

CROCKER POND DAM

PHASE I

INSPECTION / EVALUATION REPORT



Dam Name:	CROCKER POND DAM
State Dam ID#:	7-4-327-4
NID ID#:	MA 01011
Owner:	Seven Gates Farm Corp.
Town:	West Tisbury
Consultant:	Kent A. Healy, P.E.
Date of Inspection:	May 22, 2009

EXECUTIVE SUMMARY

Crocker Pond Dam in West Tisbury was inspected May 22, 2009 by Kent A. Healy P.E. and William M. Austin P.L.S. Dr. Healy is a civil engineer, a resident of West Tisbury, and has more than 30 years of dam engineering experience. William Austin is a licensed land surveyor with more than 20 years of dam inspection experience.

Old records mention a dam at this site in the very early 1800's. The current dam was probably built between 1858 and 1860 by Dr. Daniel Fisher and was used to grind grain into flour. Rudolph Crocker purchased the property in 1885 and the pond became known as Crocker Pond. Currently the property is owned by the Seven Gates Farm Corporation and this site is leased to Edward A. & Dianne S. O'Neal

The dam is constructed with a cut stone wall on the upstream face and an earth embankment on the downstream side. On the downstream side of the dam the old mill building is still in place and has been maintained well over the years. There is a gate to control water going into the mill machinery. This gate was open at the time of inspection. The water turbine has been cut open or partly removed to allow the water to pass through. The main sluiceway has slots for stop logs and currently controls the level of the pond. A low level outlet alongside the main sluiceway is inoperable at this time. The visual inspection showed the dam to be in satisfactory condition.

Maintenance of the dam has been good. The area on the downstream side of the dam should be maintained clear of brush and trees.

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 unless reported otherwise.

In reviewing this report, it should be realized that 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.

It is critical to note that the condition of the dam depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the reported condition of the dam will continue to represent the condition of the dam at some point in the future. Only through continued care and inspection can there be any chance that unsafe conditions be detected.

Kent A. Healy ScD, PE

Massachusetts License No.: 28498

License Type:

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SECTION 1

1.0 DESCRIPTION OF PROJECT

1.1 General

1.1.1 Authority

Seven Gates Farm Corporation retained Kent A. Healy, PE to perform a visual inspection and develop a report of conditions for the dam at the Crocker Pond Dam along the Mill Brook in West Tisbury, Dukes County, Massachusetts. 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.

1.1.2 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 repair needs 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 with an evaluation of the structure, recommendations and remedial actions, and an estimate of costs of those actions.

1.1.3 Definitions

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

1.2 Description of Project

1.2.1 Location

Crocker Pond Dam is located at N 41° 24' 12" W 70° 40' 54" . It is about 200 feet south of North Road and about 0.3 miles west of the intersection of State Road and North Road.

1.2.2 Owner/Caretaker

The owner is Seven Gates Farm Corporation, RFD, 301 South Gate Road, West Tisbury, MA 02568. (508-693-0016) The Caretaker is Charlie Pachico with the same address.

1.2.3 Purpose of the Dam

The dam was originally built to provide water power for a grist mill. Today the dam is maintained as an historic structure and is protected in Town Zoning as such. The pond is used for recreation and fire protection.

1.2.4 Description of the Dam and Appurtenances

The dam is constructed with a cut stone wall on the upstream face and an earth embankment on the downstream side. On the downstream side of the dam the old mill building is still in place and has been maintained well over the years. There is a gate to control water going into the mill machinery. This gate was open at the time of inspection. The water turbine has been cut open or partly removed to allow the water to pass through. The main sluiceway has slots for stop logs and currently controls the level of the pond. A low level outlet alongside the main sluiceway is inoperable at this time. The visual inspection showed the dam to be in satisfactory condition.

1.2.5 Operations and Maintenance

Seven Gates Farm Corporation is responsible for the operation and maintenance.

1.2.6 DCR Size Classification

Crocker Pond Dam has a height of dam of approximately 12 feet and a maximum storage capacity of 45.9 acre-feet, based on water depths measured during this inspection. Therefore, in accordance with Department of Conservation and Recreation Office of Dam Safety classification, 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, Crocker Pond Dam is a small size structure.

1.2.7 DCR Hazard Potential Classification

Crocker Pond Dam is located upstream of 3 acre swamp and Priester Pond. There is no development from Crocker Pond Dam downstream to Priester Pond Dam. Failure of the dam at maximum pool would not release enough water to cause the dam at Priester Pond to fail. There are no structures to be harmed. 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, Crocker Pond Dam should be classified as a Low Hazard class III dam.

1.3 Pertinent Engineering Data

1.3.1 Drainage Area

The drainage area for Crocker Pond Dam is approximately 2.2 square miles and extends through the communities of West Tisbury and Chilmark.

The author has, since 1990 studied the surface water and ground water contributions to Tisbury Great Pond as part of a continuing study, with the Martha's Vineyard Commission, of the hydrology of Tisbury Great Pond. This study involved continuous measurement of the flow of the Tiasquam River and the Mill Brook, and test holes to determine the elevation and flow direction of groundwater and ground characteristics of the water sheds. The surface water sheds and groundwater sheds are shown in figure XX. The stream flow derives from rain that falls on the approximately 1,400 acres (2.2 square miles) upstream of Crocker Pond. This area is largely wooded with a significant portion in conservation. As a result, the runoff coefficient, as measured during the last 18 years, is quite low.

1.3.2 Reservoir

At normal pool the pond covers about 7.6 Acres and contains about 30 acre feet of water at normal pond level. This was determined by taking actual water depths at the time of inspection and calculating the area with a planimeter.

1.3.3 Discharges at the Dam Site

The largest stream flow during the last 23 years (1986 to 2009) occurred at about 7 AM June 14, 1998 after about 7 inches of rain fell on the Mill Brook water shed from 4 to 9 PM June 13, 1998. The peak flow was about 130 cfs.

1.3.4 General Elevations (feet)

- A. Top of Dam +56.0'
- B. Spillway Design Flood Pool +54.6'
- C. Normal Pool +54.0'
- D. Spillway Crest +53.7'
- E. Downstream Water at Time of Inspection +44.6'
- F. Streambed at Toe of the Dam +44.1'

1.3.5 Main Spillway Data

- A. Type Broad Crested Weir made of cut stone
- B. Weir Length 8'
- C. Weir Crest Elevation +53.7

1.3.7 Design and Construction Records and History

There are no construction records of the dam

1.3.8 Operating Records

Stop logs have been kept in place to maintain the current pool level for many years. There are no records available.

