Stormwater Detention and Infiltration Design Data Sheet

SDI-Design Data v2.00, Released January 2020

Stormwater Facility Name: **Winsome Filing No 3 Pond 1**

Facility Location & Jurisdiction: **El Paso County, CO**

User Input: Watershed Characteristics

Extended Detention Basin (EDB)	EDB	
Watershed Area =	60.00	acres
Watershed Length =	2,399	ft
Watershed Length to Centroid =	960	ft
Watershed Slope =	0.050	ft/ft
Watershed Imperviousness =	7.2%	percent
Percentage Hydrologic Soil Group A =	0.0%	percent
Percentage Hydrologic Soil Group B =	6.9%	percent
Percentage Hydrologic Soil Groups C/D =	93.1%	percent
Target WQCV Drain Time =	40.0	hours

Location for 1-hr Rainfall Depths (use dropdown):

User Input

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

Once CUHP has been run and the Stage-Area-Discharge information has been provided, click 'Process Data' to interpolate the Stage-Area-Volume-Discharge data and generate summary results in the table below. Once this is complete, click 'Print to PDF'.

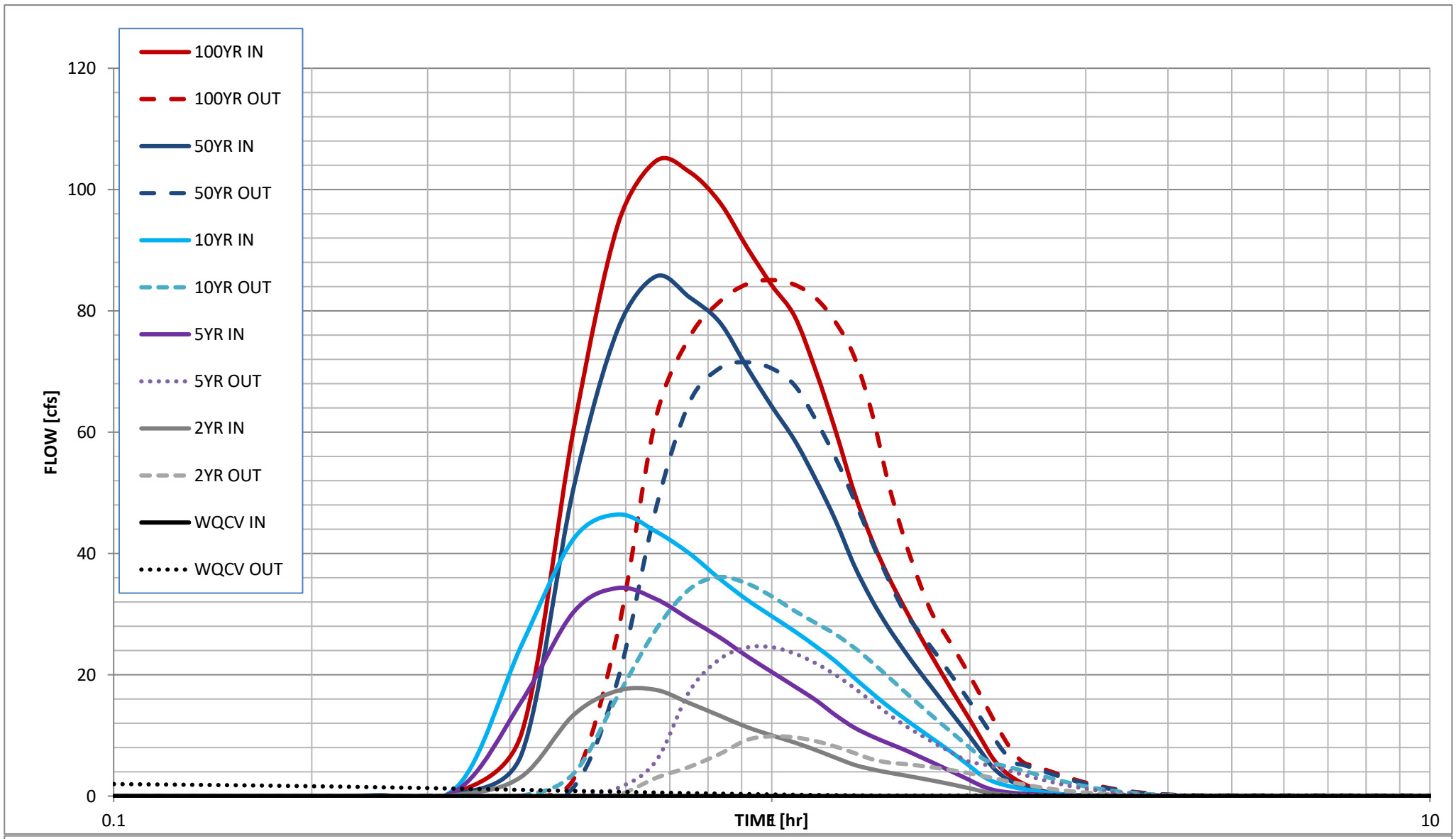
User Defined Stage [ft]	User Defined Area [ft^2]	User Defined Stage [ft]	User Defined Discharge [cfs]
0.00	49	0.00	0.00
1.00	3,129	1.00	0.04
2.00	8,445	2.00	0.09
3.00	12,704	3.00	5.65
4.00	16,119	4.00	29.52
5.00	19,963	5.00	68.80
6.00	23,990	6.00	88.52
7.00	28,209	7.00	309.27
8.00	35,153	8.00	704.71

