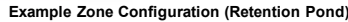


MHFD-Detention, Version 4.06 (July 2022)

Basin ID: Pond 1



Zone 1 Volume (WQCV) =	0.997	acre-feet
Zone 2 Volume (EURV - Zone 1) =	1.216	acre-feet
Zone 3 Volume (100-year - Zones 1 & 2) =	3.080	acre-feet
Total Detention Basin Volume =	5.293	acre-feet
Initial Surge Volume (ISV) =	user	ft ³
Initial Surge Depth (ISD) =	user	ft
Total Available Detention Depth (H_{total}) =	user	ft
Depth of Trickle Channel (H_{TC}) =	user	ft
Slope of Trickle Channel (S_{TC}) =	user	ft/ft
Slopes of Main Basin Sides (S_{main}) =	user	H:V
Basin Length-to-Width Ratio ($R_{L/W}$) =	user	

DPM
ADDRESSED COMMENTS PER FDR FOR PONDS 1-3

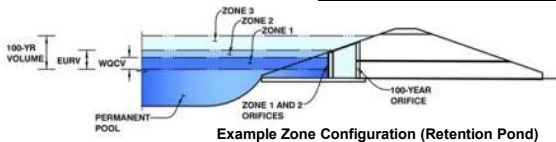
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DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.06 (July 2022)

Project: Falcon Reserve Filing No. 1

Basin ID: Pond 1



Example Zone Configuration (Retention Pond)

	Estimated Stage (ft)	Estimated Volume (ac-ft)	Outlet Type
Zone 1 (WQCV)	3.24	0.997	Orifice Plate
Zone 2 (EURV)	4.84	1.216	Orifice Plate
Zone 3 (100-year)	8.03	3.080	Weir&Pipe (Restrict)
Total (all zones)		5.293	

User Input: Orifice at Underdrain Outlet (typically used to drain WQCV in a Filtration BMP)

Underdrain Orifice Invert Depth = ft (distance below the filtration media surface)
Underdrain Orifice Diameter = inches

Calculated Parameters for Underdrain
Underdrain Orifice Area = ft²
Underdrain Orifice Centroid = feet

User Input: Orifice Plate with one or more orifices or Elliptical Slot Weir (typically used to drain WQCV and/or EURV in a sedimentation BMP)

Centroid of Lowest Orifice = ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Orifice Plate = ft (relative to basin bottom at Stage = 0 ft)
Orifice Plate: Orifice Vertical Spacing = inches
Orifice Plate: Orifice Area per Row = sq. inches

Calculated Parameters for Plate
WQ Orifice Area per Row = ft²
Elliptical Half-Width = feet
Elliptical Slot Centroid = feet
Elliptical Slot Area = ft²

User Input: Stage and Total Area of Each Orifice Row (numbered from lowest to highest)

	Row 1 (required)	Row 2 (optional)	Row 3 (optional)	Row 4 (optional)	Row 5 (optional)	Row 6 (optional)	Row 7 (optional)	Row 8 (optional)
Stage of Orifice Centroid (ft)	0.00	1.61	3.23					
Orifice Area (sq. inches)	4.55	2.80	1.80					

	Row 9 (optional)	Row 10 (optional)	Row 11 (optional)	Row 12 (optional)	Row 13 (optional)	Row 14 (optional)	Row 15 (optional)	Row 16 (optional)
Stage of Orifice Centroid (ft)								
Orifice Area (sq. inches)								

User Input: Vertical Orifice (Circular or Rectangular)

Invert of Vertical Orifice = ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Vertical Orifice = ft (relative to basin bottom at Stage = 0 ft)
Vertical Orifice Diameter = inches

Calculated Parameters for Vertical Orifice
Vertical Orifice Area = ft²
Vertical Orifice Centroid = feet

User Input: Overflow Weir (Dropbox with Flat or Sloped Grate and Outlet Pipe OR Rectangular/Trapezoidal Weir and No Outlet Pipe)

Overflow Weir Front Edge Height, H_o = ft (relative to basin bottom at Stage = 0 ft)
Overflow Weir Front Edge Length = feet
Overflow Weir Grate Slope = H:V
Horiz. Length of Weir Sides = feet
Overflow Grate Type =
Debris Clogging % = %