SECTION 2

2.0 INSPECTION

2.1 Visual Inspection

Crocker Pond Dam was inspected on May 22, 2009. At the time of the inspection, the weather was fair with no extreme weather events. Photographs were taken during the inspection and are included in Appendix A.

2.1.1 General Findings

In general, Crocker Pond Dam was found to be in Good condition

2.1.2 Dam

The upstream face is faced with a cut stone wall which provides protection from ice and wave damage.

The dam north of the mill building is about 30 feet wide. The 10 feet abutting the pond is mowed grass with an elevation of +56.0' or higher. The next 20' has a grassy road for access to the mill building and is at elevation $\pm 53.0'$. The downstream face is vegetated with brush and small trees.

The section of dam between the mill building and the main sluiceway has a cut stone wall for the downstream face. This wall is $\pm 8'$ high and appears to be in good condition.

The downstream face of the dam to the south of the main spillway is a cut stone wall with overflow spillways on top. There is a concrete slab abutting the. This slab is designed to catch the water from the spillway above and prevent erosion and undermining of the wall.

2.1.3 Appurtenant Structures

The main spillway is cut granite on each side and the bottom sill is granite and concrete. There are slots for stop logs to control the flow.

There is a low level outlet just to the north of the main spillway. Some of the old gate operating mechanism is still in place, however it is in operative at this time.

The southern part of the dam has emergency / auxiliary spillways along the top. The two spillways are 1.6' high from the existing stop logs to the top of the dam. One is 14.5' wide the other is 18.5' wide. These two spillways provide for 95 cu ft / sec and 120 cu ft / sec respectively of flow over the existing stop logs.

On the downstream side of the dam at the emergency spillways there is a concrete pad to catch the discharge and prevent undermining and erosion of the face of the dam. This slab is pitched to drain into the main discharge channel.

2.1.4 Downstream Area

The discharge channel for the main spill way is approximately 15' wide and the sides are lined with stone to prevent erosion. The stream runs east into a swamp and then into Priester Pond.

2.1.5 Reservoir Area

Crocker Pond is an impoundment on Mill Brook, created and held by Crocker Pond Dam. It covers about 7 acres and is about 6' deep at the deepest spot found. The shoreline is wooded with the exception of the one dwelling on the pond at the north end of the dam.

2.2 Caretaker Interview

Charles Pachico the superintendent at Seven Gates Farm is responsible for the maintenance and any repairs on the dam.

2.3 Operation and Maintenance Procedures

There are no written operation or maintenance procedures for the dam. Mr. Pachico has kept the vegetation cut back and the stop logs in place.

2.4 Emergency Warning System

There is no emergency action plan or warning system.

2.5 Hydrologic/Hydraulic Data

The Crocker Pond Dam has a structural height of 12'. Normal pond storage is ± 30 acre feet. Maximum storage without overtopping is ± 46 acre feet.

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 inches in 24 hours. A 6 hour 100 year rain fall would be about 6.0 inches. The later would be more appropriate given the approximately 12 hour concentration of the Crocker Pond Watershed. On June 13, 1998 from 4 to 9 PM about 6 inches of rain fell on the Crocker Pond watershed, as measured by a rain gauge in Chilmark and the authors rain gauge in West Tisbury, resulting in a peak flow at 7 AM, June 14 of 130 CFS flow in the Mill Brook as measured by the author with a flow velocity meter at the Mill Pond Dam downstream. That flow therefore represents the 100 year flow and since Crocker Pond Dam was not overtopped during the storm, the existing spillway capacity is sufficient for the design flood. The author calculated the total spillway capacity to be as follows.

Emergency spillways $95 \text{ cfs} + 122 \text{ cfs} = 217 \text{ cfs}$

Main spillway 75 cfs

TOTAL SPILLWAY CAPACITY $= 290 \pm 20 \text{ cfs.}$

2.6 Structural Stability/ Overtopping Potential

.2.6.1 Structural Stability

Failure of the dam would only occur after several days of overtopping, and the resulting erosion and lowering of the dam crest.

2.6.2 Overtopping Potential

A significantly greater rainfall than a 100 year storm would be needed to overtop the dam.

SECTION 3

3.0 ASSESSMENTS AND RECOMMENDATIONS

3.1 Assessments

In general, the overall condition of Crocker Pond Dam is Satisfactory

1. Trees and brush within 10 feet of the downstream face should be cut and the roots left in place.

2. The downstream edge of the concrete apron at the base of the high level over flow spillway should be reinforced with 1' diameter rocks placed on a gravel bed to prevent further undermining.

3. The trees near the masonry walls lining the down stream channel should also be cut leaving the stumps in place.

3.2 Studies and Analyses

No studies or analyses are needed to insure the continued safety of this dam.

3.3 Recurrent Maintenance Recommendations

Brush and trees should be kept trimmed within 10' of the dam.