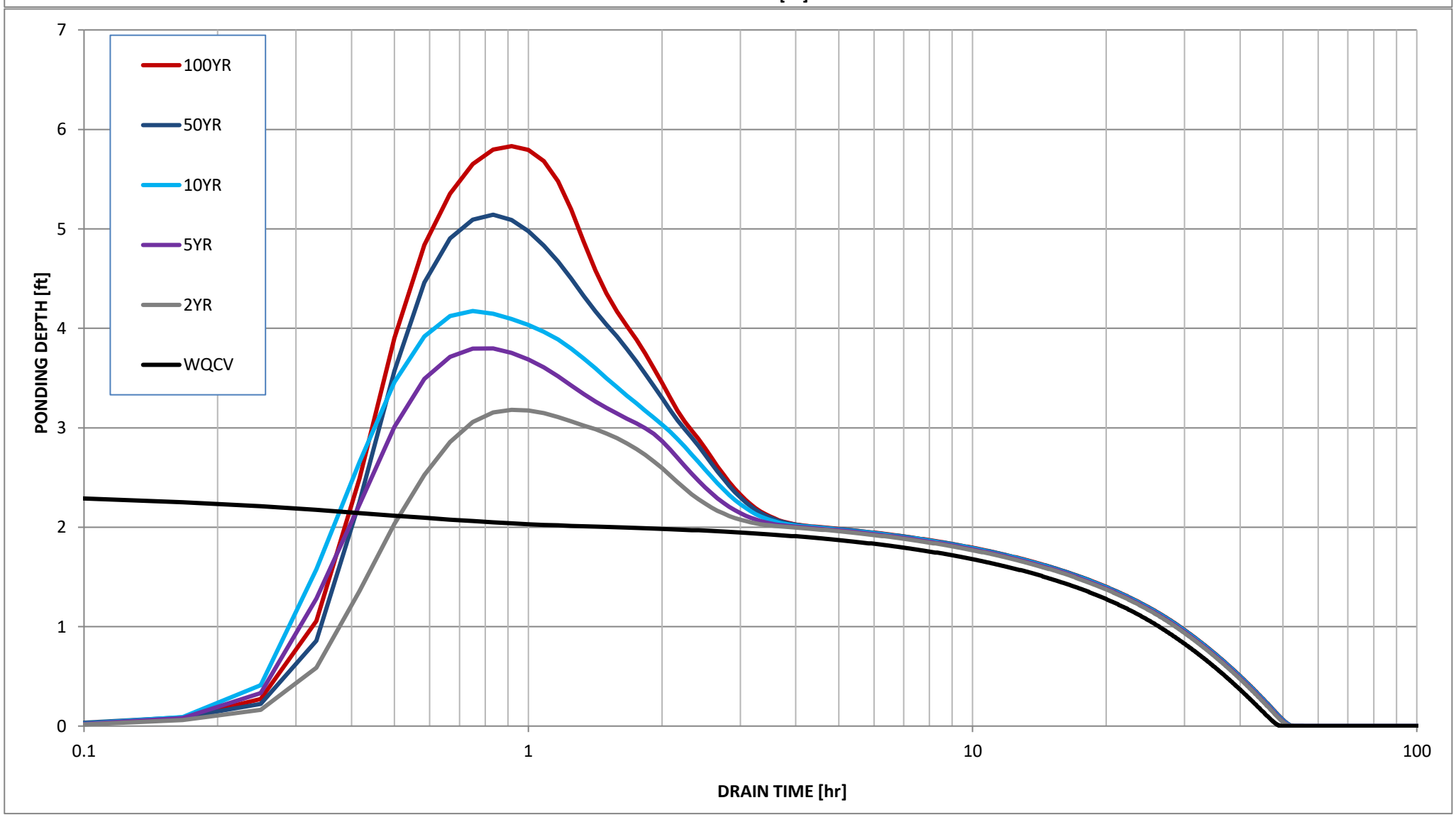
After completing and printing this worksheet to a pdf, go to:
https://maperture.digitaldataservices.com/gvh/?viewer=cswdif
Create a new stormwater facility, and attach the PDF of this worksheet to that record.