Calculated Parameters for Overflow Weir
Height of Grate Upper Edge, H_u = feet
Overflow Weir Slope Length = feet
Grate Open Area / 100-yr Orifice Area =
Overflow Grate Open Area w/o Debris = ft²
Overflow Grate Open Area w/ Debris = ft²

User Input: Outlet Pipe w/ Flow Restriction Plate (Circular Orifice, Restrictor Plate, or Rectangular Orifice)

Depth to Invert of Outlet Pipe = ft (distance below basin bottom at Stage = 0 ft)
Outlet Pipe Diameter = inches
Restrictor Plate Height Above Pipe Invert = inches

Calculated Parameters for Outlet Pipe w/ Flow Restriction Plate
Outlet Orifice Area = ft²
Outlet Orifice Centroid = feet
Half-Central Angle of Restrictor Plate on Pipe = radians

User Input: Emergency Spillway (Rectangular or Trapezoidal)

Spillway Invert Stage = ft (relative to basin bottom at Stage = 0 ft)
Spillway Crest Length = feet
Spillway End Slopes = H:V
Freeboard above Max Water Surface = feet

Calculated Parameters for Spillway
Spillway Design Flow Depth = feet
Stage at Top of Freeboard = feet
Basin Area at Top of Freeboard = acres
Basin Volume at Top of Freeboard = acre-ft

