INFLOW DESIGN FLOOD CONTROL SYSTEM PLAN

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INFLOW DESIGN FLOOD CONTROL SYSTEM PLAN

Possum Point Power Station CCR Surface Impoundments: Ponds ABC

Submitted To: Possum Point Power Station
19000 Possum Point Road
Dumfries, VA 22026

Submitted By: Golder Associates Inc.
2108 W. Laburnum Avenue, Suite 200
Richmond, VA 23227

April 2018

Project No. 16-62150

Golder Associates

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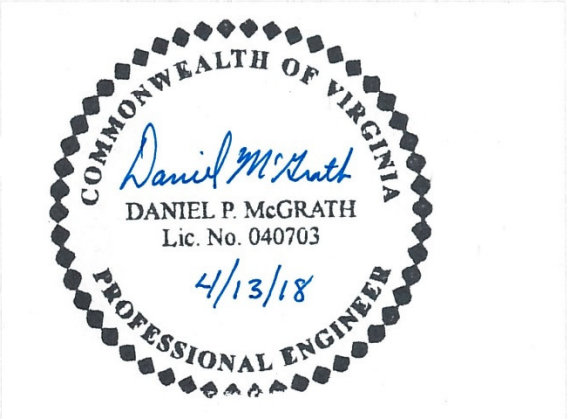
1.0 CERTIFICATION

This Inflow Design Flood Control System Plan for the Possum Point Power Station's Ponds ABC was prepared by Golder Associates Inc. (Golder). The document and Certification/Statement of Professional Opinion are based on and limited to information that Golder has relied on from Dominion and others, but not independently verified, as well as work products produced by Golder.

On the basis of and subject to the foregoing, it is my professional opinion as a Professional Engineer licensed in the Commonwealth of Virginia that this document has been prepared in accordance with good and accepted engineering practices as exercised by other engineers practicing in the same discipline(s), under similar circumstances, at the same time, and in the same locale. It is my professional opinion that the document was prepared consistent with the requirements in §257.73(c) of the United States Environmental Protection Agency's "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments," published in the Federal Register on April 17, 2015, with an effective date of October 19, 2015 [40 CFR §257.73(c)], as well as with the requirements in §257.100 resulting from the EPA's "Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals From Electric Utilities; Extension of Compliance Deadlines for Certain Inactive Surface Impoundments; Response to Partial Vacatur" published in the Federal Register on August 5, 2016 with an effective date of October 4, 2016 (40 CFR §257.100).

The use of the word "certification" and/or "certify" in this document shall be interpreted and construed as a Statement of Professional Opinion, and is not and shall not be interpreted or construed as a guarantee, warranty, or legal opinion.

Daniel McGrath	Associate and Senior Consultant
Print Name	Title
Daniel McGrath	4/13/18
Signature	Date



2.0 INTRODUCTION

This Inflow Design Flood Control System (FCS) Plan was prepared for the Possum Point Power Station's (Station) inactive Coal Combustion Residuals (CCR) surface impoundments, Ponds ABC. This FCS Plan was prepared in accordance with 40 CFR Part §257, Subpart D and is consistent with the requirements of 40 CFR §257.82.

Possum Point, owned and operated by Virginia Electric and Power Company d/b/a Dominion Energy Virginia (Dominion), is located in Dumfries, Virginia at 19000 Possum Point Road. The Station includes inactive CCR surface impoundments Ponds ABC as defined by the Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule (40 CFR §257; the CCR rule). In anticipation of closure, Ponds ABC are being excavated and the material placed in Pond D. This FCS Plan has been developed based on the existing Ponds ABC topography as of April 28, 2017.

3.0 INFLOW DESIGN FLOOD CONTROL SYSTEM PLAN

3.1 Hazard Potential Classification

As indicated in Golder's *Hazard Potential Classification Assessment*, Ponds ABC is assigned a "Significant" hazard potential rating per 40 CFR §257.73.

3.2 Inflow Design Flood

According to 40 CFR §257.82(a)(3)(ii), a hazard potential rating of Significant requires an evaluation of the ponds and appurtenances to handle a 1000-year storm event. Per the NOAA Atlas-14, provided in Appendix A, the 1000-year event rainfall total for the 24-hour duration is 13.6 inches.

3.3 Inflow and Outflow Control

Inflow to the ponds is primarily stormwater runoff from within the units (14.0 ac) and the adjacent area south of Possum Point Road (18.2 ac); however, approximately 8.4 acres from north of Possum Point Road also drain into the pond. The total drainage area to the ponds is approximately 40.6 acres. The majority of stormwater arrives through overland flow. Other than maintaining pre-established runoff control measures, there are no inflow control measures proposed.

The ponds' primary outlet for stormwater is a 4-ft by 4-ft square riser, fitted with stoplogs, that discharges through a 30-inch reinforced concrete pipe (RCP) into the adjacent Quantico Creek. This demonstration assumes that the permanent pool is maintained below the stoplog crest. The stage-storage curve for Ponds ABC was developed using the April 28, 2017 topography, and shows that Ponds ABC has approximately 117.5 acre-feet of available water storage volume at the embankment crest (approximately el. 20.0 ft).

