



August 9, 2019

Willow Lake Association
c/o/ Martin Oakes
2100 Oriole Drive
Freeport, Illinois 61032

Re: 2019 Willow Lake Dam Inspection Report
WHA No. 1152R19


Dear Martin and Association Members:

Attached please find a pdf copy of the above report, with photos and the survey monumentation drawing. Per our meeting on site with Paul Mauer, and electronic copy should be forwarded to the Illinois Department of Natural Resources, indicating your acceptance of the report.

Please let us know if there are any questions, or if anything further is needed.

Sincerely,

WILLETT, HOFMANN & ASSOCIATES, INC.

By 
Michael R. Leslie, P.E., S.E.
Vice President
Moline Office Manager

MRL:er
Encl.
cc: file

Willow Lake Dam
Dam Inventory No. 01205
Permit Number DS2001048
Class 1 (Small)

ANNUAL DAM INSPECTION REPORT

FOR

WILLOW LAKE ASSOCIATION
FREEPORT, IL

AUGUST 2019



WILLETT HOFMANN
& ASSOCIATES INC
ENGINEERING ARCHITECTURE LAND SURVEYING

1515 FIFTH AVENUE, SUITE 102, MOLINE, IL 61265
T: 309-517-1119 DESIGN FIRM: # 184-000918

Michael R. Leslie, P.E., S.E.
Illinois Licensed Structural Engineer
License No. 081-005726
Expires: 11/30/2020
WHA # 1152M19



DATE: 8-9-19
EXPIRES 11/30/20

Dam Inspection Report

Name of Dam Willow Lake Dam Dam ID No. Inventory No. 01205

Permit Number DS2001048 Class of Dam Class I (Small)

Location SE 1/4 Section 13 Township 27 N Range 7 E

Owner Willow Lake Association (815) 235-9131 (Martin Oakes)
Name Telephone Number (Day)

P.O. Box 861 Same
Street Telephone Number (Night)

Freeport 61032 County Stephenson
City Zip Code

Type of Dam Earthen Fill

Type of Spillway Drop Inlet (primary) Concrete Chute (emergency)

Date(s) Inspected 8/2/2019

Weather When Inspected Sunny

Temperature When Inspected 74°

Pool Elevation When Inspected 796.2

Tailwater Elevation When Inspected None

Inspection Personnel:

Michael R. Leslie, P.E., S.E. Moline Office Manager

Willett, Hofmann & Associates, Inc. Vice President

Name Title

Name Title

Professional Engineer's Seal Name Title

CONDITION CODES

- NE - No evidence of a problem
- GC - Good condition
- MM - Item needing minor maintenance and/or repairs within the year, the safety or integrity of the item is not yet imperiled
- IM - Item needing immediate maintenance to restore or ensure its safety or integrity
- EC - Emergency condition which if not immediately repaired or other appropriate measures taken could lead to failure of the dam
- OB - Condition requires regular observation to ensure that the condition does not become worse
- NA - Not applicable to this dam
- NI - Not inspected - list the reason for non-inspection under deficiencies

EARTH EMBANKMENT

ITEM	CONDITION CODE	DEFICIENCIES	RECOMMENDED REMEDIAL MEASURES AND IMPLEMENTATION SCHEDULE
Surface Cracks	NE		
Vertical and Horizontal Alignment of Crest	NE	Control monumentation on the dam has been surveyed and there is no evidence of any movement - see attached survey report drawing.	
Unusual Movement or Cracking At or Beyond Toe	NE		
Sloughing or Erosion of Embankment and Abutment Slopes	NE		
Upstream Face Slope Protection	NE		
Seepage	NE		
Filter and Filter Drains	NE		

EARTH EMBANKMENT

(Continued)

ITEM	CONDITION CODE	DEFICIENCIES	RECOMMENDED REMEDIAL MEASURES AND IMPLEMENTATION SCHEDULE
Animal Damage	GC		Martin noted they found and treated crawfish holes earlier in year. Continue to monitor.
Embankment Drainage Ditches	NE		
Vegetative Cover	NE		
Other (Name)			
Other			
Other			
Other			

PRINCIPAL SPILLWAY
APPROACH CHANNEL

ITEM	CONDITION CODE	DEFICIENCIES	RECOMMENDED REMEDIAL MEASURES AND IMPLEMENTATION SCHEDULE
Debris	NE		
Side Slope Stability	NA		
Slope Protection	NE		
Other (Name)			
Other			
Other			
Other			