3.4 Minor Repair Recommendations

There are no recommendations to improve the overall condition of the dam

3.5 Remedial Modifications Recommendations

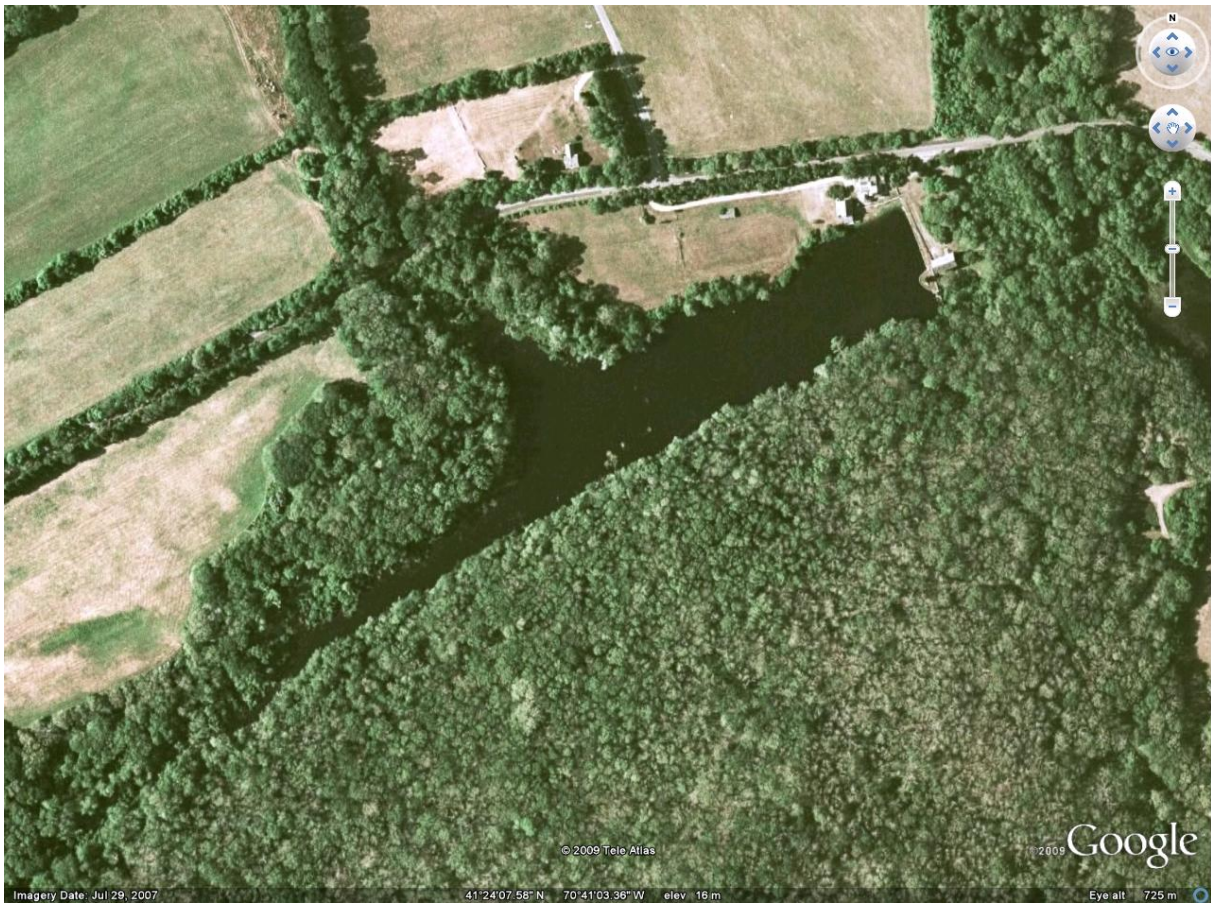
There are no recommendations to improve the overall condition of the dam

