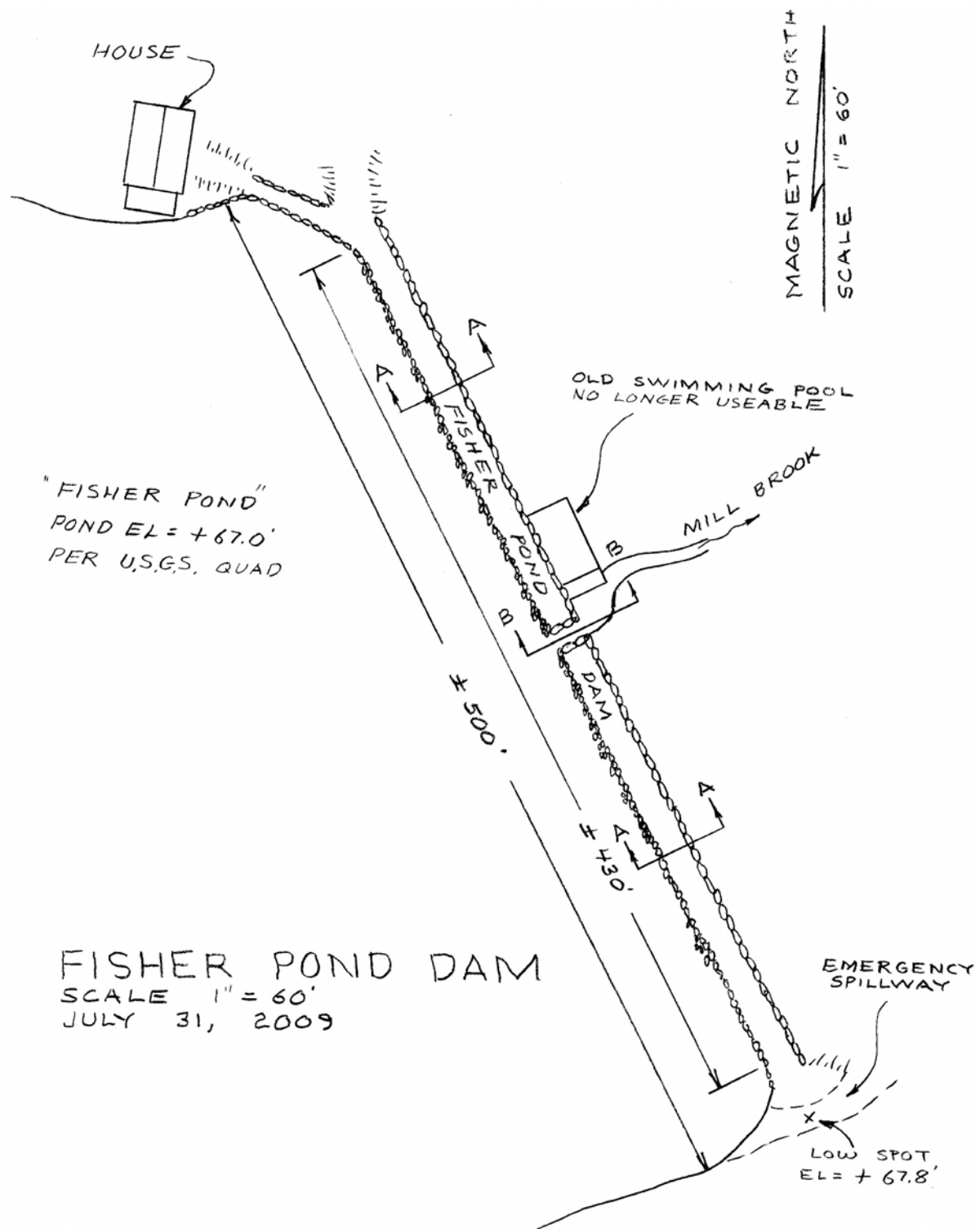
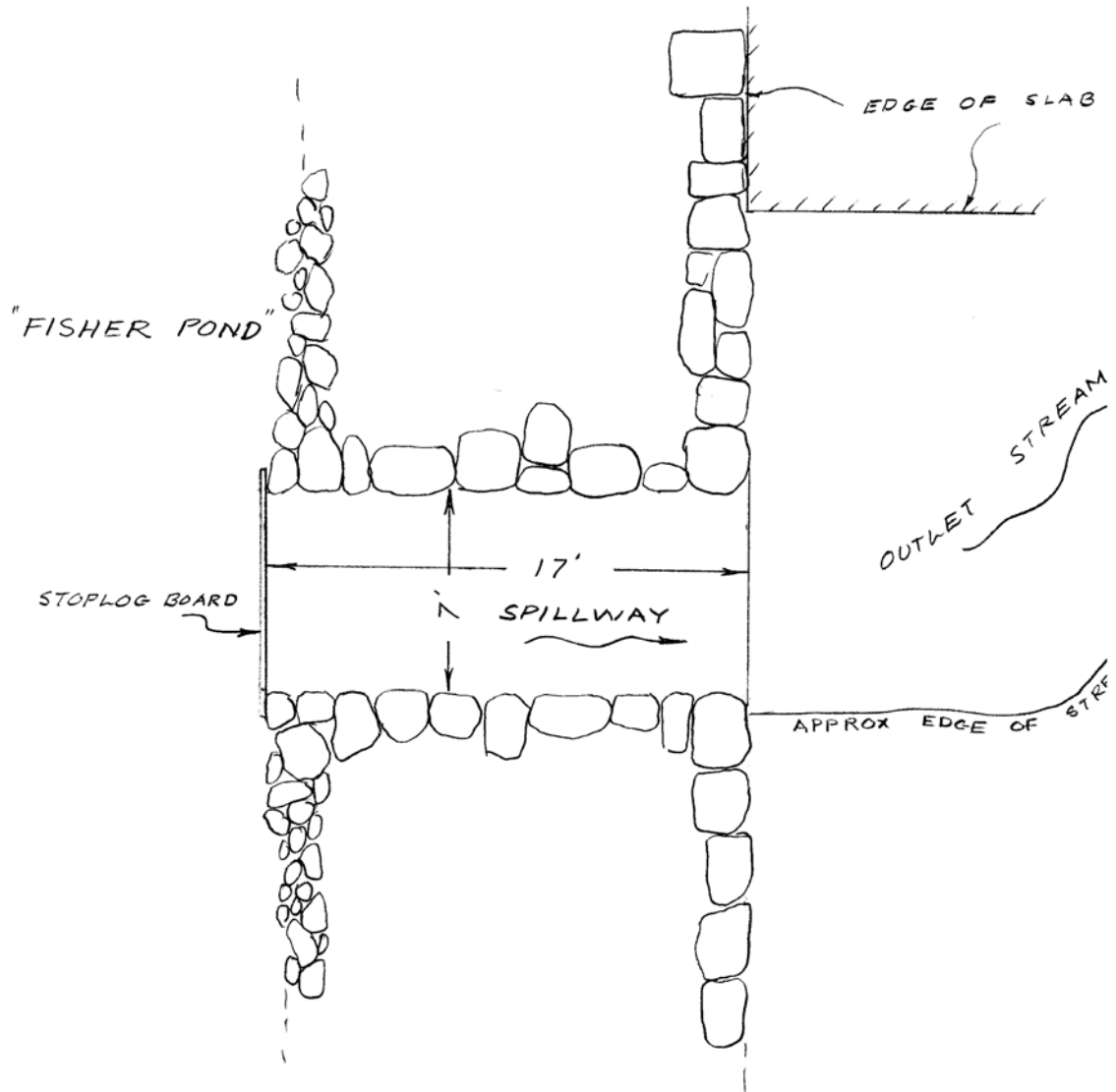