Routed Hydrograph Results

Design Storm Return Period =	WQCV	2 Year	5 Year	10 Year	50 Year	100 Year	
One-Hour Rainfall Depth =	N/A	1.19	1.50	1.75	2.25	2.52	in
CUHP Runoff Volume =	0.252	1.063	2.245	3.366	6.155	7.866	acre-ft
Inflow Hydrograph Volume =	N/A	1.063	2.245	3.366	6.155	7.866	acre-ft
Time to Drain 97% of Inflow Volume =	38.4	30.1	**21.2**	14.9	3.6	3.1	hours
Time to Drain 99% of Inflow Volume =	42.8	38.8	33.6	30.0	22.8	**19.3**	hours
Maximum Ponding Depth =	2.40	3.18	3.80	4.17	5.14	5.83	ft
Maximum Ponded Area =	0.23	0.30	0.35	0.38	0.47	**0.53**	acres
Maximum Volume Stored =	0.253	0.463	0.667	0.806	1.220	1.567	acre-ft

Stormwater Detention and Infiltration Design Data Sheet





Stormwater Detention and Infiltration Design Data Sheet

SDI-Design Data v2.00, Released January 2020

Stormwater Facility Name: **Winsome Filing No 3 Pond 2**

Facility Location & Jurisdiction: **El Paso County, CO**

User Input: Watershed Characteristics

Extended Detention Basin (EDB)	EDB	
Watershed Area =	67.90	acres
Watershed Length =	2,639	ft
Watershed Length to Centroid =	1,158	ft
Watershed Slope =	0.043	ft/ft
Watershed Imperviousness =	8.5%	percent
Percentage Hydrologic Soil Group A =	0.0%	percent
Percentage Hydrologic Soil Group B =	0.0%	percent
Percentage Hydrologic Soil Groups C/D =	100.0%	percent
Target WQCV Drain Time =	40.0	hours

Location for 1-hr Rainfall Depths (use dropdown):

User Input

User Defined Stage [ft]	User Defined Area [ft^2]	User Defined Stage [ft]	User Defined Discharge [cfs]
0.00	135	0.00	0.00
1.00	3,459	1.00	0.05
2.00	8,756	2.00	0.12
3.00	13,524	3.00	0.58
4.00	17,991	4.00	18.49
5.00	22,136	5.00	55.53
6.00	26,053	6.00	97.37
7.00	29,968	7.00	293.09
8.00	34,723	8.00	672.69

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

Once CUHP has been run and the Stage-Area-Discharge information has been provided, click 'Process Data' to interpolate the Stage-Area-Volume-Discharge data and generate summary results in the table below. Once this is complete, click 'Print to PDF'.