3.6 Opinion of Probable Construction Costs

There is no construction recommended

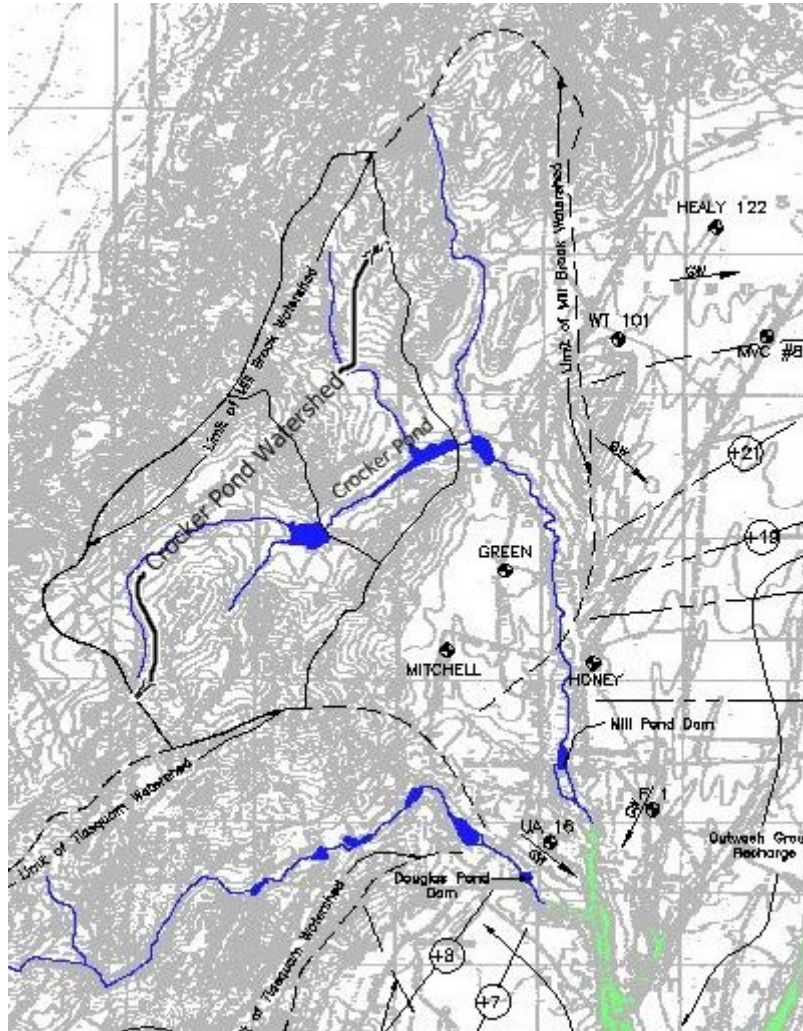
FIGURES

FIGURE 1



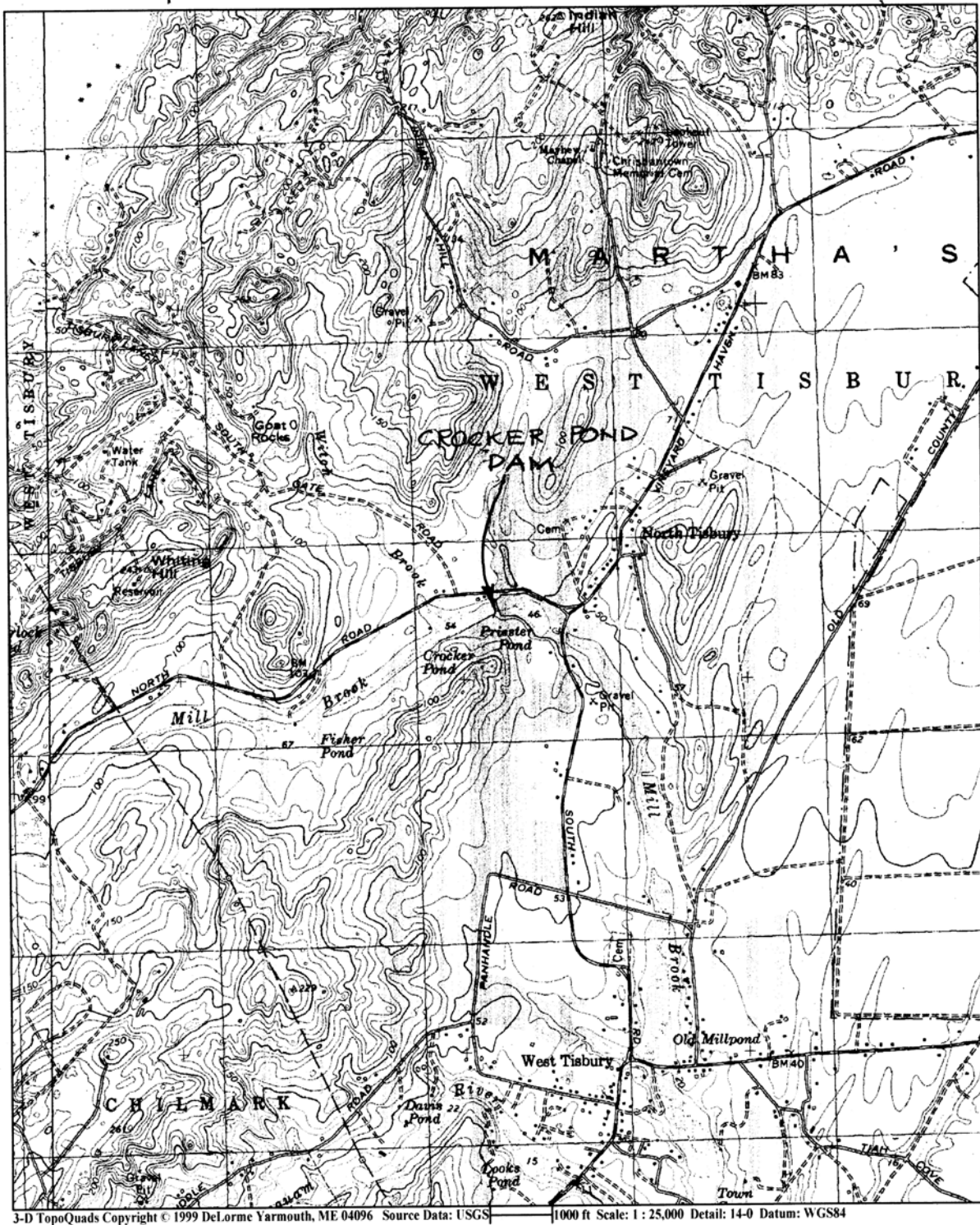
Aerial View of Crocker Pond

FIGURE 2



CROCKER POND WATERSHED

FIGURE 3



VINEYARD HAVEN QUADRANGLE

FIGURE 4

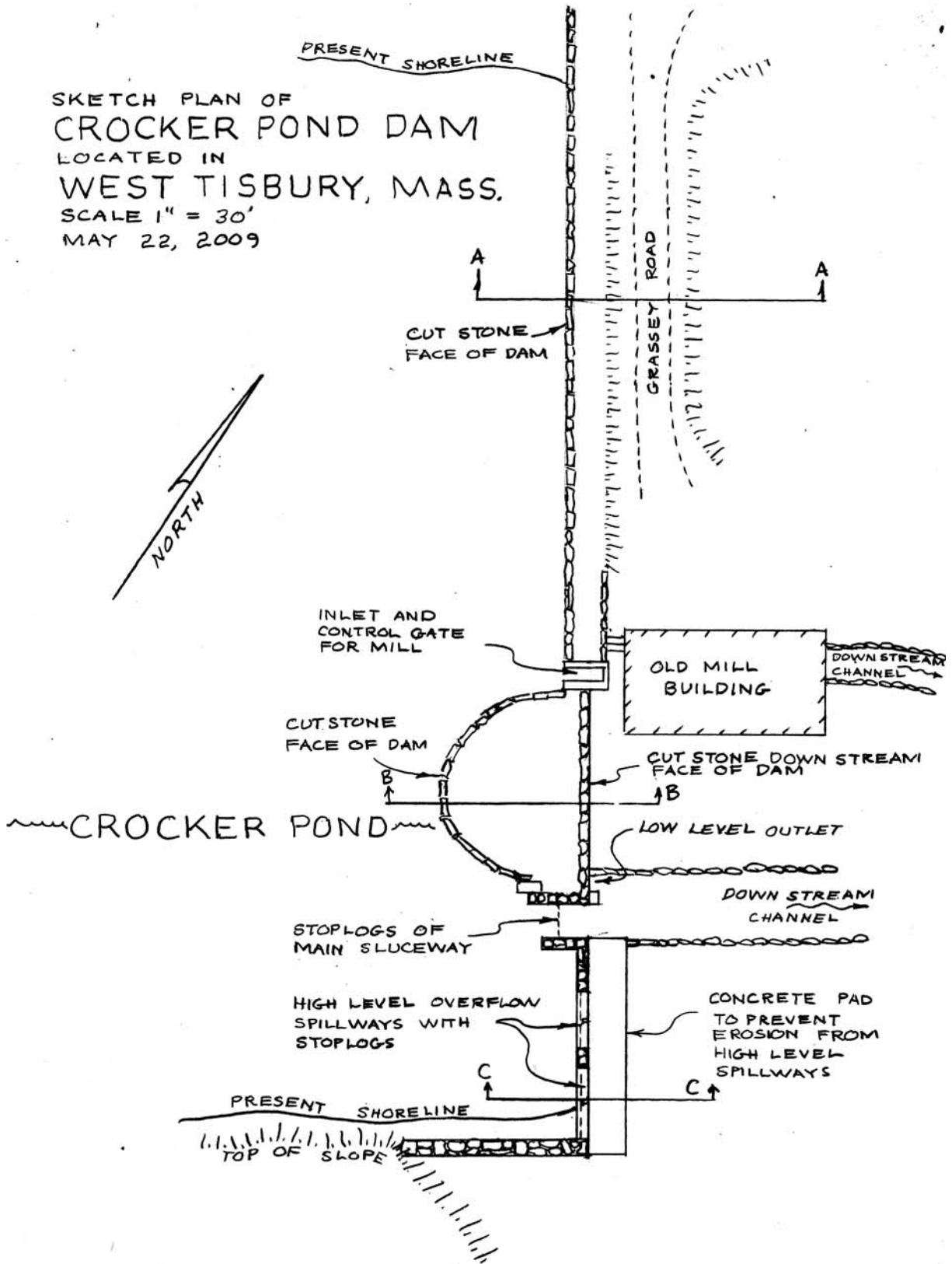
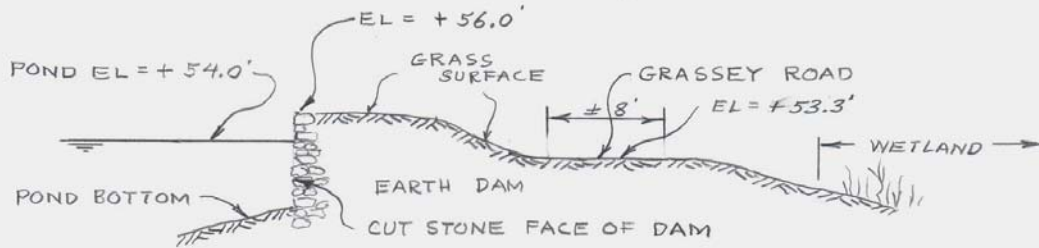
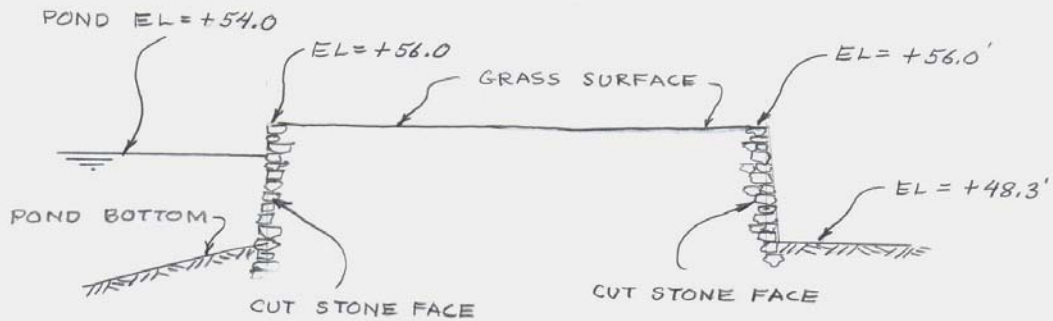