FIGURE 5 SITE SKETCH

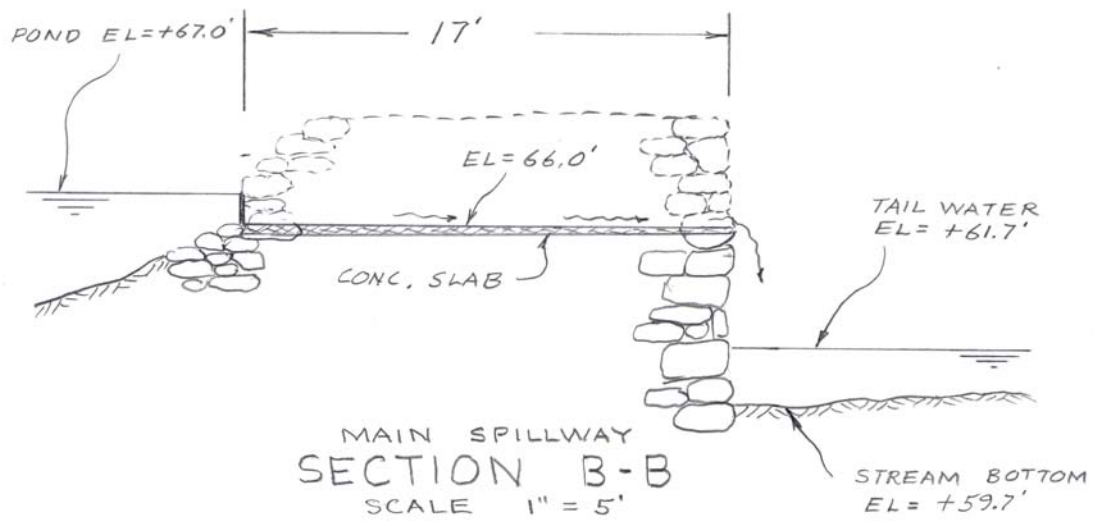
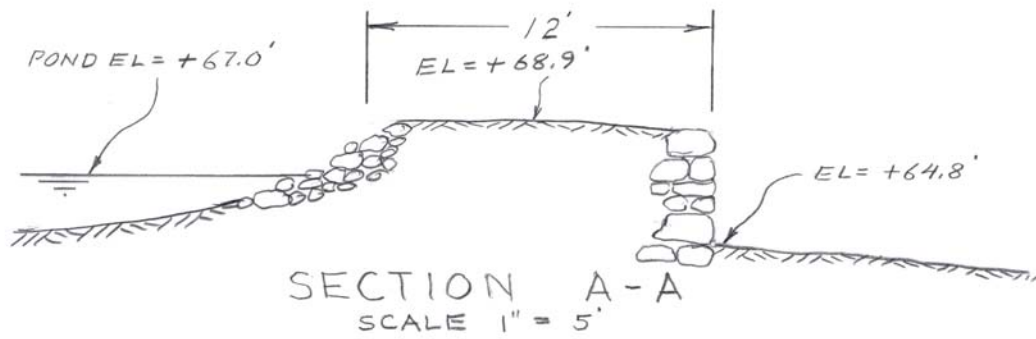


FISHER POND DAM SPILLWAY

SCALE 1" = 5'

JULY 31, 2009

FIGURE 6 SPILLWAY



FISHER POND DAM
JULY 31, 2009

FIGURE 7 SECTIONS

APPENDIX A
Photographs



Overview of dam from upstream



Overview of upstream face from right abutment



Overview of upstream face from left abutment



Overview of dam crest from right abutment



Overview of dam crest from left abutment



Overview of downstream face from right abutment



Overview of downstream face from left abutment



Overview of spillway from upstream



Overview of spillway from downstream



Overview of weir



Overview of stilling basin



Overview of downstream channel



Overview of reservoir

APPENDIX B
Previous Reports

PREVIOUS REPORTS AND REFERENCES

The following references were utilized during the preparation of this report and the development of the recommendations presented herein.