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Routed Hydrograph Results

Design Storm Return Period =	WQCV	2 Year	5 Year	10 Year	50 Year	100 Year	
One-Hour Rainfall Depth =	N/A	1.19	1.50	1.75	2.25	2.52	in
CUHP Runoff Volume =	0.330	1.313	2.686	3.969	7.125	9.058	acre-ft
Inflow Hydrograph Volume =	N/A	1.313	2.686	3.969	7.125	9.058	acre-ft
Time to Drain 97% of Inflow Volume =	37.0	33.0	**25.5**	20.3	10.8	7.9	hours
Time to Drain 99% of Inflow Volume =	41.1	40.8	36.4	33.3	27.3	**24.3**	hours
Maximum Ponding Depth =	2.63	3.55	4.21	4.53	5.49	5.96	ft
Maximum Ponded Area =	0.27	0.37	0.43	0.46	0.55	**0.59**	acres
Maximum Volume Stored =	0.330	0.619	0.884	1.027	1.516	1.785	acre-ft

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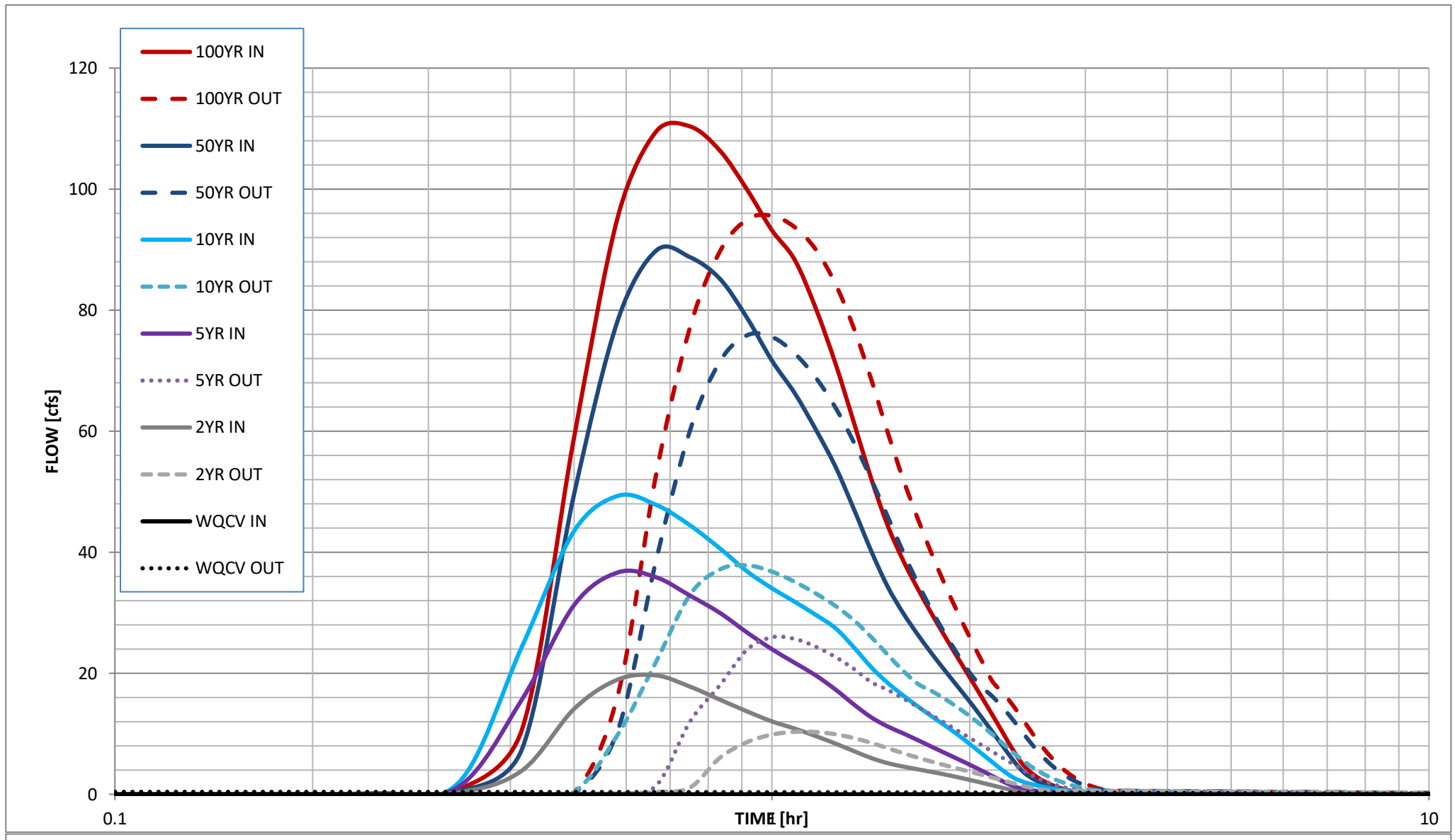