PRINCIPAL SPILLWAY

Drop Inlet Spillway

Overflow Spillway Structure

Gated

ITEM	CONDITION CODE	DEFICIENCIES	RECOMMENDED REMEDIAL MEASURES AND IMPLEMENTATION SCHEDULE
Erosion, Spalling, Cavitation	NE		
Structure to Embankment Junction	NE		
Drains	NA		
Seepage Around or Into Structure	NE		
Surface Cracks	NA		
Structural Cracks	NA		

IF THE SPILLWAY IS GATED FILL OUT THE GATES SECTION

PRINCIPAL SPILLWAY

(Continued)

Drop Inlet Spillway

Overflow Spillway Structure

Gated

ITEM	CONDITION CODE	DEFICIENCIES	RECOMMENDED REMEDIAL MEASURES AND IMPLEMENTATION SCHEDULE
Alignment of Abutment Walls	NA		
Construction Joints	NA		
Filter and Filter Drains	NA		
Trash Racks	NE		
Bridge and Piers	NA		
Differential Settlement	NE		
Other (Name)			

IF THE SPILLWAY IS GATED FILL OUT THE GATES SECTION

ENERGY DISSIPATOR

Principal Spillway

Type: Rock rip-rap at outlet of 18" CMP from drop inlet.

Outlet Works

ITEM	CONDITION CODE	DEFICIENCIES	RECOMMENDED REMEDIAL MEASURES AND IMPLEMENTATION SCHEDULE
Erosion, Spalling, Cavitation	NE		
Structure to Embankment Junction	NE		
Construction Joints	NA		
Surface Cracks	NA		
Structural Cracks	NA		
Differential Alignment	NE		
Expansion and Contraction Joints	NA		

ENERGY DISSIPATOR

(Continued)

Principal Spillway

Outlet Works

ITEM	CONDITION CODE	DEFICIENCIES	RECOMMENDED REMEDIAL MEASURES AND IMPLEMENTATION SCHEDULE
Riprap	NE		
Outlet Channel	NE		
Debris	NE		
Other (Name)			
Other			
Other			
Other			

EMERGENCY SPILLWAY

Earth

Other: Name Concrete Chute w/S.A.F. Dissipator

ITEM	CONDITION CODE	DEFICIENCIES	RECOMMENDED REMEDIAL MEASURES AND IMPLEMENTATION SCHEDULE
Erosion	NE		
Weeds, Logs, Other Obstructions	NE		
Side Slope Sloughing	NE		
Vegetation	NE		
Sedimentation	NE		
Riprap	NA		
Settlement of Crest	NE		
Downstream Channel	MM	Tall grass and small tree in outlet channel. Tree should be removed.	Remove Tree
Other	MM	Minor leak in joint between energy dissipator and main chute wall - west wall.	Note: Weeps also active No Issues on East
Other	MM	Active seepage continues at slab joint between chute and dissipator - All from natural spring	

SUMMARY OF MAINTENANCE DONE AND/OR
REPAIRS MADE SINCE THE LAST INSPECTION

DATE OF PRESENT INSPECTION August 2, 2019

DATE OF LAST INSPECTION August 17, 2018

1. EARTH EMBANKMENT DAMS

Routine mowing and animal hole treatment to deter return.