Mill Pond Dam Phase I Inspection / Evaluation Report

Consultant: Kent A. Healy PE

August 30, 2006 – October 30, 2006

Priester's Pond Dam Phase I Inspection / Evaluation Report

Consultant: Kent A. Healy PE

APPENDIX C
Common Definitions

COMMON DAM SAFETY DEFINITIONS

For a comprehensive list of dam engineering terminology and definitions refer to 302 CMR10.00 Dam Safety, or other reference published by FERC, Dept. of the Interior Bureau of Reclamation, or FEMA. Please note should discrepancies between definitions exist, those definitions included within 302 CMR 10.00 govern for dams located within the Commonwealth of Massachusetts.

Orientation

Upstream – Shall mean the side of the dam that borders the impoundment.

Downstream – Shall mean the high side of the dam, the side opposite the upstream side.

Right – Shall mean the area to the right when looking in the downstream direction.

Left – Shall mean the area to the left when looking in the downstream direction.

Dam Components

Dam – Shall mean any artificial barrier, including appurtenant works, which impounds or diverts water.

Embankment – Shall mean the fill material, usually earth or rock, placed with sloping sides, such that it forms a permanent barrier that impounds water.

Crest – Shall mean the top of the dam, usually provides a road or path across the dam.

Abutment – Shall mean that part of a valley side against which a dam is constructed. An artificial abutment is sometimes constructed as a concrete gravity section, to take the thrust of an arch dam where there is no suitable natural abutment.

Appurtenant Works – Shall mean structures, either in dams or separate therefrom, including but not be limited to, spillways; reservoirs and their rims; low-level outlet works; and water conduits including tunnels, pipelines, or penstocks, either through the dams or their abutments.

Spillway – Shall mean a structure over or through which water flows are discharged. If the flow is controlled by gates or boards, it is a controlled spillway; if the fixed elevation of the spillway crest controls the level of the impoundment, it is an uncontrolled spillway.

Size Classification

(as listed in Commonwealth of Massachusetts, 302 CMR 10.00 *Dam Safety*)

Large – structure with a height greater than 40 feet or a storage capacity greater than 1,000 acre-feet.

Intermediate – structure with a height between 15 and 40 feet or a storage capacity of 50 to 1,000 acre-feet.

Small – structure with a height between 6 and 15 feet and a storage capacity of 15 to 50 acre-feet.

Non-Jurisdictional – structure less than 6 feet in height or having a storage capacity of less than 15 acre-feet.

Hazard Classification

(as listed in Commonwealth of Massachusetts, 302 CMR 10.00 *Dam Safety*)

High Hazard (Class I) – Shall mean dams located where failure will likely cause loss of life and serious damage to home(s), industrial or commercial facilities, important public utilities, main highway(s) or railroad(s).

Significant Hazard (Class II) – Shall mean dams located where failure may cause loss of life and damage to home(s), industrial or commercial facilities, secondary highway(s) or railroad(s), or cause the interruption of the use or service of relatively important facilities.

Low Hazard (Class III) – Dams located where failure may cause minimal property damage to others. Loss of life is not expected.

General

EAP – Emergency Action Plan – Shall mean a predetermined (and properly documented) plan of action to be taken to reduce the potential for property damage and/or loss of life in an area affected by an impending dam failure.

O&M Manual – Operations and Maintenance Manual; Document identifying routine maintenance and operational procedures under normal and storm conditions.

Normal Pool – Shall mean the elevation of the impoundment during normal operating conditions.

Acre-foot – Shall mean a unit of volumetric measure that would cover one acre to a depth of one foot. It is equal to 43,560 cubic feet. One million U.S. gallons = 3.068 acre feet.

Height of Dam (Structural Height) – Shall mean the vertical distance from the lowest portion of the natural ground, including any stream channel, along the downstream toe of the dam to the lowest point on the crest of the dam.

Hydraulic Height – means the height to which water rises behind a dam and the difference between the lowest point in the original streambed at the axis of the dam and the maximum controllable water surface.

Maximum Water Storage Elevation – means the maximum elevation of water surface which can be contained by the dam without overtopping the embankment section.

Spillway Design Flood (SDF) – Shall mean the flood used in the design of a dam and its appurtenant works particularly for sizing the spillway and outlet works, and for determining maximum temporary storage and height of dam requirements.

Maximum Storage Capacity – The volume of water contained in the impoundment at maximum water storage elevation.

Normal Storage Capacity – The volume of water contained in the impoundment at normal water storage elevation.

Condition Rating

Unsafe – Major structural*, operational, and maintenance deficiencies exist under normal operating conditions.

Poor – Significant structural*, operation and maintenance deficiencies are clearly recognized for normal loading conditions.