The ponds' stormwater system was modeled in the U.S. Army Corps of Engineers Hydrologic Engineering Center's Hydraulic Modeling System (HEC-HMS), and the analysis is included in Appendix B. The analysis was conducted using the 24-hour, 1,000-year event, which was modeled as 13.6 inches of rain. Based on this analysis, the ponds' inflow design flood control system is capable of adequately managing the inflow from the 1,000-year event without overtopping the embankment.

The following table summarizes the results of the HEC-HMS analysis for the 1,000-year storm event.

Table 1: HEC-HMS Output

Q_{in} (CFS)	Max Hw (Ft El*)	Primary Q_{out} (CFS)
301.2	10.4	0.0

* Top of berm elevation = el. 20.0 ft

4.0 CONCLUSIONS

Through work performed by Golder, both field inspection and document review, it is our opinion that the Ponds ABC inflow design flood control system has sufficient capacity for the 1000-year storm event, as required by 40 CFR §257.82.

APPENDIX A – NOAA Atlas 14 Rainfall

NOAA Atlas 14, Volume 2, Version 3
Location name: Dumfries, Virginia, USA*
Latitude: 38.5466°, Longitude: -77.2872°
Elevation: 15.59 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.356** (0.322-0.393)	**0.427** (0.387-0.471)	**0.508** (0.459-0.560)	**0.567** (0.511-0.625)	**0.642** (0.575-0.708)	**0.698** (0.623-0.770)	**0.754** (0.669-0.833)	**0.808** (0.712-0.895)	**0.878** (0.765-0.977)	**0.933** (0.807-1.04)
10-min	**0.569** (0.515-0.628)	**0.683** (0.619-0.753)	**0.813** (0.736-0.897)	**0.907** (0.818-1.00)	**1.02** (0.917-1.13)	**1.11** (0.992-1.23)	**1.20** (1.06-1.32)	**1.28** (1.13-1.42)	**1.39** (1.21-1.55)	**1.47** (1.27-1.64)
15-min	**0.711** (0.644-0.784)	**0.859** (0.778-0.946)	**1.03** (0.931-1.14)	**1.15** (1.03-1.26)	**1.30** (1.16-1.43)	**1.41** (1.26-1.55)	**1.51** (1.34-1.67)	**1.62** (1.42-1.79)	**1.75** (1.52-1.95)	**1.84** (1.59-2.06)
30-min	**0.975** (0.882-1.08)	**1.19** (1.07-1.31)	**1.46** (1.32-1.61)	**1.66** (1.50-1.83)	**1.92** (1.72-2.12)	**2.12** (1.89-2.34)	**2.32** (2.06-2.56)	**2.52** (2.22-2.79)	**2.78** (2.42-3.10)	**2.99** (2.58-3.34)
60-min	**1.22** (1.10-1.34)	**1.49** (1.35-1.64)	**1.87** (1.70-2.07)	**2.17** (1.95-2.39)	**2.56** (2.29-2.82)	**2.87** (2.56-3.17)	**3.20** (2.83-3.53)	**3.53** (3.11-3.91)	**3.99** (3.48-4.44)	**4.36** (3.77-4.87)
2-hr	**1.42** (1.28-1.57)	**1.73** (1.56-1.91)	**2.19** (1.98-2.42)	**2.56** (2.29-2.82)	**3.06** (2.74-3.39)	**3.48** (3.09-3.85)	**3.92** (3.45-4.33)	**4.38** (3.83-4.85)	**5.03** (4.35-5.60)	**5.56** (4.76-6.22)
3-hr	**1.53** (1.38-1.71)	**1.86** (1.67-2.08)	**2.36** (2.12-2.64)	**2.76** (2.47-3.08)	**3.33** (2.95-3.70)	**3.79** (3.34-4.22)	**4.29** (3.75-4.77)	**4.81** (4.17-5.37)	**5.57** (4.76-6.24)	**6.19** (5.23-6.96)