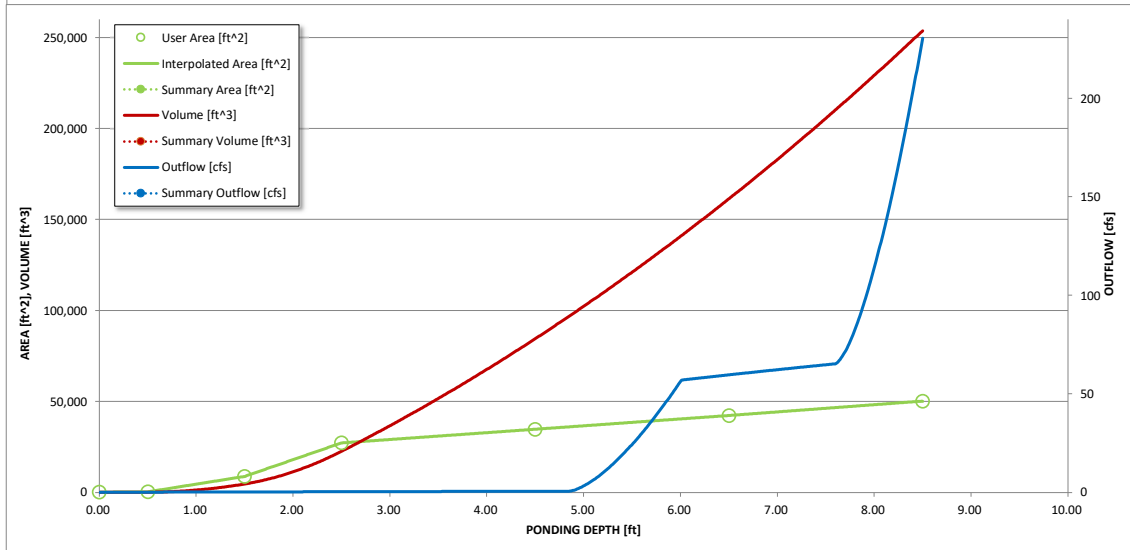
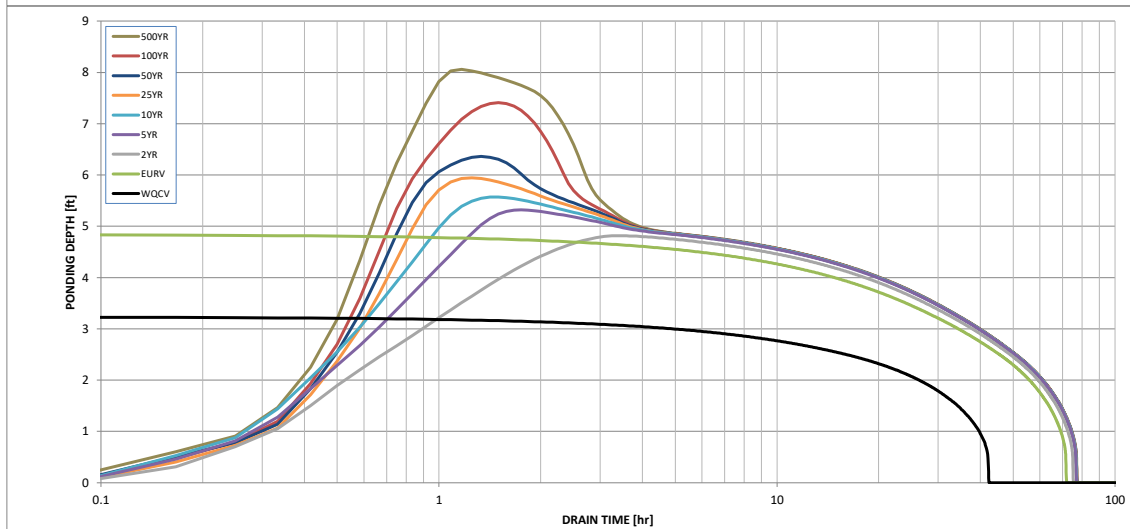
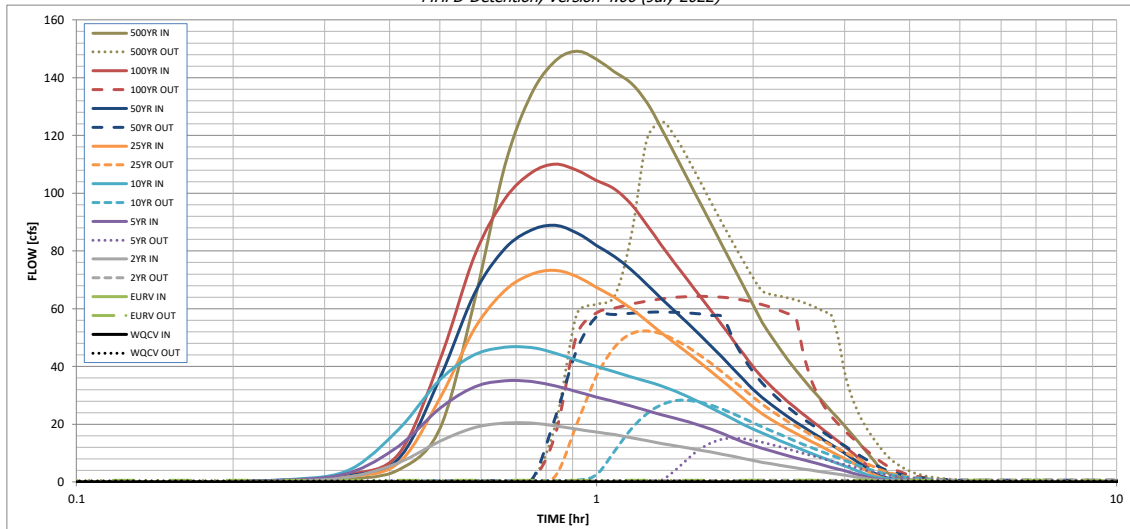
Routed Hydrograph Results

The user can override the default CUHP hydrographs and runoff volumes by entering new values in the Inflow Hydrographs table (Columns W through AF).