Fair – Significant operational and maintenance deficiencies, no structural deficiencies. Potential deficiencies exist under unusual loading conditions that may realistically occur. Can be used when uncertainties exist as to critical parameters.

Satisfactory – Minor operational and maintenance deficiencies. Infrequent hydrologic events would probably result in deficiencies.

Good – No existing or potential deficiencies recognized. Safe performance is expected under all loading including SDF.

* Structural deficiencies include but are not limited to the following:

- Excessive uncontrolled seepage (e.g., upwelling of water, evidence of fines movement, flowing water, erosion, etc.)
- Missing riprap with resulting erosion of slope
- Sinkholes, particularly behind retaining walls and above outlet pipes, possibly indicating loss of soil due to piping, rather than animal burrows
- Excessive vegetation and tree growth, particularly if it obscures features of the dam and the dam cannot be fully inspected
- Deterioration of concrete structures (e.g., exposed rebar, tilted walls, large cracks with or without seepage, excessive spalling, etc.)
- Inoperable outlets (gates and valves that have not been operated for many years or are broken)

1. NID ID:	MA 02225	4. Inspection Date:	July 31, 2009
2. Dam Name:	FISHER POND DAM	5. Last Insp. Date:	
3. Dam Location:	W. Tisbury, MA	6. Next Inspection:	July 31, 2019
7. Inspector:	KENT A. HEALY		
8. Consultant:	KENT A. HEALY		
9. Hazard Code:	LOW	9a. Is Hazard Code Change Requested?:	No
10. Insp. Frequency:	10 Years	11. Overall Physical Condition of Dam:	SATISFACTORY
12. Spillway Capacity (% SDF)	>100% SDF w/ no actions by Caretaker		
E1. Design Methodology:	1	E7. Low-Level Discharge Capacity:	2
E2. Level of Maintenance:	3	E8. Low-Level Outlet Physical Condition:	2
E3. Emergency Action Plan:	3	E9. Spillway Design Flood Capacity:	5
E4. Embankment Seepage:	5	E10. Overall Physical Condition of the Dam:	4
E5. Embankment Condition:	5	E11. Estimated Repair Cost:	\$1,000
E6. Concrete Condition:	4		

Evaluation Description

E1: DESIGN METHODOLOGY

1. Unknown Design – no design records available
2. No design or post-design analyses
3. No analyses, but dam features appear suitable
4. Design or post design analysis show dam meets most criteria
5. State of the art design – design records available & dam meets all criteria

E2: LEVEL OF MAINTENANCE

1. Dam in disrepair, no evidence of maintenance, no O&M manual
2. Dam in poor level of upkeep, very little maintenance, no O&M manual
3. Dam in fair level of upkeep, some maintenance and standard procedures
4. Adequate level of maintenance and standard procedures
5. Dam well maintained, detailed maintenance plan that is executed

E3: EMERGENCY ACTION PLAN

1. No plan or idea of what to do in the event of an emergency
2. Some idea but no written plan
3. No formal plan but well thought out
4. Available written plan that needs updating
5. Detailed, updated written plan available and filed with MADCR, annual training

E4: SEEPAGE (Embankments, Foundations, & Abutments)

1. Severe piping and/or seepage with no monitoring
2. Evidence of monitored piping and seepage
3. No piping but uncontrolled seepage
4. Minor seepage or high volumes of seepage with filtered collection
5. No seepage or minor seepage with filtered collection

E5: EMBANKMENT CONDITION (See Note 1)

1. Severe erosion and/or large trees
2. Significant erosion or significant woody vegetation
3. Brush and exposed embankment soils, or moderate erosion
4. Unmaintained grass, rodent activity and maintainable erosion
5. Well maintained healthy uniform grass cover

E6: CONCRETE CONDITION (See Note 2)

1. Major cracks, misalignment, discontinuities causing leaks, seepage or stability concerns
2. Cracks with misalignment inclusive of transverse cracks with no misalignment but with potential for significant structural degradation
3. Significant longitudinal cracking and minor transverse cracking
4. Spalling and minor surface cracking
5. No apparent deficiencies

E7: LOW-LEVEL OUTLET DISCHARGE CAPACITY

1. No low level outlet, no provisions (e.g. pumps, siphons) for emptying pond
2. No operable outlet, plans for emptying pond, but no equipment
3. Outlet with insufficient drawdown capacity, pumping equipment available
4. Operable gate with sufficient drawdown capacity
5. Operable gate with capacity greater than necessary

E8: LOW-LEVEL OUTLET PHYSICAL CONDITION

1. Outlet inoperative needs replacement, non-existent or inaccessible
2. Outlet inoperative needs repair
3. Outlet operable but needs repair
4. Outlet operable but needs maintenance
5. Outlet and operator operable and well maintained

E9: SPILLWAY DESIGN FLOOD CAPACITY

1. 0 - 50% of the SDF or unknown
2. 50-90% of the SDF
3. 90 - 100% of the SDF
4. >100% of the SDF with actions required by caretaker (e.g. open outlet)
5. >100% of the SDF with no actions required by caretaker

E10: OVERALL PHYSICAL CONDITION OF DAM

1. UNSAFE – Major structural, operational, and maintenance deficiencies exist under normal operating conditions
2. POOR - Significant structural, operation and maintenance deficiencies are clearly recognized under normal loading conditions
3. FAIR - Significant operational and maintenance deficiencies, no structural deficiencies. Potential deficiencies exist under unusual loading conditions that may realistically occur. Can be used when uncertainties exist as to critical parameters
4. SATISFACTORY - Minor operational and maintenance deficiencies. Infrequent hydrologic events would probably result in deficiencies.
5. GOOD - No existing or potential deficiencies recognized. Safe performance is expected under all loading including SDF