6-hr	**1.88** (1.70-2.11)	**2.28** (2.05-2.56)	**2.88** (2.59-3.23)	**3.38** (3.01-3.77)	**4.10** (3.63-4.58)	**4.71** (4.14-5.26)	**5.38** (4.68-6.01)	**6.10** (5.25-6.83)	**7.15** (6.06-8.05)	**8.04** (6.72-9.09)
12-hr	**2.28** (2.04-2.57)	**2.76** (2.47-3.10)	**3.50** (3.12-3.94)	**4.13** (3.67-4.64)	**5.09** (4.48-5.71)	**5.92** (5.16-6.64)	**6.85** (5.90-7.69)	**7.88** (6.69-8.85)	**9.44** (7.86-10.7)	**10.8** (8.84-12.2)
24-hr	**2.57** (2.33-2.88)	**3.12** (2.83-3.49)	**4.03** (3.65-4.51)	**4.83** (4.36-5.39)	**6.05** (5.41-6.72)	**7.12** (6.33-7.88)	**8.33** (7.35-9.19)	**9.70** (8.48-10.7)	**11.8** (10.2-12.9)	**13.6** (11.6-14.9)
2-day	**2.98** (2.70-3.32)	**3.62** (3.28-4.03)	**4.67** (4.23-5.20)	**5.58** (5.03-6.20)	**6.95** (6.22-7.68)	**8.14** (7.25-8.98)	**9.47** (8.36-10.4)	**11.0** (9.59-12.1)	**13.2** (11.4-14.5)	**15.2** (12.9-16.7)
3-day	**3.16** (2.87-3.52)	**3.84** (3.48-4.27)	**4.94** (4.47-5.49)	**5.88** (5.31-6.53)	**7.30** (6.55-8.07)	**8.54** (7.62-9.41)	**9.91** (8.76-10.9)	**11.4** (10.0-12.6)	**13.7** (11.9-15.1)	**15.7** (13.5-17.3)
4-day	**3.35** (3.04-3.72)	**4.06** (3.68-4.51)	**5.21** (4.72-5.78)	**6.19** (5.60-6.86)	**7.66** (6.88-8.46)	**8.93** (7.98-9.85)	**10.3** (9.17-11.4)	**11.9** (10.5-13.1)	**14.3** (12.4-15.7)	**16.3** (14.0-17.9)
7-day	**3.89** (3.56-4.27)	**4.69** (4.30-5.16)	**5.94** (5.43-6.52)	**6.99** (6.38-7.67)	**8.57** (7.78-9.38)	**9.92** (8.95-10.8)	**11.4** (10.2-12.4)	**13.0** (11.6-14.2)	**15.5** (13.6-16.8)	**17.5** (15.2-19.1)
10-day	**4.46** (4.10-4.87)	**5.35** (4.92-5.85)	**6.68** (6.14-7.29)	**7.78** (7.13-8.48)	**9.37** (8.56-10.2)	**10.7** (9.74-11.6)	**12.1** (11.0-13.2)	**13.7** (12.3-14.9)	**15.9** (14.2-17.3)	**17.8** (15.7-19.3)
20-day	**6.00** (5.58-6.49)	**7.15** (6.64-7.72)	**8.64** (8.02-9.32)	**9.85** (9.14-10.6)	**11.5** (10.7-12.4)	**12.9** (11.9-13.9)	**14.3** (13.1-15.4)	**15.8** (14.4-17.0)	**17.8** (16.2-19.2)	**19.5** (17.5-21.0)
30-day	**7.37** (6.88-7.91)	**8.72** (8.15-9.36)	**10.4** (9.69-11.1)	**11.7** (10.9-12.5)	**13.5** (12.6-14.5)	**15.0** (13.9-16.0)	**16.4** (15.2-17.6)	**17.9** (16.5-19.2)	**20.0** (18.3-21.4)	**21.6** (19.6-23.1)
45-day	**9.27** (8.70-9.84)	**10.9** (10.3-11.6)	**12.8** (12.0-13.6)	**14.2** (13.4-15.1)	**16.1** (15.1-17.1)	**17.5** (16.4-18.6)	**18.9** (17.7-20.1)	**20.3** (18.9-21.6)	**22.1** (20.5-23.5)	**23.4** (21.6-24.9)
60-day	**11.0** (10.4-11.6)	**12.9** (12.2-13.7)	**15.0** (14.1-15.8)	**16.5** (15.5-17.4)	**18.4** (17.4-19.5)	**19.9** (18.7-21.0)	**21.2** (19.9-22.5)	**22.5** (21.1-23.9)	**24.2** (22.6-25.6)	**25.4** (23.6-26.9)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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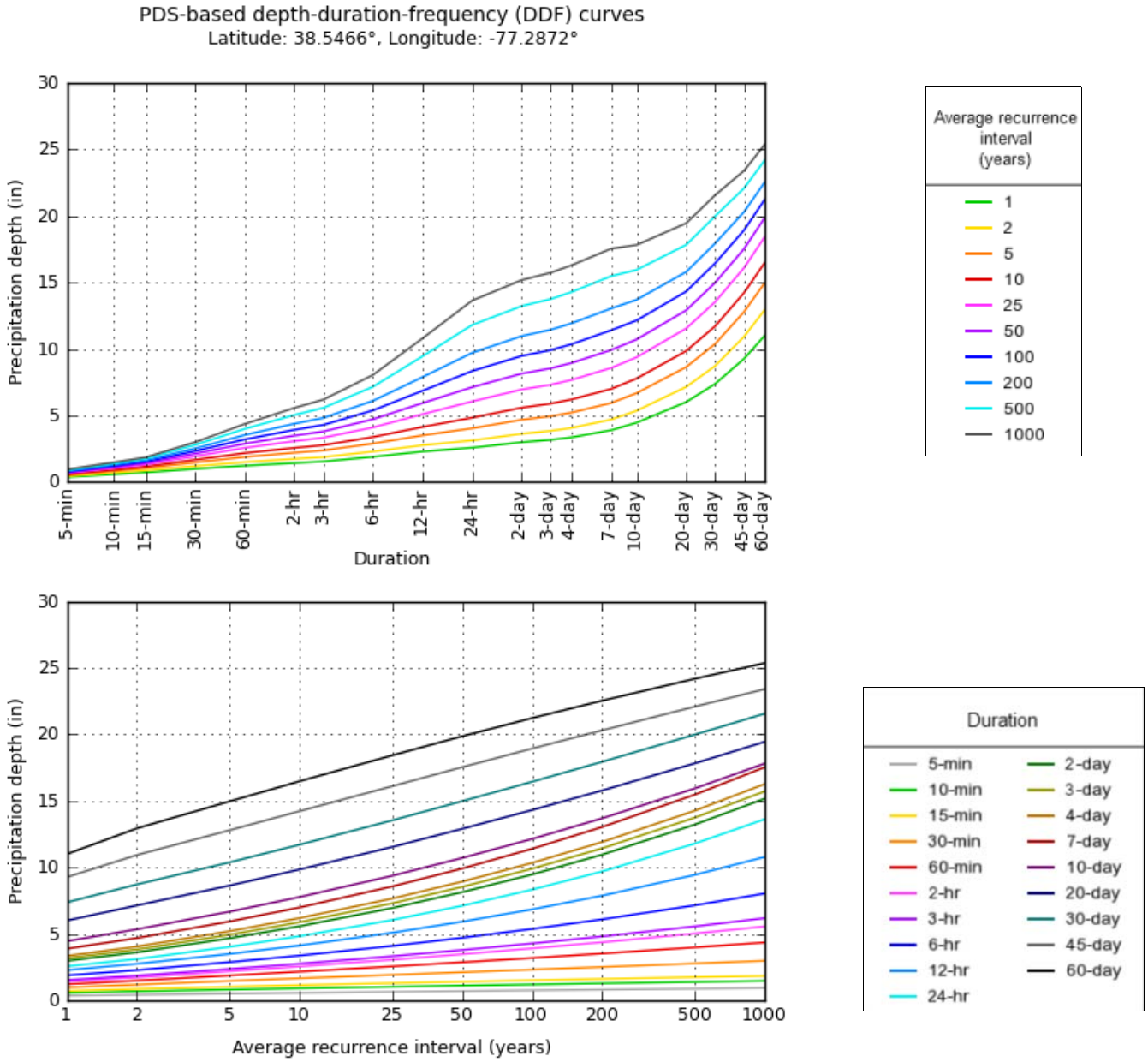
PF graphical