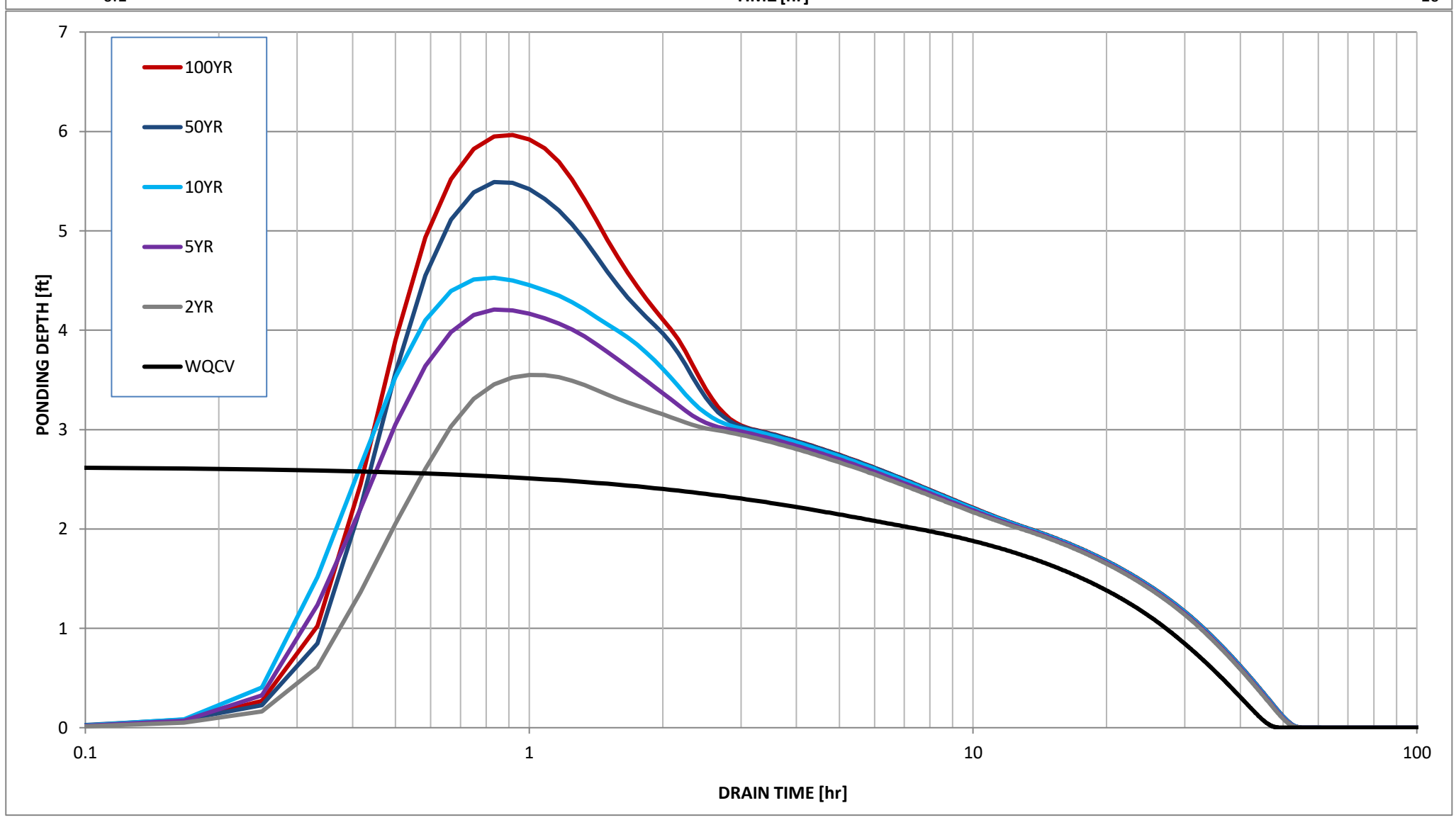

Stormwater Detention and Infiltration Design Data Sheet

SDI-Design Data v2.00, Released January 2020

Stormwater Facility Name: **Winsome Filing No 3 Pond 4**

Facility Location & Jurisdiction: **El Paso County, CO**

User Input: Watershed Characteristics

Extended Detention Basin (EDB)	EDB	
Watershed Area =	59.25	acres
Watershed Length =	2,267	ft
Watershed Length to Centroid =	1,368	ft
Watershed Slope =	0.057	ft/ft
Watershed Imperviousness =	11.7%	percent
Percentage Hydrologic Soil Group A =	0.0%	percent
Percentage Hydrologic Soil Group B =	14.0%	percent
Percentage Hydrologic Soil Groups C/D =	86.0%	percent
Target WQCV Drain Time =	40.0	hours

Location for 1-hr Rainfall Depths (use dropdown):

User Input

User Defined Stage [ft]	User Defined Area [ft^2]	User Defined Stage [ft]	User Defined Discharge [cfs]
0.00	199	0.00	0.00
1.00	6,673	1.00	0.07
2.00	19,170	2.00	0.15
3.00	25,505	3.00	11.11
4.00	28,834	4.00	40.13
5.00	32,149	5.00	75.43
6.00	35,437	6.00	218.27
7.00	38,668	7.00	583.92
8.00	41,628	8.00	1123.98

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

Once CUHP has been run and the Stage-Area-Discharge information has been provided, click 'Process Data' to interpolate the Stage-Area-Volume-Discharge data and generate summary results in the table below. Once this is complete, click 'Print to PDF'.