E11: ESTIMATED REPAIR COST

Estimation of the total cost to address all identified structural, operational, maintenance deficiencies. Cost shall be developed utilizing standard estimating guides and procedures

Changes/Deviations to Database Information since Last Inspection

1.1 Summary Data Table

Required Phase I Report Data	Data Provided by the Inspecting Engineer
National ID #	MA 02225
Dam Name	FISHER POND DAM
Dam Name (Alternate)	0
River Name	MILL BROOK
Impoundment Name	FISHER POND
Hazard Class	LOW
Size Class	SMALL
Dam Type	EARTH EMBANKMENT
Dam Purpose	RECREATION
Structural Height of Dam (feet)	8.1
Hydraulic Height of Dam (feet)	7.3'
Drainage Area (sq. mi.)	1.25
Reservoir Surface Area (sq. mi.)	0.01
Normal Impoundment Volume (acre-feet)	36
Max Impoundment Volume ((top of dam) acre-feet)	43
SDF Impoundment Volume* (acre-feet)	43
Spillway Type	BROADCRESTED WEIR
Spillway Length (feet)	17'
Freeboard at Normal Pool (feet)	0.8'
Principal Spillway Capacity* (cfs)	60
Auxiliary Spillway Capacity* (cfs)	20
Low-Level Outlet Capacity* (cfs)	0 (inoperable)
Spillway Design Flood* (flow rate - cfs)	100 YR / 55 CFS
Winter Drawdown (feet below normal pool)	0
Drawdown Impoundment Vol. (acre-feet)	36
Latitude	41° 29' 52"
Longitude	70° 41' 32"
City/Town	W. Tisbury
County Name	Dukes
Public Road on Crest	NO
Public Bridge over Spillway	NO
EAP Date (if applicable)	0
Owner Name	Edwin & Jeanne Woods
Owner Address	P.O. BOX 491
Owner Town	SANTA MARIA, CA 93454
Owner Phone	0
Owner Emergency Phone	0
Owner Type	0
Caretaker Name	Kent A. Healy
Caretaker Address	P.O. BOX 128
Caretaker Town	WEST TISBURY, MA 02575
Caretaker Phone	508 - 693 - 6736
Caretaker Emergency Phone	0
Date of Field Inspection	7/31/2009
Consultant Firm Name	KENT A. HEALY
Inspecting Engineer	KENT A. HEALY
Engineer Phone Number	508-693-6736

*In the event a hydraulic and hydrologic analysis has not been completed for the dam, indicate "No H&H" in this table, recommendation section shall include specific recommendation to hire a qualified dam engineering consultant to conduct analysis to determine spillway adequacy in conformance with 302 CMR 10.00.

DAM DEFICIENCIES

Dam Name FISHER POND DAM
NID ID # MA 02225

Copy and paste to this spreadsheet the dam deficiencies enumerated in Section 3 of the Phase I Dam Safety Inspection Report. Put each deficiency in a separate cell. This sheet does not need to be printed out. It is for the internal use of DCR. This Excel spreadsheet must be submitted on a CD with the PDF of the report.

Deficiency No. **Description**

1 The trees and brush within 15, feet of the downstream face should be cut with the roots left in place.

2

3

4

5

6

7

8

DAM SAFETY INSPECTION CHECKLIST

NAME OF DAM: <u>FISHER POND DAM</u>	STATE ID #: <u>7 - 4 - 327 - 5</u>
REGISTERED: ☒ YES ☐ NO	NID ID #: <u>MA 02225</u>
STATE SIZE CLASSIFICATION: <u>SMALL</u>	STATE HAZARD CLASSIFICATION: <u>LOW</u>
	CHANGE IN HAZARD CLASSIFICATION REQUESTED?: <u>No</u>
<u>DAM LOCATION INFORMATION</u>	
CITY/TOWN: <u>W. Tisbury</u>	COUNTY: <u>Dukes</u>
DAM LOCATION: <u>OFF NORTH ROAD</u> (street address if known)	ALTERNATE DAM NAME: _____
USGS QUAD.: <u>VINEYARD HAVEN</u>	LAT.: <u>41° 29' 52"</u> LONG.: <u>70° 41' 32"</u>
DRAINAGE BASIN: <u>Islands</u>	RIVER: <u>MILL BROOK</u>
IMPOUNDMENT NAME(S): <u>FISHER POND</u>	
<u>GENERAL DAM INFORMATION</u>	
TYPE OF DAM: <u>EARTH EMBANKMENT</u>	OVERALL LENGTH (FT): <u>430</u>
PURPOSE OF DAM: <u>RECREATION</u>	NORMAL POOL STORAGE (ACRE-FT): <u>36</u>
YEAR BUILT: <u>1800's</u>	MAXIMUM POOL STORAGE (ACRE-FT): <u>43</u>
STRUCTURAL HEIGHT (FT): <u>8</u>	EL. NORMAL POOL (FT): <u>67.0</u>
HYDRAULIC HEIGHT (FT): <u>7.3'</u>	EL. MAXIMUM POOL (FT): <u>67.8</u>
<u>FOR INTERNAL MADCR USE ONLY</u>	
FOLLOW-UP INSPECTION REQUIRED: ☐ YES ☐ NO	CONDITIONAL LETTER: ☐ YES ☐ NO