NOAA Atlas 14, Volume 2, Version 3

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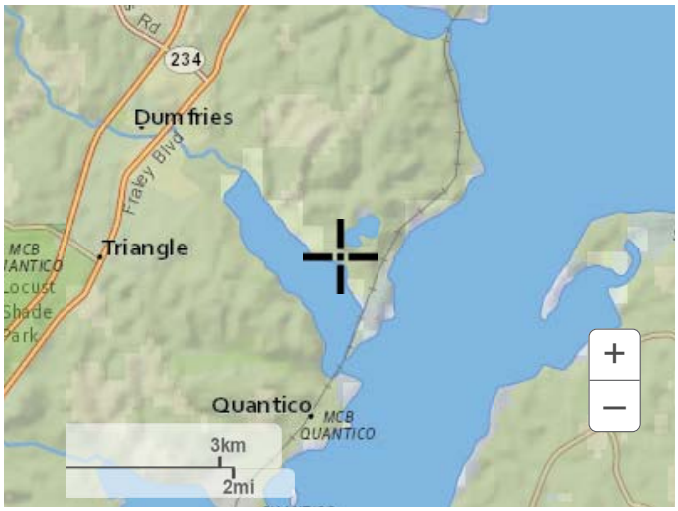
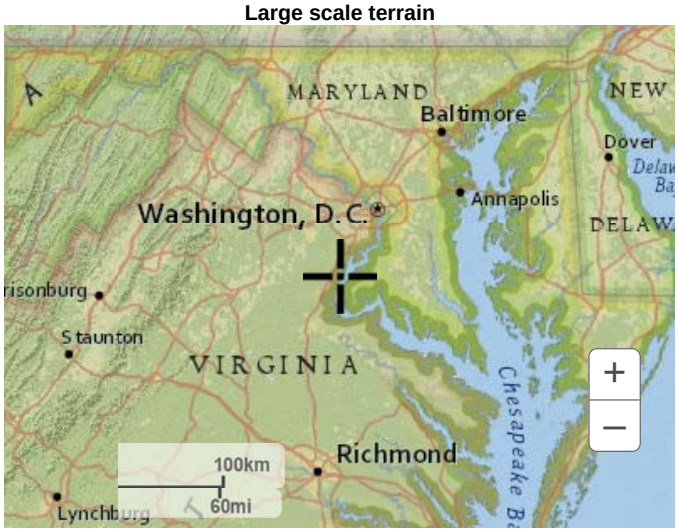
Maps & aerials