FIGURE 5

CROSS SECTIONS CROCKER POND DAM



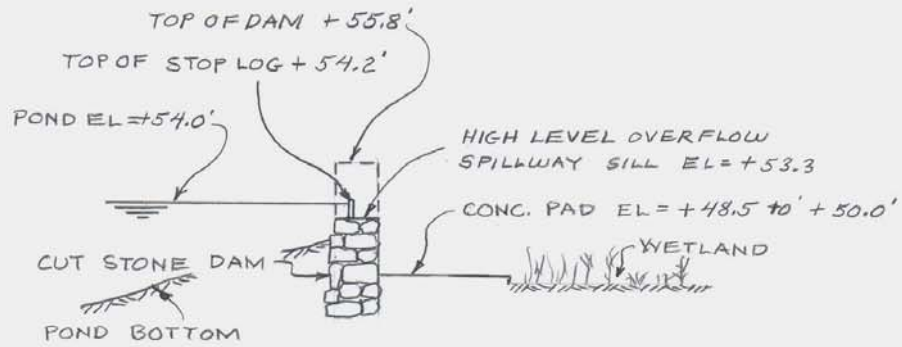
SECTION A-A
SCALE 1" = 10'



SECTION B-B
SCALE 1" = 10'

FIGURE 6

CROSS SECTIONS CROCKER POND DAM



SECTION C-C
SCALE 1" = 10'

FIGURE 7

CROSS SECTION
CROCKER POND DAM
MAIN SLUICeway

SCALE 1" = 10'

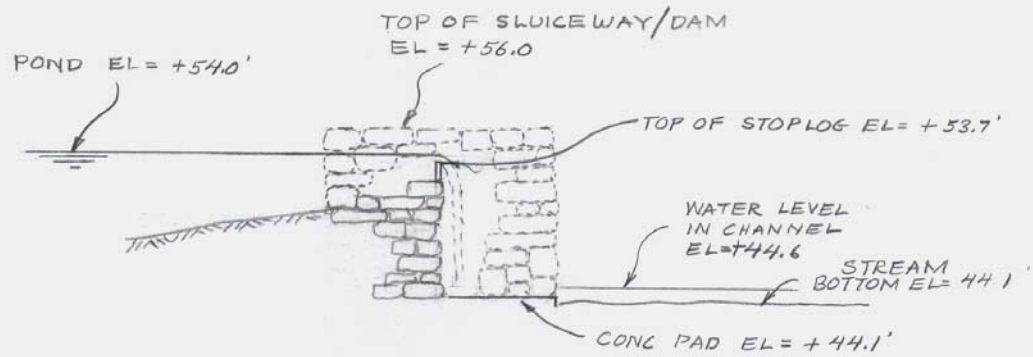
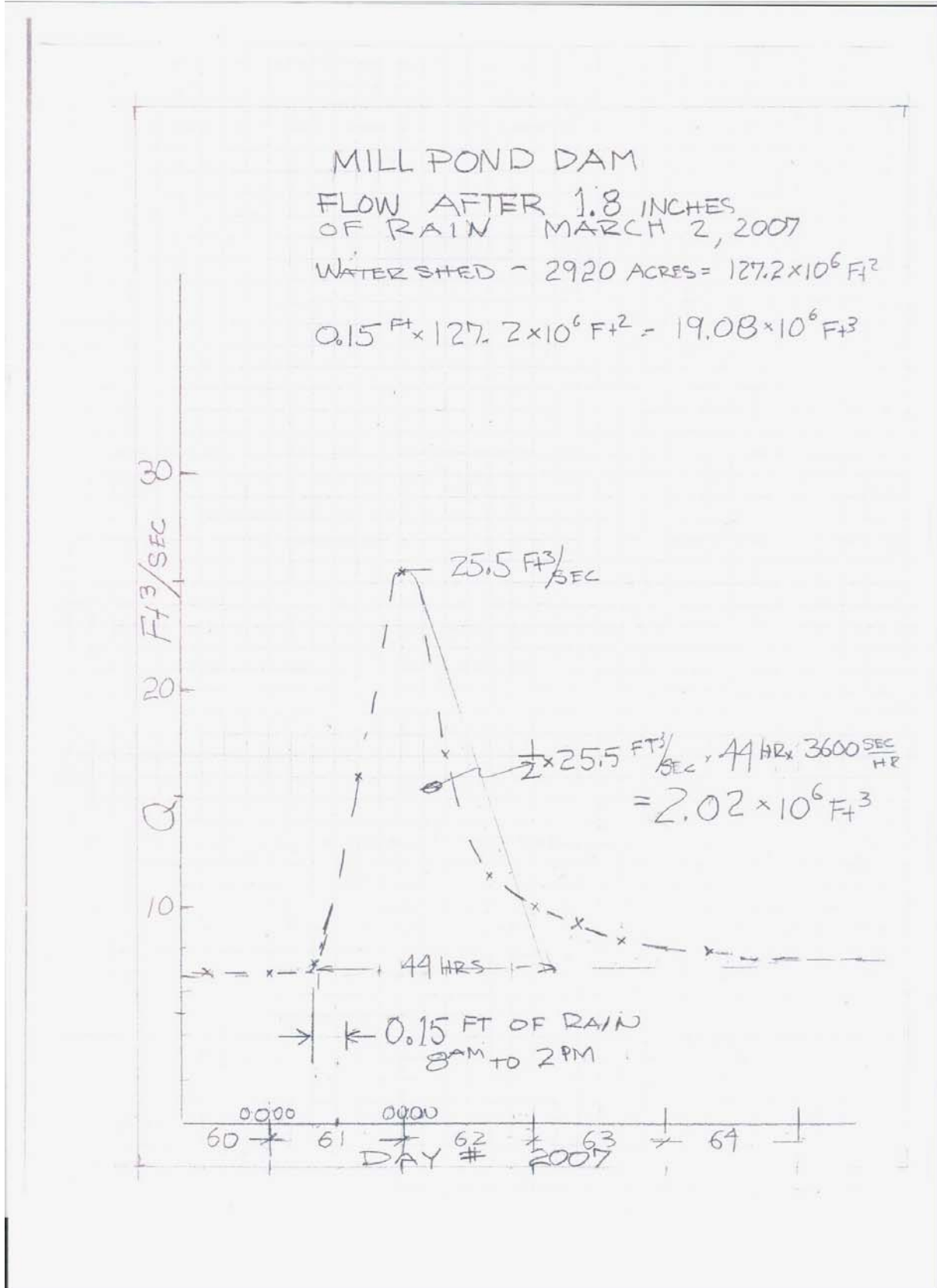