	WQCV	EURV	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	500 Year
Design Storm Return Period	N/A	N/A	1.19	1.50	1.75	2.00	2.25	2.52	3.14
One-Hour Rainfall Depth (in)	N/A	N/A	2.337	4.032	5.622	8.124	9.958	12.462	17.213
CUHP Runoff Volume (acre-ft)	0.997	2.213	2.337	4.032	5.622	8.124	9.958	12.462	17.213
Inflow Hydrograph Volume (acre-ft)	N/A	N/A	2.337	4.032	5.622	8.124	9.958	12.462	17.213
CUHP Predevelopment Peak Q (cfs)	N/A	N/A	6.9	19.4	30.0	55.0	69.2	89.3	125.1
OPTIONAL Override Predevelopment Peak Q (cfs)	N/A	N/A							
Predevelopment Unit Peak Flow, q (cfs/acre)	N/A	N/A	0.08	0.21	0.33	0.61	0.76	0.98	1.38
Peak Inflow Q (cfs)	N/A	N/A	20.4	35.1	46.6	73.3	88.9	110.0	149.2
Peak Outflow Q (cfs)	0.4	0.6	0.6	15.2	28.3	52.3	58.9	64.3	124.8
Ratio Peak Outflow to Predevelopment Q	N/A	N/A	N/A	0.8	0.9	1.0	0.9	0.7	1.0
Structure Controlling Flow	Plate	Plate	Plate	Overflow Weir 1	Overflow Weir 1	Overflow Weir 1	Outlet Plate 1	Outlet Plate 1	Spillway
Max Velocity through Grate 1 (fps)	N/A	N/A	N/A	0.5	0.9	1.6	1.9	2.0	2.1
Max Velocity through Grate 2 (fps)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time to Drain 97% of Inflow Volume (hours)	40	66	70	68	65	62	59	56	51
Time to Drain 99% of Inflow Volume (hours)	41	70	73	73	72	71	70	68	65
Maximum Ponding Depth (ft)	3.24	4.84	4.82	5.32	5.57	5.94	6.36	7.41	8.06
Area at Maximum Ponding Depth (acres)	0.69	0.83	0.82	0.87	0.89	0.92	0.96	1.05	1.11
Maximum Volume Stored (acre-ft)	1.003	2.213	2.189	2.620	2.839	3.174	3.569	4.624	5.316

DETENTION BASIN OUTLET STRUCTURE DESIGN

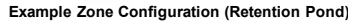
MHFD-Detention, Version 4.06 (July 2022)



S-A-V-D Chart Axis Override	X-axis	Left Y-Axis	Right Y-Axis
minimum bound			
maximum bound			

MHFD-Detention, Version 4.06 (July 2022)

Basin ID: Pond 2



7101

Water Quality Capture Volume (WQCV) =	0.779	acre-feet
Excess Urban Runoff Volume (EURV) =	1.895	acre-feet
2-yr Runoff Volume (P1 = 1.19 in.) =	1.925	acre-feet
5-yr Runoff Volume (P1 = 1.5 in.) =	3.130	acre-feet
10-yr Runoff Volume (P1 = 1.75 in.) =	4.238	acre-feet
25-yr Runoff Volume (P1 = 2 in.) =	5.916	acre-feet
50-yr Runoff Volume (P1 = 2.25 in.) =	7.183	acre-feet
100-yr Runoff Volume (P1 = 2.52 in.) =	8.877	acre-feet
500-yr Runoff Volume (P1 = 3.14 in.) =	12.147	acre-feet
Approximate 2-yr Detention Volume =	1.355	acre-feet
Approximate 5-yr Detention Volume =	1.939	acre-feet
Approximate 10-yr Detention Volume =	2.833	acre-feet
Approximate 25-yr Detention Volume =	3.289	acre-feet
Approximate 50-yr Detention Volume =	3.466	acre-feet
Approximate 100-yr Detention Volume =	4.100	acre-feet

Zone 1 Volume (WQCV) =	0.779	acre-feet
Zone 2 Volume (EURV - Zone 1) =	1.116	acre-feet
Zone 3 Volume (100-year - Zones 1 & 2) =	2.206	acre-feet
Total Detention Basin Volume =	4.100	acre-feet
Initial Surcharge Volume (ISV) =	user	ft ³
Initial Surcharge Depth (ISD) =	user	ft
Total Available Detention Depth (H_{TDA}) =	user	ft
Depth of Trickle Channel (H_{TC}) =	user	ft
Slope of Trickle Channel (S_{TC}) =	user	ft/ft
Slopes of Main Basin Sides (S_{main}) =	user	H:V
Basin Length-to-Width Ratio ($R_{L/W}$) =	user	

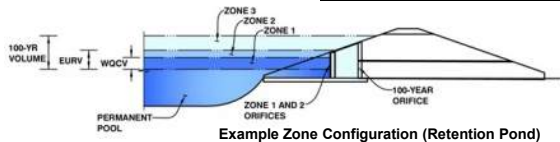
Optional User Overrides

DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.06 (July 2022)