NAME OF DAM: <u>FISHER POND DAM</u>		STATE ID #: <u>7 - 4 - 327 - 5</u>	
INSPECTION DATE: <u>July 31, 2009</u>		NID ID #: <u>MA 02225</u>	
<u>INSPECTION SUMMARY</u>			
DATE OF INSPECTION: <u>July 31, 2009</u>		DATE OF PREVIOUS INSPECTION: _____	
TEMPERATURE/WEATHER: <u>FAIR</u>		ARMY CORPS PHASE I: ☐ YES ☒ NO If YES, date _____	
CONSULTANT: <u>KENT A. HEALY</u>		PREVIOUS DCR PHASE I: ☐ YES ☒ NO If YES, date _____	
BENCHMARK/DATUM: <u>NGVD 1929 (FROM USGS QUADRANGLE SHEET)</u>			
OVERALL PHYSICAL CONDITION OF DAM: <u>SATISFACTORY</u> DATE OF LAST REHABILITATION: _____			
SPILLWAY CAPACITY: <u>>100% SDF w/ no actions by Caretaker</u>			
EL. POOL DURING INSP.: <u>+67'</u>		EL. TAILWATER DURING INSP.: <u>61.7</u>	
<u>PERSONS PRESENT AT INSPECTION</u>			
<u>NAME</u>	<u>TITLE/POSITION</u>	<u>REPRESENTING</u>	
KENT A. HEALY	CIVIL ENGINEER	KENT A. HEALY	
WILLIAM M. AUSTIN	LAND SURVEYOR	KENT A. HEALY	
<u>EVALUATION INFORMATION</u>			
		Click on box to select E-code	
E1) TYPE OF DESIGN	1	E8) LOW-LEVEL OUTLET CONDITION	2
E2) LEVEL OF MAINTENANCE	3	E9) SPILLWAY DESIGN FLOOD CAPACITY	5
E3) EMERGENCY ACTION PLAN	3	E10) OVERALL PHYSICAL CONDITION	4
E4) EMBANKMENT SEEPAGE	5	E11) ESTIMATED REPAIR COST	\$1,000
E5) EMBANKMENT CONDITION	5	ROADWAY OVER CREST	NO
E6) CONCRETE CONDITION	4	BRIDGE NEAR DAM	NO
E7) LOW-LEVEL OUTLET CAPACITY	2		
NAME OF INSPECTING ENGINEER: _____ SIGNATURE: _____			

NAME OF DAM: <u>FISHER POND DAM</u>		STATE ID #: <u>7 - 4 - 327 - 5</u>	
INSPECTION DATE: <u>July 31, 2009</u>		NID ID #: <u>MA 02225</u>	
OWNER: ORGANIZATION	LAND OWNER	CARETAKER: ORGANIZATION	KENT A. HEALY
NAME/TITLE	E & J WOODS	NAME/TITLE	CIVIL ENGINEER
STREET	P.O. BOX 491	STREET	P.O. BOX 128
TOWN, STATE, ZIP	SANTA MARIA, CA 93454	TOWN, STATE, ZIP	WEST TISBURY, MA 02575
PHONE		PHONE	508 - 693 - 6736
EMERGENCY PH. #		EMERGENCY PH. #	
FAX		FAX	
EMAIL		EMAIL	
OWNER TYPE			
PRIMARY SPILLWAY TYPE		<u>BROADCRESTED WEIR</u>	
SPILLWAY LENGTH (FT)	<u>17'</u>	SPILLWAY CAPACITY (CFS)	<u>60</u>
AUXILIARY SPILLWAY TYPE	<u>low swail at south end of dam</u>	AUX. SPILLWAY CAPACITY (CFS)	<u>20</u>
NUMBER OF OUTLETS	<u>1</u>	OUTLET(S) CAPACITY (CFS)	<u>0 (inoperable)</u>
TYPE OF OUTLETS	<u>STONE CULVERT</u>	TOTAL DISCHARGE CAPACITY (CFS)	<u>80</u>
DRAINAGE AREA (SQ MI)	<u>1.25</u>	SPILLWAY DESIGN FLOOD (PERIOD/CFS)	<u>100 YR / 55 CFS</u>
HAS DAM BEEN BREACHED OR OVERTOPPED		☐ YES ☒ NO IF YES, PROVIDE DATE(S) _____	
FISH LADDER (LIST TYPE IF PRESENT) _____			
DOES CREST SUPPORT PUBLIC ROAD?		☐ YES ☒ NO IF YES, ROAD NAME: _____	
PUBLIC BRIDGE WITHIN 50' OF DAM?		☐ YES ☒ NO IF YES, ROAD/BRIDGE NAME: _____	
		MHD BRIDGE NO. (IF APPLICABLE) _____	

NAME OF DAM: <u>FISHER POND DAM</u>		STATE ID #: <u>7 - 4 - 327 - 5</u>			
INSPECTION DATE: <u>July 31, 2009</u>		NID ID #: <u>MA 02225</u>			
EMBANKMENT (CREST)					
AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
CREST	1. SURFACE TYPE	GRASS	X		
	2. SURFACE CRACKING		X		
	3. SINKHOLES, ANIMAL BURROWS		X		
	4. VERTICAL ALIGNMENT (DEPRESSIONS)		X		
	5. HORIZONTAL ALIGNMENT		X		
	6. RUTS AND/OR PUDDLES		X		
	7. VEGETATION (PRESENCE/CONDITION)		X		
	8. ABUTMENT CONTACT		X		
ADDITIONAL COMMENTS: _____ _____ _____ _____ _____					