2. CONCRETE MASONRY DAMS

NA

3. PRINCIPAL SPILLWAY

NA

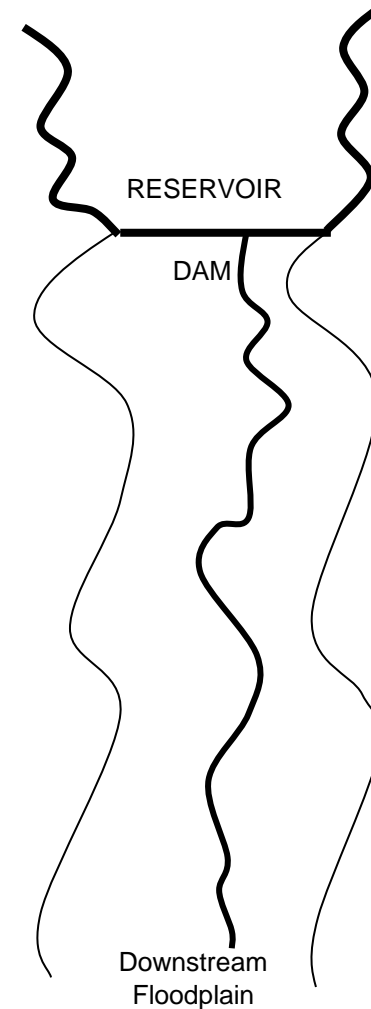
4. OUTLET WORKS

NA

5. EMERGENCY SPILLWAY

DOWNSTREAM DEVELOPMENT
APPROXIMATE WIDTH OF AFFECTED FLOODPLAIN _____ MILES

MILES DOWNSTREAM FROM DAM	DOWNSTREAM DEVELOPMENT										Loss of Life Potential			Economic Loss Potential			SKETCH IN DEVELOPMENTS DOWNSTREAM OF THE DAM			
	OCCUPIED HOMES	UNOCCUPIED HOMES	AGRICULTURAL BUILDINGS	INDUSTRIAL BUILDINGS	COMMERCIAL BUILDINGS	SCHOOLS	HOSPITALS	ROADS & BRIDGES	DAMS	OVERHEAD UTILITIES	OTHER DEVELOPMENT (Name)	OTHER DEVELOPMENT (Name)	NONE	1 TO 10	OVER 10	MINIMAL EXPECTED		APPRECIABLE EXPECTED	EXCESSIVE EXPECTED	
0 to 1/4	3		3					1		1										
1/4 to 1/2																				
1/2 to 3/4								1		1										
3/4 to 1	PECATONICA RIVER +/- 7/8 MILES DOWNSTREAM																			
1 to 1-1/4																				
1-1/4 to 1-1/2																				
1-1/2 to 1-3/4																				
1-3/4 to 2																				
OVER 2																				



The number of homes, buildings, or other items in the floodplain downstream of the dam should be placed in the appropriate row and column to designate their location.

Owner's Maintenance Statement

I, Willow Lake Association, owner of Willow Lake dam,
Dam Identification Number Inv. No. 01205, in Stephenson County,
am maintaining the dam in accordance with the accepted maintenance plan which is part of
Permit Number DS2001048.



Signature

Date

Owner's Operation and Maintenance Plan Statement

I, Willow Lake Association, owner of Willow Lake dam,
Dam Identification Number No. 01205, in Stephenson County,
have reviewed the operation and maintenance plan including the Emergency Action Plan (EAP),
which is part of, Permit Number DS2001048.

I have enclosed the appropriate revisions or

 x have determined that no revisions to the plan are necessary.

 Signature

Date



Photo #1 – West emergency spillway wall. Good condition.



Photo #2 – East emergency spillway wall. Repaired joint, good condition.



Photo #3 – Inlet side of emergency spillway. Good condition.



Photo #4 – Downstream end of emergency spillway. Good Condition.



Photo #5 – Emergency spillway energy dissipator. Minor seepage from spring at slab joint.



Photo #6 – Minor seepage from spring at bottom of wall joint and active weep holes.



Photo #7 – Principal spillway. Good condition.



Photo #8 – Principal spillway outlet and channel.



Photo #9 – Principal spillway outlet pipe.