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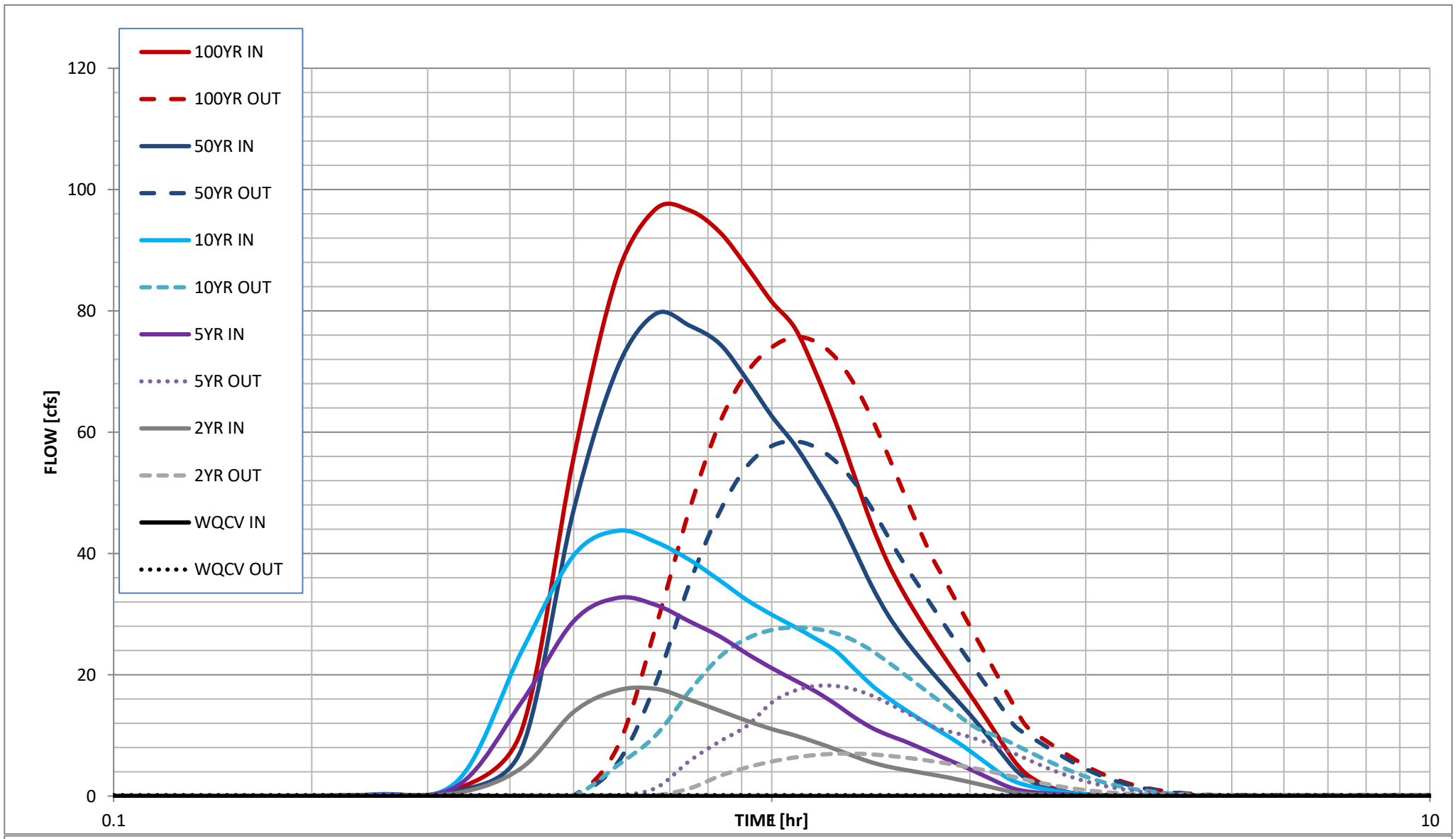