NAME OF DAM: <u>FISHER POND DAM</u>		STATE ID #: <u>7 - 4 - 327 - 5</u>			
INSPECTION DATE: <u>July 31, 2009</u>		NID ID #: <u>MA 02225</u>			
EMBANKMENT (D/S SLOPE)					
AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
D/S SLOPE	1. WET AREAS (NO FLOW)		X		
	2. SEEPAGE		X		
	3. SLIDE, SLOUGH, SCARP		X		
	4. EMB.-ABUTMENT CONTACT		X		
	5. SINKHOLE/ANIMAL BURROWS		X		
	6. EROSION		X		
	7. UNUSUAL MOVEMENT		X		
	8. VEGETATION (PRESENCE/CONDITION)	TREES AND BRUSH WITHIN 15' TO BE CUT			X
ADDITIONAL COMMENTS: _____ _____ _____ _____ _____					

NAME OF DAM: <u>FISHER POND DAM</u>		STATE ID #: <u>7 - 4 - 327 - 5</u>			
INSPECTION DATE: <u>July 31, 2009</u>		NID ID #: <u>MA 02225</u>			
EMBANKMENT (U/S SLOPE)					
AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
U/S SLOPE	1. SLIDE, SLOUGH, SCARP		X		
	2. SLOPE PROTECTION TYPE AND COND.		X		
	3. SINKHOLE/ANIMAL BURROWS		X		
	4. EMB.-ABUTMENT CONTACT		X		
	5. EROSION		X		
	6. UNUSUAL MOVEMENT		X		
	7. VEGETATION (PRESENCE/CONDITION)	TREES AND BRUSH WITHIN 10' TO BE CUT			X
ADDITIONAL COMMENTS: _____ _____ _____ _____ _____ _____ _____ _____					

NAME OF DAM: <u>FISHER POND DAM</u>		STATE ID #: <u>7 - 4 - 327 - 5</u>			
INSPECTION DATE: <u>July 31, 2009</u>		NID ID #: <u>MA 02225</u>			
INSTRUMENTATION					
AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
INSTR.	1. PIEZOMETERS		X		
	2. OBSERVATION WELLS		X		
	3. STAFF GAGE AND RECORDER		X		
	4. WEIRS		X		
	5. INCLINOMETERS		X		
	6. SURVEY MONUMENTS		X		
	7. DRAINS		X		
	8. FREQUENCY OF READINGS		X		
	9. LOCATION OF READINGS		X		
ADDITIONAL COMMENTS: _____ _____ _____ _____ _____					

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INSPECTION DATE: <u>July 31, 2009</u>		NID ID #: <u>MA 02225</u>			
DOWNSTREAM MASONRY WALLS					
AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
D/S WALLS	1. WALL TYPE	STONE MASONRY	X		
	2. WALL ALIGNMENT		X		
	3. WALL CONDITION		X		
	4. HEIGHT: TOP OF WALL TO MUDLINE	min: max: avg:	X		
	5. SEEPAGE OR LEAKAGE		X		
	6. ABUTMENT CONTACT		X		
	7. EROSION/SINKHOLES BEHIND WALL		X		
	8. ANIMAL BURROWS		X		
	9. UNUSUAL MOVEMENT		X		
	10. WET AREAS AT TOE OF WALL		X		
ADDITIONAL COMMENTS: _____ _____ _____ _____ _____					

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INSPECTION DATE: <u>July 31, 2009</u>		NID ID #: <u>MA 02225</u>			
UPSTREAM MASONRY WALLS					
AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
U/S WALLS	1. WALL TYPE	N/A			
	2. WALL ALIGNMENT				
	3. WALL CONDITION				
	4. HEIGHT: TOP OF WALL TO MUDLINE	min: max: avg:			
	5. ABUTMENT CONTACT				
	6. EROSION/SINKHOLES BEHIND WALL				
	7. ANIMAL BURROWS				
	8. UNUSUAL MOVEMENT				
ADDITIONAL COMMENTS: _____ _____ _____ _____ _____					

NAME OF DAM: <u>FISHER POND DAM</u>		STATE ID #: <u>7 - 4 - 327 - 5</u>			
INSPECTION DATE: <u>July 31, 2009</u>		NID ID #: <u>MA 02225</u>			
DOWNSTREAM AREA					
AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
D/S AREA	1. ABUTMENT LEAKAGE		X		
	2. FOUNDATION SEEPAGE		X		
	3. SLIDE, SLOUGH, SCARP		X		
	4. WEIRS		X		
	5. DRAINAGE SYSTEM		X		
	6. INSTRUMENTATION		X		
	7. VEGETATION	TREES AND BRUSH WITHIN 15' OF DAM TO BE CUT			X
	8. ACCESSIBILITY		X		
	9. DOWNSTREAM HAZARD DESCRIPTION				
10. DATE OF LAST EAP UPDATE		0			
ADDITIONAL COMMENTS: _____ _____ _____ _____ _____					

NAME OF DAM: FISHER POND DAM

STATE ID #: 7 - 4 - 327 - 5

INSPECTION DATE: July 31, 2009

NID ID #: MA 02225

MISCELLANEOUS

AREA INSPECTED	CONDITION	OBSERVATIONS
MISC.	1. RESERVOIR DEPTH (AVG)	
	2. RESERVOIR SHORELINE	GOOD
	3. RESERVOIR SLOPES	GOOD
	4. ACCESS ROADS	
	5. SECURITY DEVICES	
	6. VANDALISM OR TRESPASS	☐ YES ☒ NO WHAT:
	7. AVAILABILITY OF PLANS	☐ YES ☒ NO DATE:
	8. AVAILABILITY OF DESIGN CALCS	☐ YES ☒ NO DATE:
	9. AVAILABILITY OF EAP/LAST UPDATE	☐ YES ☒ NO DATE:
	10. AVAILABILITY OF O&M MANUAL	☐ YES ☒ NO DATE:
	11. CARETAKER/OWNER AVAILABLE	☒ YES ☐ NO DATE:
	12. CONFINED SPACE ENTRY REQUIRED	☐ YES ☒ NO PURPOSE:

ADDITIONAL COMMENTS:

NAME OF DAM: <u>FISHER POND DAM</u>		STATE ID #: <u>7 - 4 - 327 - 5</u>			
INSPECTION DATE: <u>July 31, 2009</u>		NID ID #: <u>MA 02225</u>			
PRIMARY SPILLWAY					
AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
SPILLWAY	SPILLWAY TYPE	BROADCRESTED WEIR	X		
	WEIR TYPE	STOPLOG BOARD	X		
	SPILLWAY CONDITION	GOOD	X		
	TRAINING WALLS	GOOD	X		
	SPILLWAY CONTROLS AND CONDITION		X		
	UNUSUAL MOVEMENT		X		
	APPROACH AREA		X		
	DISCHARGE AREA		X		
	DEBRIS		X		
	WATER LEVEL AT TIME OF INSPECTION		X		
ADDITIONAL COMMENTS: _____ _____ _____ _____ _____					

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INSPECTION DATE: <u>July 31, 2009</u>		NID ID #: <u>MA 02225</u>			
AUXILIARY SPILLWAY					
AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
SPILLWAY	SPILLWAY TYPE	GRASS	X		
	WEIR TYPE		X		
	SPILLWAY CONDITION	GOOD	X		
	TRAINING WALLS		X		
	SPILLWAY CONTROLS AND CONDITION		X		
	UNUSUAL MOVEMENT		X		
	APPROACH AREA		X		
	DISCHARGE AREA		X		
	DEBRIS		X		
	WATER LEVEL AT TIME OF INSPECTION		X		
ADDITIONAL COMMENTS: _____ _____ _____ _____ _____					

NAME OF DAM: <u>FISHER POND DAM</u>		STATE ID #: <u>7 - 4 - 327 - 5</u>			
INSPECTION DATE: <u>July 31, 2009</u>		NID ID #: <u>MA 02225</u>			
OUTLET WORKS					
AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
OUTLET WORKS	TYPE	N/A			
	INTAKE STRUCTURE				
	TRASHRACK				
	PRIMARY CLOSURE				
	SECONDARY CLOSURE				
	CONDUIT				
	OUTLET STRUCTURE/HEADWALL				
	EROSION ALONG TOE OF DAM				
	SEEPAGE/LEAKAGE				
	DEBRIS/BLOCKAGE				
	UNUSUAL MOVEMENT				
	DOWNSTREAM AREA				
	MISCELLANEOUS				
ADDITIONAL COMMENTS: _____ _____ _____ _____ _____					

NAME OF DAM: <u>FISHER POND DAM</u>		STATE ID #: <u>7 - 4 - 327 - 5</u>			
INSPECTION DATE: <u>July 31, 2009</u>		NID ID #: <u>MA 02225</u>			
CONCRETE/MASONRY DAMS					
AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
GENERAL	TYPE	N/A			
	AVAILABILITY OF PLANS				
	AVAILABILITY OF DESIGN CALCS				
	PIEZOMETERS				
	OBSERVATION WELLS				
	INCLINOMETERS				
	SEEPAGE GALLERY				
	UNUSUAL MOVEMENT				
ADDITIONAL COMMENTS: _____ _____ _____ _____ _____					

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INSPECTION DATE: <u>July 31, 2009</u>		NID ID #: <u>MA 02225</u>			
CONCRETE/MASONRY DAMS (CREST)					
AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
CREST	TYPE	N/A			
	SURFACE CONDITIONS				
	CONDITIONS OF JOINTS				
	UNUSUAL MOVEMENT				
	HORIZONTAL ALIGNMENT				
	VERTICAL ALIGNMENT				
ADDITIONAL COMMENTS: _____ _____ _____ _____ _____					

NAME OF DAM: <u>FISHER POND DAM</u>		STATE ID #: <u>7 - 4 - 327 - 5</u>			
INSPECTION DATE: <u>July 31, 2009</u>		NID ID #: <u>MA 02225</u>			
CONCRETE/MASONRY DAMS (DOWNSTREAM FACE)					
AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
D/S FACE	TYPE	N/A			
	SURFACE CONDITIONS				
	CONDITIONS OF JOINTS				
	UNUSUAL MOVEMENT				
	ABUTMENT CONTACT				
	LEAKAGE				
ADDITIONAL COMMENTS: _____ _____ _____ _____ _____					

NAME OF DAM: <u>FISHER POND DAM</u>		STATE ID #: <u>7 - 4 - 327 - 5</u>			
INSPECTION DATE: <u>July 31, 2009</u>		NID ID #: <u>MA 02225</u>			
CONCRETE/MASONRY DAMS (UPSTREAM FACE)					
AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
U/S FACE	TYPE	N/A			
	SURFACE CONDITIONS				
	CONDITIONS OF JOINTS				
	UNUSUAL MOVEMENT				
	ABUTMENT CONTACTS				
ADDITIONAL COMMENTS: _____ _____ _____ _____ _____					