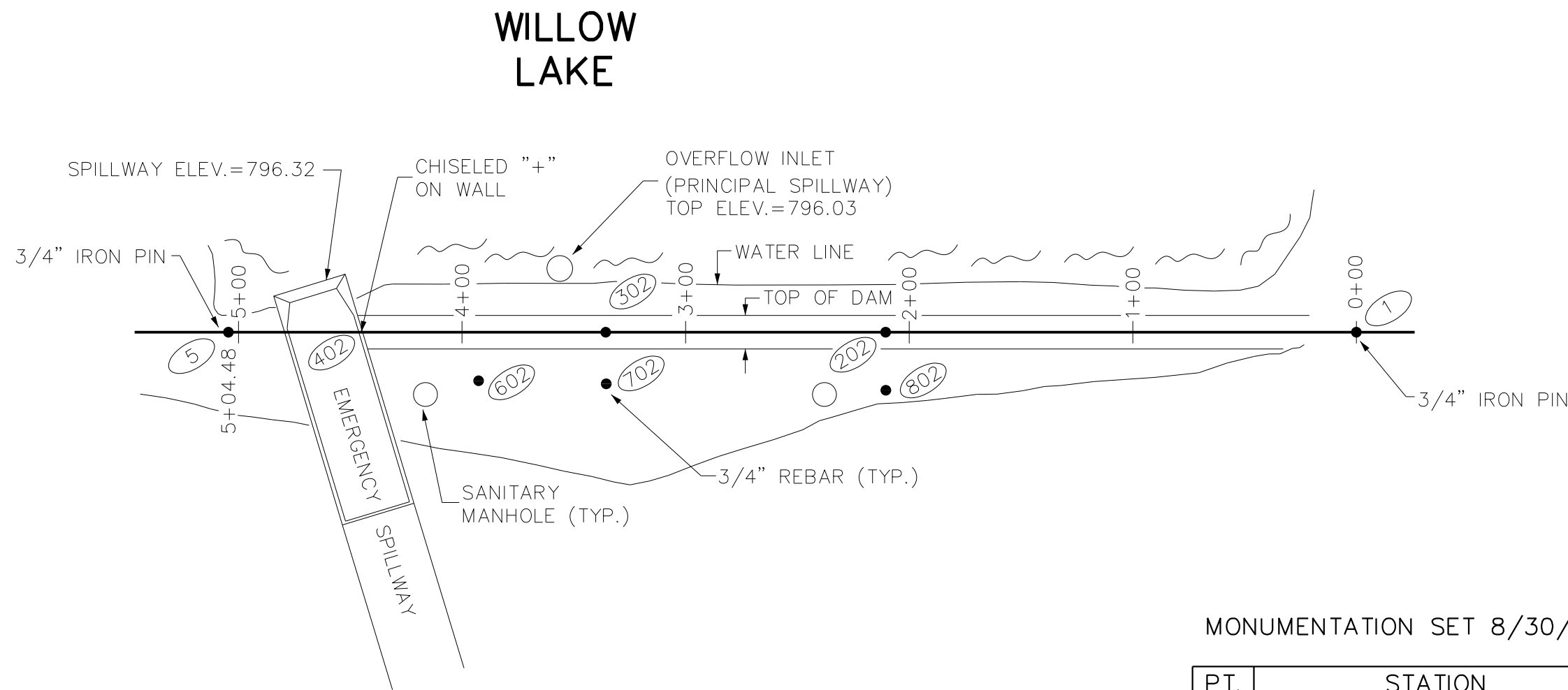


Photo #10 – Dam looking east. Good condition.



Photo #11 – Dam looking west. Good condition.

WILLOW LAKE DAM CONTROL MONUMENTATION – SKETCH



MONUMENTATION SET 8/30/93

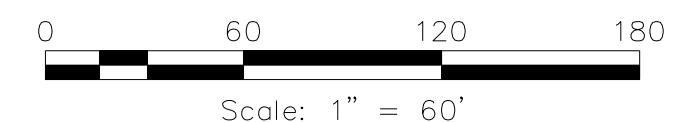
PT. NO.	STATION		
	STATION	OFFSET	ELEVATION
202	2+10.52	0.02 R	800.80
302	3+35.72	0.00 R	800.43
402	4+45.10	0.00 R	801.42
602	3+92.52	21.71 L	794.31
702	3+35.51	23.11 L	794.65
802	2+10.43	25.98 L	795.02

LEGEND
00 POINT NUMBER

1997 DATA:	FIELD MEASURED	10/3/97
1998 DATA:	FIELD MEASURED	09/29/98
1999 DATA:	FIELD MEASURED	08/16/99
2000 DATA:	FIELD MEASURED	11/8/00
2001 DATA:	FIELD MEASURED	09/24/01
2002 DATA:	FIELD MEASURED	09/09/02
2003 DATA:	FIELD MEASURED	09/02/03
2004 DATA:	FIELD MEASURED	10/08/04
2005 DATA:	FIELD MEASURED	08/19/05
2006 DATA:	FIELD MEASURED	08/29/06
2007 DATA:	FIELD MEASURED	08/20/07
2008 DATA:	FIELD MEASURED	09/22/08
2009 DATA:	FIELD MEASURED	09/14/09
2010 DATA:	FIELD MEASURED	09/15/10
2011 DATA:	FIELD MEASURED	07/27/11
2012 DATA:	FIELD MEASURED	08/14/12
2013 DATA:	FIELD MEASURED	07/31/13
2014 DATA:	FIELD MEASURED	08/04/14
2015 DATA:	FIELD MEASURED	08/25/15
2016 DATA:	FIELD MEASURED	08/17/16
2017 DATA:	FIELD MEASURED	08/02/17
2018 DATA:	FIELD MEASURED	08/03/18
2019 DATA:	FIELD MEASURED	07/17/19

NOTES:

ALL MONUMENTS ARE 3/4" x 4' REBAR SET 6" DEEP EXCEPT PT. 402 WHICH IS A "+" IN TOP OF THE EAST WALL OF THE SPILLWAY
 BASELINE CONTROL POINTS ARE NO. 1 (STA. 0+00) AND NO. 5 (STA. 5+04.48)