FIGURE 8



APPENDIX A
Photographs



Dam from Upstream



Overview from Downstream



Upstream face from the Right



Upstream face from left 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



Overview of right training wall



Overview of left training wall



Overview of weir



Overview of stilling basin



Overview of downstream channel



Overview of Reservoir

APPENDIX B
Previous Reports and References

PREVIOUS REPORTS AND REFERENCES

The following is a list of reports that were located during the file review, or were referenced in previous reports.

Notice of Inspection
By: R. David Clark
Office of Dam Safety
Jan. 10, 2002

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
November 6, 2006 – November 22, 2006

APPENDIX C
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)

Dam Evaluation Summary Detail Sheet

1. NID ID:	MA 01011	4. Inspection Date:	May 22, 2009
2. Dam Name:	CROCKER POND DAM	5. Last Insp. Date:	April 23, 2008
3. Dam Location:	W. Tisbury, MA	6. Next Inspection:	May 22, 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:	GOOD
12. Spillway Capacity (% SDF)	270 CU FT / SEC		
E1. Design Methodology:	1	E7. Low-Level Discharge Capacity:	3
E2. Level of Maintenance:	3	E8. Low-Level Outlet Physical Condition:	2
E3. Emergency Action Plan:	2	E9. Spillway Design Flood Capacity:	5
E4. Embankment Seepage:	5	E10. Overall Physical Condition of the Dam:	5
E5. Embankment Condition:	3	E11. Estimated Repair Cost:	\$18,000
E6. Concrete Condition:	5		

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 01011
Dam Name	CROCKER POND DAM
Dam Name (Alternate)	0
River Name	MILL BROOK / STREAM
Impoundment Name	CROCKER POND DAM
Hazard Class	LOW HAZARD
Size Class	SMALL
Dam Type	EARTH EMBANKMENT AND GRANIT STONE
Dam Purpose	HISTORIC MILL
Structural Height of Dam (feet)	12
Hydraulic Height of Dam (feet)	10
Drainage Area (sq. mi.)	2.2
Reservoir Surface Area (sq. mi.)	0.01
Normal Impoundment Volume (acre-feet)	30.6
Max Impoundment Volume ((top of dam) acre-feet)	45.9
SDF Impoundment Volume* (acre-feet)	
Spillway Type	BROAD CRESTED STONE WIER
Spillway Length (feet)	8' + 12'
Freeboard at Normal Pool (feet)	5
Principal Spillway Capacity* (cfs)	165
Auxiliary Spillway Capacity* (cfs)	105
Low-Level Outlet Capacity* (cfs)	95
Spillway Design Flood* (flow rate - cfs)	100 YR / 130 CFS
Winter Drawdown (feet below normal pool)	
Drawdown Impoundment Vol. (acre-feet)	
Latitude	N 41° 24' 12"
Longitude	W 70° 40' 54"
City/Town	W. Tisbury
County Name	Dukes
Public Road on Crest	none
Public Bridge over Spillway	none
EAP Date (if applicable)	0
Owner Name	SEVEN GATES FARM
Owner Address	10 TISBURY LANE
Owner Town	WEST TISBURY, MA 02575
Owner Phone	508-693-0016
Owner Emergency Phone	508-693-0016
Owner Type	PRIVATE
Caretaker Name	CHARLIE PACHICO
Caretaker Address	C/O SEVEN GATES FARM CORP.
Caretaker Town	WEST TISBURY, MA 02575
Caretaker Phone	508-693-0016
Caretaker Emergency Phone	508-693-0016
Date of Field Inspection	5/22/2009
Consultant Firm Name	Kent A. Healy
Inspecting Engineer	Kent A. Healy
Engineer Phone Number	509-693-6736

*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 CROCKER POND DAM
NID ID # MA 01011

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 | Trees and brush within 10 feet of the downstream face should be cut and the roots left in place. |
| 2 | The downstream edge of the concrete apron at the base of the high level over flow spillway should be reinforced with 1' diameter rocks placed on a gravel bed to prevent further undermining. |
| 3 | The trees near the masonry walls lining the down stream channel should also be cut leaving the stumps in place. |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |

9
10
11
12

DAM SAFETY INSPECTION CHECKLIST

NAME OF DAM: <u>CROCKER POND DAM</u>	STATE ID #: <u>7-4-327-4</u>
REGISTERED: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	NID ID #: <u>MA 01011</u>
STATE SIZE CLASSIFICATION: <u>SMALL</u>	STATE HAZARD CLASSIFICATION: <u>LOW</u>
	CHANGE IN HAZARD CLASSIFICATION REQUESTED?: <u>NO</u>
<u><i>DAM LOCATION INFORMATION</i></u>	
CITY/TOWN: <u>W. Tisbury</u>	COUNTY: <u>Dukes</u>
DAM LOCATION: <u>NORTH TISBURY</u> (street address if known)	ALTERNATE DAM NAME: _____
USGS QUAD.: <u>VINEYARD HAVEN QUADRANGLE</u>	LAT.: <u>N 41° 24' 12"</u> LONG.: <u>W 70° 40' 54"</u>
DRAINAGE BASIN: _____	RIVER: <u>MILL BROOK</u>
IMPOUNDMENT NAME(S): <u>CROCKER POND</u>	
<u><i>GENERAL DAM INFORMATION</i></u>	
TYPE OF DAM: <u>EARTH EMBANKMENT AND GRANIT STONE</u>	OVERALL LENGTH (FT): <u>270</u>
PURPOSE OF DAM: <u>HISTORIC MILL</u>	NORMAL POOL STORAGE (ACRE-FT): <u>30.6</u>
YEAR BUILT: <u>1858 - 1860</u>	MAXIMUM POOL STORAGE (ACRE-FT): <u>45.9</u>
STRUCTURAL HEIGHT (FT): <u>12</u>	EL. NORMAL POOL (FT): <u>54.0</u>
HYDRAULIC HEIGHT (FT): <u>10</u>	EL. MAXIMUM POOL (FT): <u>56.0</u>
<u><i>FOR INTERNAL MADCR USE ONLY</i></u>	
FOLLOW-UP INSPECTION REQUIRED: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	CONDITIONAL LETTER: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

NAME OF DAM: <u>CROCKER POND DAM</u>		STATE ID #: <u>7-4-327-4</u>	
INSPECTION DATE: <u>May 22, 2009</u>		NID ID #: <u>MA 01011</u>	
<u><i>INSPECTION SUMMARY</i></u>			
DATE OF INSPECTION: <u>May 22, 2009</u>		DATE OF PREVIOUS INSPECTION: <u>April 23, 2008</u>	
TEMPERATURE/WEATHER: <u>FAIR</u>		ARMY CORPS PHASE I: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO If YES, date _____	
CONSULTANT: <u>Kent A. Healy</u>		PREVIOUS DCR PHASE I: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO If YES, date _____	
BENCHMARK/DATUM: <u>USGS QUADRANGLE</u>			
OVERALL PHYSICAL CONDITION OF DAM: <u>GOOD</u>		DATE OF LAST REHABILITATION: _____	
SPILLWAY CAPACITY: <u>270 CU FT / SEC</u>			
EL. POOL DURING INSP.: <u>54</u>		EL. TAILWATER DURING INSP.: <u>44.6</u>	
<u><i>PERSONS PRESENT AT INSPECTION</i></u>			
<u>NAME</u>	<u>TITLE/POSITION</u>	<u>REPRESENTING</u>	
KENT A. HEALY	P.E.	KENT A. HEALY	
WILLIAM AUSTIN	P.L.S.	KENT A. HEALY	
<u><i>EVALUATION INFORMATION</i></u>			
<div style="display: flex; justify-content: space-between;"> <div> E1) TYPE OF DESIGN E2) LEVEL OF MAINTENANCE E3) EMERGENCY ACTION PLAN E4) EMBANKMENT SEEPAGE E5) EMBANKMENT CONDITION E6) CONCRETE CONDITION E7) LOW-LEVEL OUTLET CAPACITY </div> <div> Click on box to select E-code <div style="border: 1px solid black; padding: 2px;">1</div> <div style="border: 1px solid black; padding: 2px;">3</div> <div style="border: 1px solid black; padding: 2px;">2</div> <div style="border: 1px solid black; padding: 2px;">5</div> <div style="border: 1px solid black; padding: 2px;">3</div> <div style="border: 1px solid black; padding: 2px;">5</div> <div style="border: 1px solid black; padding: 2px;">3</div> </div> </div>		<div style="display: flex; justify-content: space-between;"> <div> E8) LOW-LEVEL OUTLET CONDITION E9) SPILLWAY DESIGN FLOOD CAPACITY E10) OVERALL PHYSICAL CONDITION E11) ESTIMATED REPAIR COST ROADWAY OVER CREST BRIDGE NEAR DAM </div> <div> Click on box to select E-code <div style="border: 1px solid black; padding: 2px;">2</div> <div style="border: 1px solid black; padding: 2px;">5</div> <div style="border: 1px solid black; padding: 2px;">5</div> <div style="border: 1px solid black; padding: 2px;">\$18,000</div> <div style="border: 1px solid black; padding: 2px;">NO</div> <div style="border: 1px solid black; padding: 2px;">NO</div> </div> </div>	
NAME OF INSPECTING ENGINEER: Kent A. Healy		SIGNATURE: _____	

NAME OF DAM: <u>CROCKER POND DAM</u>		STATE ID #: <u>7-4-327-4</u>	
INSPECTION DATE: <u>May 22, 2009</u>		NID ID #: <u>MA 01011</u>	
OWNER: ORGANIZATION NAME/TITLE <u>SEVEN GATES FARM CORP.</u> STREET <u>10 TISBURY LANE</u> TOWN, STATE, ZIP <u>WEST TISBURY, MA 02575</u> PHONE <u>508-693-0016</u> EMERGENCY PH. # _____ FAX _____ EMAIL _____ OWNER TYPE <u>PRIVATE</u>		CARETAKER: ORGANIZATION NAME/TITLE <u>SEVEN GATES FARM CORP.</u> STREET <u>CHARLIE PACHICO</u> STREET <u>C/O SEVEN GATES FARM CORP.</u> TOWN, STATE, ZIP <u>WEST TISBURY, MA 02575</u> PHONE <u>508-693-0016</u> EMERGENCY PH. # _____ FAX _____ EMAIL _____	
PRIMARY SPILLWAY TYPE <u>BROAD CRESTED STONE WIER</u>			
SPILLWAY LENGTH (FT) <u>8' + 12'</u>		SPILLWAY CAPACITY (CFS) <u>165</u>	
AUXILIARY SPILLWAY TYPE _____ 19		AUX. SPILLWAY CAPACITY (CFS) <u>105</u>	
NUMBER OF OUTLETS <u>1</u>		OUTLET(S) CAPACITY (CFS) <u>95</u>	
TYPE OF OUTLETS _____ 1		TOTAL DISCHARGE CAPACITY (CFS) <u>270</u>	
DRAINAGE AREA (SQ MI) <u>2.2</u>		SPILLWAY DESIGN FLOOD (PERIOD/CFS) <u>100 YR / 130 CFS</u>	
HAS DAM BEEN BREACHED OR OVERTOPPED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PROVIDE DATE(S) _____			
FISH LADDER (LIST TYPE IF PRESENT) _____			
DOES CREST SUPPORT PUBLIC ROAD? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, ROAD NAME: _____			
PUBLIC BRIDGE WITHIN 50' OF DAM? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, ROAD/BRIDGE NAME: _____			
MHD BRIDGE NO. (IF APPLICABLE) _____			