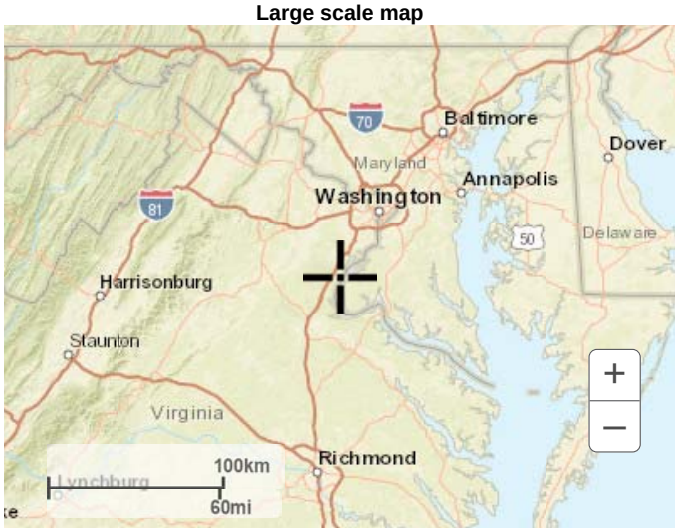
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial

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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

APPENDIX B

Hydraulic Modeling Analysis

CALCULATIONS

Date:	February 7, 2018	**Made by:**	KAL
Project No.:	16-62150	**Checked by:**	SDRM
Subject:	PPPS Ponds ABC Inflow Design Flood Analysis	**Reviewed by:**	DPM
Project:	**POSSUM POINT POWER STATION PONDS ABC – EXISTING CONDITION**		

The purpose of this evaluation is to determine the hydraulic performance of the existing Ponds ABC CCR impoundment at the Possum Point Power Station (PPPS) during the 1,000-year storm event. This evaluation is in support of the Inflow Design Flood Control System Plan, and is based on a "Significant" hazard potential classification as defined in §257.53 of the *CCR Rule*.

1.0 CALCULATIONS

1.1 Pond Storage Volume

Ponds ABC's storage volume was computed based on the existing condition, as surveyed in April 2017, which is excavated and visually clean of CCR. The maximum available storage in the ponds is approximately 118 acre-feet at elevation 20.0, with overtopping occuring above elevation 20.0. Attachment 1 contains the stage storage rating table used in the HMS model.

1.2 Outlet Design and Capacity

The existing Ponds ABC outfall structure consists of a rectangular riser box fitted with stoplogs to adjust the pond's permanent pool. For this analysis, the ponds were conservatively evaluated with a permanent pool at elevation 0.0 ft (approximately 3.7 ft of water) and no discharge through the riser structure.

1.3 Storm Routing Calculations

Analysis of the Ponds ABC stormwater system was performed using the US Army Corps of Engineers Hydrologic Engineering Center's Hydraulic Modeling System (HEC-HMS) software package (ref #1). The direct drainage area to the pond is 40.6 acres. The predominant soil types in the area are Hydrologic Soil Group (HSG) B soils.

Per §257.82(a)(3)(ii), the impoundments are required to adequately manage flow resulting from the 1,000-Yr storm event. The 24-hour, 1,000-Yr storm event precipitation amount was obtained from the Precipitation Frequency Data Server (PFDS, ref #2) for Dumfires, Virginia, as 13.6 inches.

Figure 1 illustrates the connectivity of the stormwater elements and the data inputs as modeled in HEC-HMS.

Golder Associates Inc.
2108 W. Laburnum Avenue, Suite 200
Richmond, VA 23227 USA
Tel: (804) 358-7900 Fax: (804) 358-2900 www.golder.com

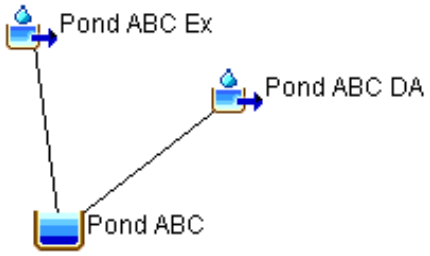


Figure 1 – PPPS Ponds ABC HEC-HMS Model

The following table summarizes the results of the HEC-HMS analysis for the 1,000-Yr storm event.

Table 1: PP ABC HEC-HMS Output

Q_{in} (CFS)	Max Hw (Ft El*)	Primary Q_{out} (CFS)
301.2	10.4	0.0

* Top of berm elevation = el. 20.0 ft

2.0 CONCLUSIONS

Based on the calculations presented herein, Ponds ABC can pass the 1,000-Yr event without overtopping.