Project: Falcon Reserve Filing No. 1

Basin ID: Pond 2



Example Zone Configuration (Retention Pond)

	Estimated Stage (ft)	Estimated Volume (ac-ft)	Outlet Type
Zone 1 (WQCV)	3.22	0.779	Orifice Plate
Zone 2 (EURV)	4.68	1.116	Orifice Plate
Zone 3 (100-year)	7.10	2.206	Weir&Pipe (Restrict)
Total (all zones)		4.100	

User Input: Orifice at Underdrain Outlet (typically used to drain WQCV in a Filtration BMP)

Underdrain Orifice Invert Depth = ft (distance below the filtration media surface)
Underdrain Orifice Diameter = inches

Calculated Parameters for Underdrain
Underdrain Orifice Area = ft²
Underdrain Orifice Centroid = feet

User Input: Orifice Plate with one or more orifices or Elliptical Slot Weir (typically used to drain WQCV and/or EURV in a sedimentation BMP)

Centroid of Lowest Orifice = ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Orifice Plate = ft (relative to basin bottom at Stage = 0 ft)
Orifice Plate: Orifice Vertical Spacing = inches
Orifice Plate: Orifice Area per Row = sq. inches (diameter = 1-15/16 inches)

Calculated Parameters for Plate
WQ Orifice Area per Row = ft²
Elliptical Half-Width = feet
Elliptical Slot Centroid = feet
Elliptical Slot Area = ft²

User Input: Stage and Total Area of Each Orifice Row (numbered from lowest to highest)

	Row 1 (required)	Row 2 (optional)	Row 3 (optional)	Row 4 (optional)	Row 5 (optional)	Row 6 (optional)	Row 7 (optional)	Row 8 (optional)
Stage of Orifice Centroid (ft)	0.00	1.56	3.12					
Orifice Area (sq. inches)	2.97	2.97	2.97					

	Row 9 (optional)	Row 10 (optional)	Row 11 (optional)	Row 12 (optional)	Row 13 (optional)	Row 14 (optional)	Row 15 (optional)	Row 16 (optional)
Stage of Orifice Centroid (ft)								
Orifice Area (sq. inches)								

User Input: Vertical Orifice (Circular or Rectangular)

Invert of Vertical Orifice = ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Vertical Orifice = ft (relative to basin bottom at Stage = 0 ft)
Vertical Orifice Diameter = inches

Calculated Parameters for Vertical Orifice
Vertical Orifice Area = ft²
Vertical Orifice Centroid = feet

User Input: Overflow Weir (Dropbox with Flat or Sloped Grate and Outlet Pipe OR Rectangular/Trapezoidal Weir and No Outlet Pipe)

Overflow Weir Front Edge Height, H_o = ft (relative to basin bottom at Stage = 0 ft)
Overflow Weir Front Edge Length = feet
Overflow Weir Grate Slope = H:V
Horiz. Length of Weir Sides = feet
Overflow Grate Type =
Debris Clogging % = %

Calculated Parameters for Overflow Weir
Height of Grate Upper Edge, H_u = feet
Overflow Weir Slope Length = feet
Grate Open Area / 100-yr Orifice Area =
Overflow Grate Open Area w/o Debris = ft²
Overflow Grate Open Area w/ Debris = ft²

User Input: Outlet Pipe w/ Flow Restriction Plate (Circular Orifice, Restrictor Plate, or Rectangular Orifice)

Depth to Invert of Outlet Pipe = ft (distance below basin bottom at Stage = 0 ft)
Outlet Pipe Diameter = inches
Restrictor Plate Height Above Pipe Invert = inches

Calculated Parameters for Outlet Pipe w/ Flow Restriction Plate
Outlet Orifice Area = ft²
Outlet Orifice Centroid = feet
Half-Central Angle of Restrictor Plate on Pipe = radians

User Input: Emergency Spillway (Rectangular or Trapezoidal)

Spillway Invert Stage = ft (relative to basin bottom at Stage = 0 ft)
Spillway Crest Length = feet
Spillway End Slopes = H:V
Freeboard above Max Water Surface = feet