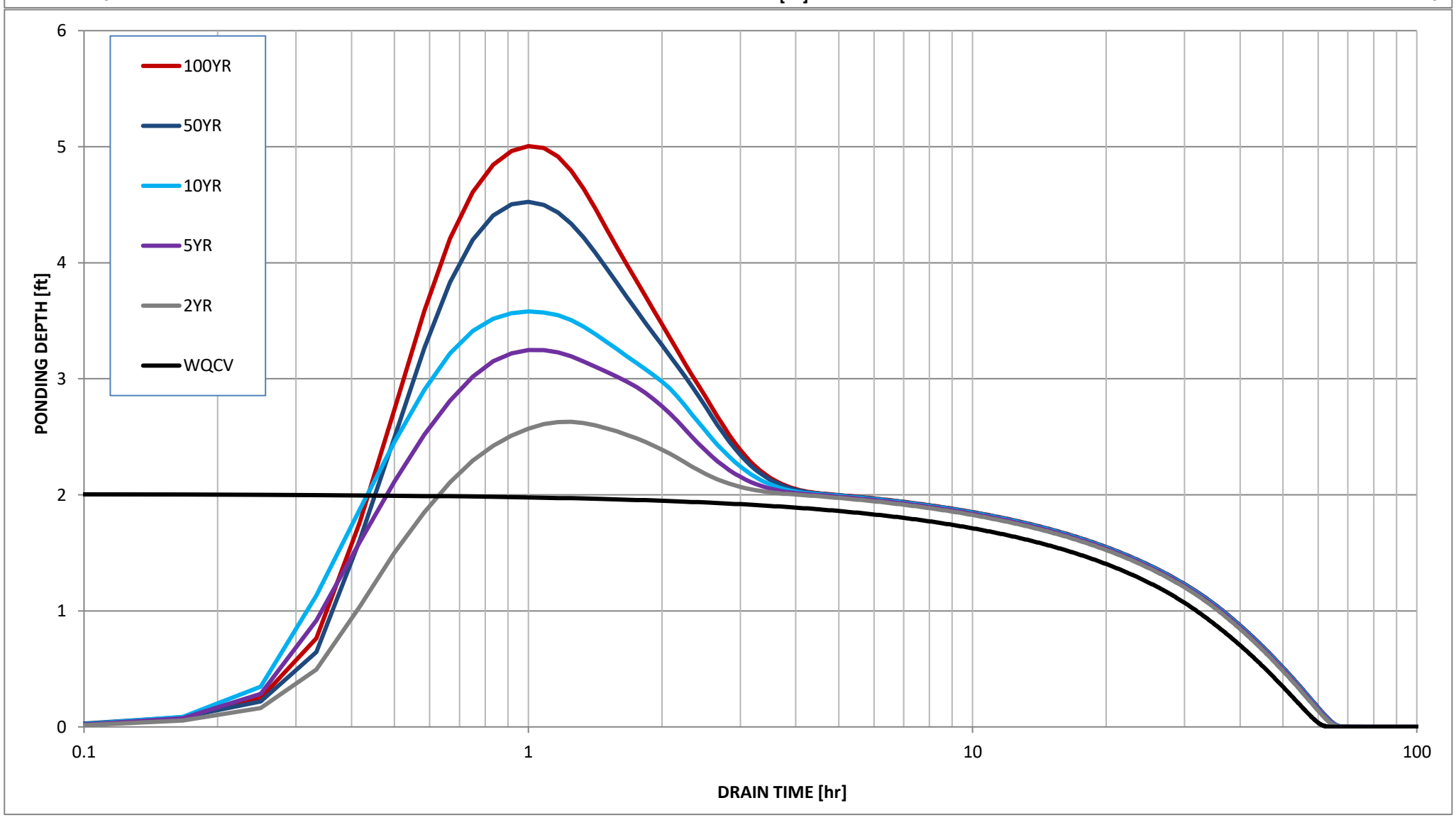
Routed Hydrograph Results