3.0 REFERENCES

1) U.S. Army Corps of Engineers Hydrologic Engineering Center – Hydrologic Modeling System (HEC-HMS) release 4.2.1
2) Precipitation Frequency Data Server (NOAA Atlas 14) https://hdsc.nws.noaa.gov/hdsc/pfds/

4.0 ATTACHMENTS

1) Stage-Storage Table
2) Outlet Discharge
3) HEC-HMS

Ponds ABC Stage-Storage Table

Elevation	Area		Volume		Cumulative Volume		
(ft)	(sqft)	(acres)	(cuft)	(CY)	(CY)	(cuft)	(ac-ft)
20.00	476451.1	*10.938*	*465179.08*	*17228.85*	*189550.15*	*5117854*	*117.49*
19.00	453997.4	*10.422*	*443364.94*	*16420.92*	*172321.29*	*4652675*	*106.81*
18.00	432816.8	*9.936*	*424957.17*	*15739.15*	*155900.37*	*4209310*	*96.63*
17.00	417145.7	*9.576*	*408225.28*	*15119.45*	*140161.22*	*3784353*	*86.88*
16.00	399369.4	*9.168*	*390036.01*	*14445.78*	*125041.76*	*3376128*	*77.51*
15.00	380776.5	*8.741*	*371786.75*	*13769.88*	*110595.98*	*2986092*	*68.55*
14.00	362868.9	*8.330*	*355263.86*	*13157.92*	*96826.10*	*2614305*	*60.02*
13.00	347712.7	*7.982*	*340816.74*	*12622.84*	*83668.18*	*2259041*	*51.86*
12.00	333966.9	*7.667*	*307828.51*	*11401.06*	*71045.34*	*1918224*	*44.04*
11.00	282410.1	*6.483*	*267426.52*	*9904.69*	*59644.28*	*1610396*	*36.97*
10.00	252717.8	*5.802*	*240154.99*	*8894.63*	*49739.60*	*1342969*	*30.83*
9.00	227807.6	*5.230*	*214764.61*	*7954.24*	*40844.97*	*1102814*	*25.32*
8.00	201980.5	*4.637*	*189733.98*	*7027.18*	*32890.72*	*888050*	*20.39*
7.00	177745.5	*4.080*	*162850.36*	*6031.49*	*25863.54*	*698316*	*16.03*
6.00	148396.3	*3.407*	*137395.04*	*5088.71*	*19832.05*	*535465*	*12.29*
5.00	126680.0	*2.908*	*112761.64*	*4176.36*	*14743.34*	*398070*	*9.14*
4.00	99394.2	*2.282*	*73262.97*	*2713.44*	*10566.98*	*285309*	*6.55*
3.00	49940.5	*1.146*	*47051.52*	*1742.65*	*7853.54*	*212046*	*4.87*
2.00	44220.5	*1.015*	*41366.67*	*1532.10*	*6110.89*	*164994*	*3.79*
1.00	38577.0	*0.886*	*35973.36*	*1332.35*	*4578.79*	*123627*	*2.84*
0.00	33431.1	*0.767*	*30512.84*	*1130.11*	*3246.45*	*87654*	*2.01*
-1.00	27684.9	*0.636*	*25183.87*	*932.74*	*2116.34*	*57141*	*1.31*
-2.00	22763.1	*0.523*	*20525.54*	*760.21*	*1183.60*	*31957*	*0.73*
-3.00	18366.5	*0.422*	*11431.79*	*423.40*	*423.40*	*11432*	*0.26*
-3.70	14377.0	*0.330*	-	-	-	-	-

Basin Elevations		
Invert	-3.7	ft
Embankment	20	ft

1. Dewatering Device		
Type:	[None]	
Invert		*ft*
Width		*in*
Cd (orifice)	0.6	
Cw (weir)	3.33	
Orifice Area	0.00	*ft2*
Multiple Rows? (Y or N)		N

2. Principal Spillway		
Type:	Rect. Weir	
Crest	18	*ft*
Width	48	*in*
Cd (orifice)	0.6	
Cw (weir)	3.33	
Orifice Area	6.00	*ft2*
Number of Spillways:		1