WILLOW LAKE DAM CONTROL MONUMENTATION

PT. No.	STATION														
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
202	2+10.51	2+10.54	2+10.53	2+10.53	2+10.49	2+10.52	2+10.54	2+10.51	2+10.52	2+10.50	2+10.51	2+10.53	2+10.52	2+10.53	2+10.52
302	3+35.72	3+35.74	3+35.73	3+35.74	3+35.67	3+35.74	3+35.72	3+35.70	3+35.71	3+35.71	3+35.73	3+35.73	3+35.72	3+35.74	3+35.70
402	4+45.09	4+45.11	4+45.10	4+45.10	4+45.05	4+45.05	4+45.08	4+45.08	4+45.06	4+45.11	4+45.09	4+45.07	4+45.09	4+45.10	4+45.10
602	3+92.52	3+92.58	3+92.56	3+92.56	3+92.52	3+92.59	3+92.56	3+92.55	3+92.55	3+92.54	3+92.56	3+92.56	3+92.56	3+92.58	3+92.54
702	3+35.51	3+35.54	3+35.53	3+35.53	3+35.48	3+35.53	3+35.51	3+35.50	3+35.53	3+35.51	3+35.54	3+35.54	3+35.54	3+35.56	3+35.51
802	2+10.43	2+10.46	2+10.44	2+10.44	2+10.40	2+10.44	2+10.44	2+10.41	2+10.42	2+10.42	2+10.43	2+10.42	2+10.44	2+10.45	2+10.42

PT. No.	OFFSET														
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
202	0.00 L	0.02 R	0.01 R	0.01 L	0.01 L	0.02 L	0.00 L	0.01 L	0.01 R	0.00 R	0.03 L	0.01 L	0.01 L	0.01 L	0.02 L
302	0.01 L	0.04 L	0.04 L	0.04 L	0.07 L	0.07 L	0.05 L	0.04 L	0.03 L	0.05 L	0.05 L	0.04 L	0.05 L	0.05 L	0.07 L
402	0.00 L	0.04 R	0.05 L	0.00 R	0.05 R	0.05 L	0.03 L	0.03 L	0.02 L	0.04 L	0.01 L	0.01 L	0.02 L	0.02 L	0.01 R
602	21.74 L	21.75 L	21.76 L	21.76 L	21.79 L	21.79 L	21.79 L	21.76 L	21.75 L	21.76 L	21.78 L	21.76 L	21.78 L	21.78 L	21.80 L
702	23.13 L	23.15 L	23.18 L	23.17 L	23.20 L	23.21 L	23.20 L	23.18 L	23.17 L	23.20 L	23.21 L	23.21 L	23.22 L	23.21 L	23.23 L
802	26.00 L	26.02 L	26.01 L	26.02 L	26.03 L	26.08 L	26.04 L	26.01 L	26.01 L	26.03 L	26.03 L	26.01 L	26.04 L	26.03 L	26.05 L

PT. No.	ELEVATION														
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
202	800.84	800.85	800.84	800.84	800.84	800.83	800.83	800.83	800.82	800.83	800.84	800.84	800.84	800.84	800.82
302	800.44	800.45	800.44	800.43	800.44	800.42	800.43	800.43	800.42	800.41	800.42	800.42	800.42	800.42	800.41
402	801.43	801.44	801.43	801.43	801.43	801.43	801.43	801.43	801.42	801.43	801.43	801.42	801.42	801.42	801.40
602	794.34	794.35	794.35	794.34	794.34	794.33	794.33	794.34	794.33	794.33	794.33	794.33	794.32	794.32	794.31
702	794.66	794.67	794.66	794.65	794.65	794.64	794.64	794.64	794.63	794.62	794.63	794.62	794.62	794.62	794.61
802	795.06	795.07	795.06	795.06	795.06	795.04	795.05	795.05	795.04	795.04	795.05	795.04	795.05	795.04	795.03

	REV. No.	DATE	DESCRIPTION
	7	08-28-15	Added 2015 Data
	8	08-18-16	Added 2016 Data
	9	08-07-17	Added 2017 Data
	10	08-08-18	Added 2018 Data
	11	07-19-19	Added 2019 Data
DESIGNED			
DRAWN	J. Remner		
CHECKED			
WILLET HOFMANN & ASSOCIATES INC. ENGINEERING ARCHITECTURE LAND SURVEYING 809 EAST 2ND STREET, DIXON, IL 61021-0367 T: 815-284-3381 DESIGN FIRM: #184-000918			
WILLOW LAKE ASSOCIATION Stephenson County, Illinois ANNUAL DAM INSPECTION			
PROJECT			
1152M19			
DATE			
07-19-19			
SHEET NUMBER			
1			