Design Storm Return Period =	WQCV	2 Year	5 Year	10 Year	50 Year	100 Year	
One-Hour Rainfall Depth =	N/A	1.19	1.50	1.75	2.25	2.52	in
CUHP Runoff Volume =	0.377	1.225	2.404	3.526	6.281	7.956	acre-ft
Inflow Hydrograph Volume =	N/A	1.225	2.404	3.526	6.281	7.956	acre-ft
Time to Drain 97% of Inflow Volume =	49.6	44.7	**37.3**	32.0	21.8	16.7	hours
Time to Drain 99% of Inflow Volume =	54.4	53.0	48.8	45.7	39.6	**36.5**	hours
Maximum Ponding Depth =	2.01	2.63	3.25	3.58	4.52	5.00	ft
Maximum Ponded Area =	0.44	0.53	0.60	0.63	0.70	**0.74**	acres
Maximum Volume Stored =	0.380	0.678	1.030	1.236	1.863	2.211	acre-ft

Stormwater Detention and Infiltration Design Data Sheet





Stormwater Detention and Infiltration Design Data Sheet

SDI-Design Data v2.00, Released January 2020

Stormwater Facility Name: **Winsome Filing No 3 Water Quality Pond**

Facility Location & Jurisdiction: **El Paso County, CO**

User Input: Watershed Characteristics

Extended Detention Basin (EDB)	EDB	
Watershed Area =	94.50	acres
Watershed Length =	2,895	ft
Watershed Length to Centroid =	1,447	ft
Watershed Slope =	0.040	ft/ft
Watershed Imperviousness =	2.0%	percent
Percentage Hydrologic Soil Group A =	0.0%	percent
Percentage Hydrologic Soil Group B =	0.0%	percent
Percentage Hydrologic Soil Groups C/D =	100.0%	percent
Target WQCV Drain Time =	40.0	hours

Location for 1-hr Rainfall Depths (use dropdown):

User Input

User Defined Stage [ft]	User Defined Area [ft^2]	User Defined Stage [ft]	User Defined Discharge [cfs]
0.00	270	0.00	0.00
1.00	4,457	1.00	0.03
2.00	6,962	2.00	1.28
3.00	8,928	3.00	166.63
4.00	13,970	4.00	471.26

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

Once CUHP has been run and the Stage-Area-Discharge information has been provided, click 'Process Data' to interpolate the Stage-Area-Volume-Discharge data and generate summary results in the table below. Once this is complete, click 'Print to PDF'.

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Routed Hydrograph Results

Design Storm Return Period =	WQCV	2 Year	5 Year	10 Year	50 Year	100 Year	
One-Hour Rainfall Depth =	N/A	1.19	1.50	1.75	2.25	2.52	in
CUHP Runoff Volume =	0.119	1.393	3.212	4.950	9.361	12.096	acre-ft
Inflow Hydrograph Volume =	N/A	1.393	3.212	4.950	9.361	12.096	acre-ft
Time to Drain 97% of Inflow Volume =	44.7	13.3	**3.8**	3.2	1.0	0.8	hours
Time to Drain 99% of Inflow Volume =	51.8	33.2	19.2	9.7	4.3	**3.7**	hours
Maximum Ponding Depth =	1.55	2.15	2.34	2.41	2.75	2.92	ft
Maximum Ponded Area =	0.13	0.17	0.17	0.18	0.19	**0.20**	acres
Maximum Volume Stored =	0.119	0.209	0.241	0.254	0.317	0.351	acre-ft

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