NAME OF DAM: <u>CROCKER POND DAM</u>		STATE ID #: <u>7-4-327-4</u>			
INSPECTION DATE: <u>May 22, 2009</u>		NID ID #: <u>MA 01011</u>			
EMBANKMENT (CREST)					
AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
CREST	1. SURFACE TYPE	GRASS IN GOOD CONDITION	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: CROCKER POND DAM

STATE ID #: 7-4-327-4

INSPECTION DATE: May 22, 2009

NID ID #: MA 01011

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)	BRUSH ALONG DOWNSTREAM FACE TO BE CUT	X		

ADDITIONAL COMMENTS: _____

NAME OF DAM: <u>CROCKER POND DAM</u>		STATE ID #: <u>7-4-327-4</u>			
INSPECTION DATE: <u>May 22, 2009</u>		NID ID #: <u>MA 01011</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)	KEEP MOWED	X		
ADDITIONAL COMMENTS: _____ _____ _____ _____ _____ _____ _____ _____					

NAME OF DAM: <u>CROCKER POND DAM</u>		STATE ID #: <u>7-4-327-4</u>			
INSPECTION DATE: <u>May 22, 2009</u>		NID ID #: <u>MA 01011</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: _____ _____ _____ _____ _____					

NAME OF DAM: <u>CROCKER POND DAM</u>		STATE ID #: <u>7-4-327-4</u>			
INSPECTION DATE: <u>May 22, 2009</u>		NID ID #: <u>MA 01011</u>			
DOWNSTREAM MASONRY WALLS					
AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
D/S WALLS	1. WALL TYPE	CUT STONE MASONRY WALLS			
	2. WALL ALIGNMENT		X		
	3. WALL CONDITION		X		
	4. HEIGHT: TOP OF WALL TO MUDLINE	min: 2 max: 8 avg:			
	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: _____ _____ _____ _____ _____					

NAME OF DAM: <u>CROCKER POND DAM</u>		STATE ID #: <u>7-4-327-4</u>			
INSPECTION DATE: <u>X</u>		NID ID #: <u>MA 01011</u>			
UPSTREAM MASONRY WALLS					
AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
U/S WALLS	1. WALL TYPE	CUT STONE	X		
	2. WALL ALIGNMENT		X		
	3. WALL CONDITION		X		
	4. HEIGHT: TOP OF WALL TO MUDLINE	min: 1 max: 4 avg:			
	5. ABUTMENT CONTACT		X		
	6. EROSION/SINKHOLES BEHIND WALL		X		
	7. ANIMAL BURROWS		X		
	8. UNUSUAL MOVEMENT		X		
ADDITIONAL COMMENTS: _____ _____ _____ _____ _____					

NAME OF DAM: <u>CROCKER POND DAM</u>		STATE ID #: <u>7-4-327-4</u>			
INSPECTION DATE: <u>May 22, 2009</u>		NID ID #: <u>MA 01011</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		X		
	8. ACCESSIBILITY		X		
	9. DOWNSTREAM HAZARD DESCRIPTION				
10. DATE OF LAST EAP UPDATE		0			
ADDITIONAL COMMENTS: _____ _____ _____ _____ _____					

NAME OF DAM: CROCKER POND DAMSTATE ID #: 7-4-327-4INSPECTION DATE: May 22, 2009NID ID #: MA 01011**MISCELLANEOUS**

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

ADDITIONAL COMMENTS: _____

NAME OF DAM: <u>CROCKER POND DAM</u>		STATE ID #: <u>7-4-327-4</u>			
INSPECTION DATE: <u>May 22, 2009</u>		NID ID #: <u>MA 01011</u>			
PRIMARY SPILLWAY					
AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
SPILLWAY	SPILLWAY TYPE	BROAD CRESTED WIER	X		
	WEIR TYPE		X		
	SPILLWAY CONDITION	GOOD	X		
	TRAINING WALLS	CUT STONE	X		
	SPILLWAY CONTROLS AND CONDITION		X		
	UNUSUAL MOVEMENT		X		
	APPROACH AREA		X		
	DISCHARGE AREA		X		
	DEBRIS		X		
	WATER LEVEL AT TIME OF INSPECTION	54	X		
ADDITIONAL COMMENTS: _____ _____ _____ _____ _____					

NAME OF DAM: <u>CROCKER POND DAM</u>		STATE ID #: <u>7-4-327-4</u>			
INSPECTION DATE: <u>May 22, 2009</u>		NID ID #: <u>MA 01011</u>			
AUXILIARY SPILLWAY					
AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
SPILLWAY	SPILLWAY TYPE	BROAD CRESTED STONE	X		
	WEIR TYPE		X		
	SPILLWAY CONDITION		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	54	X		
ADDITIONAL COMMENTS: _____ _____ _____ _____ _____					

NAME OF DAM: <u>CROCKER POND DAM</u>		STATE ID #: <u>7-4-327-4</u>			
INSPECTION DATE: <u>May 22, 2009</u>		NID ID #: <u>MA 01011</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>CROCKER POND DAM</u>		STATE ID #: <u>7-4-327-4</u>			
INSPECTION DATE: <u>May 22, 2009</u>		NID ID #: <u>MA 01011</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: _____ _____ _____ _____ _____					

NAME OF DAM: <u>CROCKER POND DAM</u>		STATE ID #: <u>7-4-327-4</u>			
INSPECTION DATE: <u>May 22, 2009</u>		NID ID #: <u>MA 01011</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>CROCKER POND DAM</u>		STATE ID #: <u>7-4-327-4</u>			
INSPECTION DATE: <u>May 22, 2009</u>		NID ID #: <u>MA 01011</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>CROCKER POND DAM</u>		STATE ID #: <u>7-4-327-4</u>			
INSPECTION DATE: <u>May 22, 2009</u>		NID ID #: <u>MA 01011</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: _____ _____ _____ _____ _____					