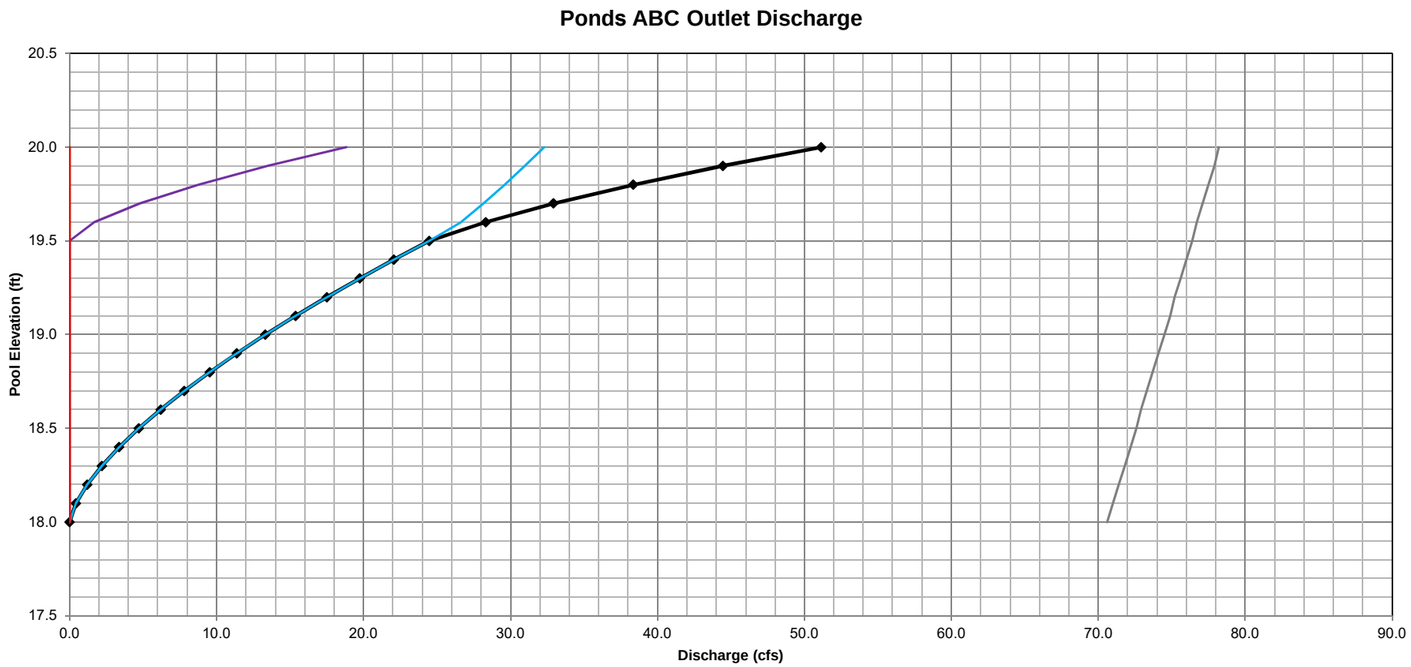
3. Secondary Spillway		
Type:	Riser (Box)	
Connect to PS?	Yes	
Crest	19.5	*ft*
Width	48	*in*
Cd (orifice)	0.6	
Cw (weir)	3.33	
Riser Area	16.00	*ft2*
Number of Spillways:		1

4. Discharge Pipe		
Invert	8	*ft/ft*
Diameter	30	*in*
Slope	0.0167	*ft/ft*
Length	60	*ft/ft*
Material	RCP	
Manning n	0.013	

out=3

5. Emergency Spillway		
B. Width	100	*ft*
Side Slope	10	:1
Invert	20	*ft*
Top Width	100	*ft*

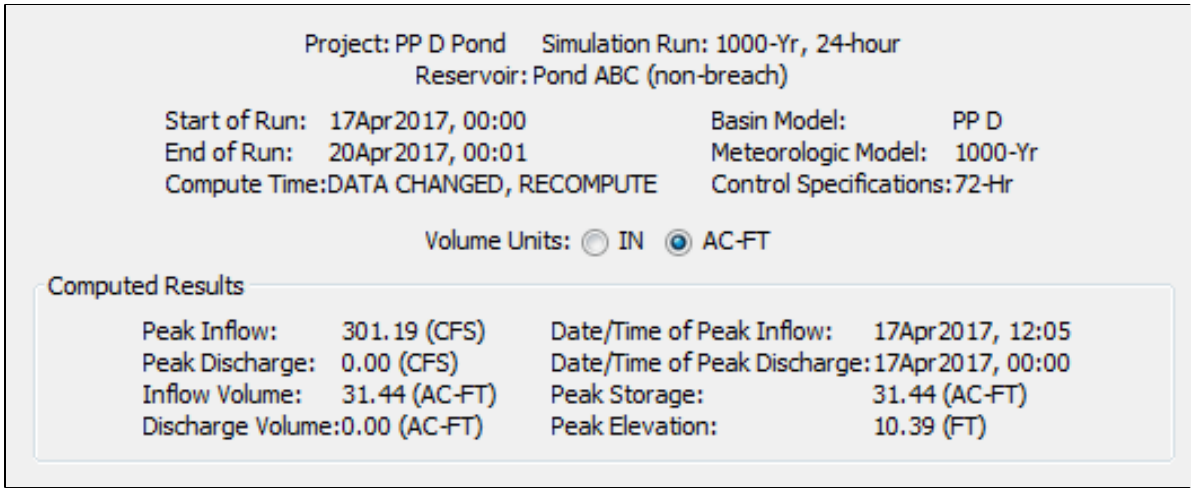
Min. Elev.	18	ft
Interval	0.1	ft



Water Elevation	Inlet-Controlled Discharge															Outlet-Controlled Discharge					Depth	Total Discharge
	Dewatering Device: [None]					Principal Spillway: Rect. Weir					Secondary Spillway: Riser (Box)					Barrel-Controlled Discharge	Controlling Condition	Actual Discharge	Emergency Spillway			
	Head	Discharge			Controlling Discharge	Head	Discharge		Controlling Condition	Controlling Discharge	Head	Discharge		Controlling Condition	Controlling Discharge				Head	Discharge		
		Skimmer	*Orifice*	*Weir*			*Orifice*	*Weir*				*Orifice*	*Weir*									
(ft)	*(ft)*	*(cfs)*	*(cfs)*	*(cfs)*	*(cfs)*	*(ft)*	*(cfs)*	*(cfs)*		*(cfs)*	*(ft)*	*(cfs)*	*(cfs)*		*(cfs)*	*(cfs)*		*(cfs)*	*(ft)*	*(cfs)*	*(ft)*	*(cfs)*
18.00					0.00	0.00		0.00	Weir	0.00					0.00	70.60	Inlet	0.00	0	0.00	**21.70**	**0.00**
18.10					0.00	0.10		0.42	Weir	0.42					0.00	71.00	Inlet	0.42	0	0.00	**21.80**	**0.42**
18.20					0.00	0.20		1.19	Weir	1.19					0.00	71.40	Inlet	1.19	0	0.00	**21.90**	**1.19**
18.30					0.00	0.30		2.19	Weir	2.19					0.00	71.80	Inlet	2.19	0	0.00	**22.00**	**2.19**
18.40					0.00	0.40		3.37	Weir	3.37					0.00	72.20	Inlet	3.37	0	0.00	**22.10**	**3.37**
18.50					0.00	0.50		4.71	Weir	4.71					0.00	72.60	Inlet	4.71	0	0.00	**22.20**	**4.71**
18.60					0.00	0.60		6.19	Weir	6.19					0.00	72.90	Inlet	6.19	0	0.00	**22.30**	**6.19**
18.70					0.00	0.70		7.80	Weir	7.80					0.00	73.30	Inlet	7.80	0	0.00	**22.40**	**7.80**
18.80					0.00	0.80		9.53	Weir	9.53					0.00	73.70	Inlet	9.53	0	0.00	**22.50**	**9.53**
18.90					0.00	0.90		11.37	Weir	11.37					0.00	74.10	Inlet	11.37	0	0.00	**22.60**	**11.37**
19.00					0.00	1.00		13.32	Weir	13.32					0.00	74.50	Inlet	13.32	0	0.00	**22.70**	**13.32**
19.10					0.00	1.10		15.37	Weir	15.37					0.00	74.90	Inlet	15.37	0	0.00	**22.80**	**15.37**
19.20					0.00	1.20		17.51	Weir	17.51					0.00	75.20	Inlet	17.51	0	0.00	**22.90**	**17.51**
19.30					0.00	1.30		19.74	Weir	19.74					0.00	75.60	Inlet	19.74	0	0.00	**23.00**	**19.74**
19.40					0.00	1.40		22.06	Weir	22.06					0.00	76.00	Inlet	22.06	0	0.00	**23.10**	**22.06**
19.50					0.00	1.50	25.02	24.47	Weir	24.47	0.00	0.00	0.00	Weir	0.00	76.40	Inlet	24.47	0	0.00	**23.20**	**24.47**
19.60					0.00	1.60	26.64	26.96	Orifice	26.64	0.10	24.36	1.68	Weir	1.68	76.70	Inlet	28.32	0	0.00	**23.30**	**28.32**
19.70					0.00	1.70	28.16	29.52	Orifice	28.16	0.20	34.45	4.77	Weir	4.77	77.10	Inlet	32.92	0	0.00	**23.40**	**32.92**
19.80					0.00	1.80	29.60	32.17	Orifice	29.60	0.30	42.20	8.75	Weir	8.75	77.50	Inlet	38.36	0	0.00	**23.50**	**38.36**
19.90					0.00	1.90	30.98	34.88	Orifice	30.98	0.40	48.72	13.48	Weir	13.48	77.90	Inlet	44.46	0	0.00	**23.60**	**44.46**
20.00					0.00	2.00	32.30	37.67	Orifice	32.30	0.50	54.48	18.84	Weir	18.84	78.20	Inlet	51.14	0	0.00	**23.70**	**51.14**

Ponds ABC HEC-HMS

Drainage Area	Area (ac)	CN	Lag Time (min)
Ponds ABC Ex	14.0	82	9.8
Ponds ABC DA	26.6	60	23.0



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Africa	+ 27 11 254 4800
Asia	+ 852 2562 3658
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 56 2 2616 2000

solutions@golder.com
www.golder.com

Golder Associates Inc.
2108 W. Laburnum Avenue, Suite 200
Richmond, VA 23227 USA
Tel: (804) 358-7900
Fax: (804) 358-2900

Golder Associates

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