Calculated Parameters for Spillway
Spillway Design Flow Depth = feet
Stage at Top of Freeboard = feet
Basin Area at Top of Freeboard = acres
Basin Volume at Top of Freeboard = acre-ft

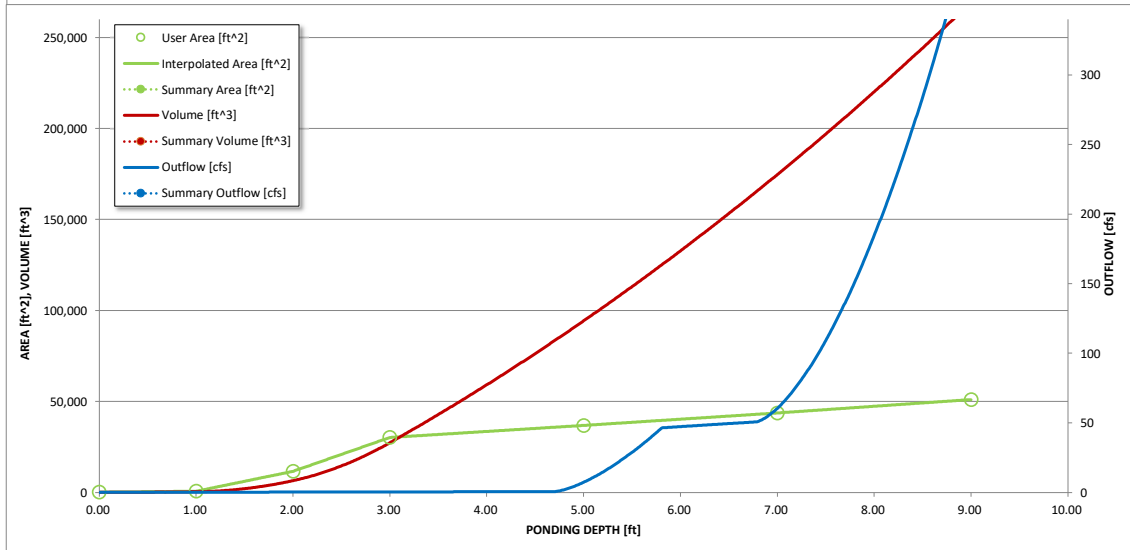
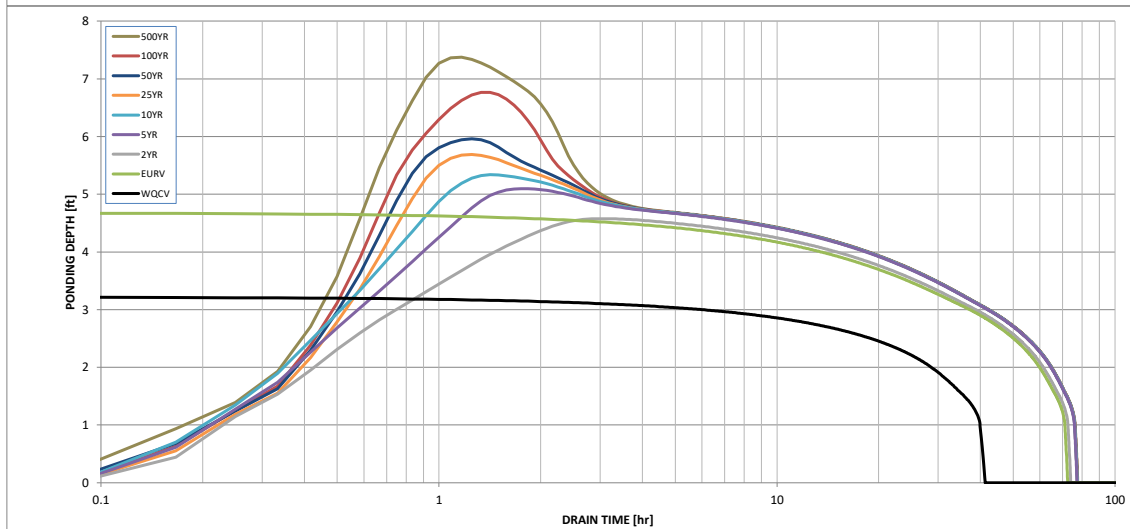
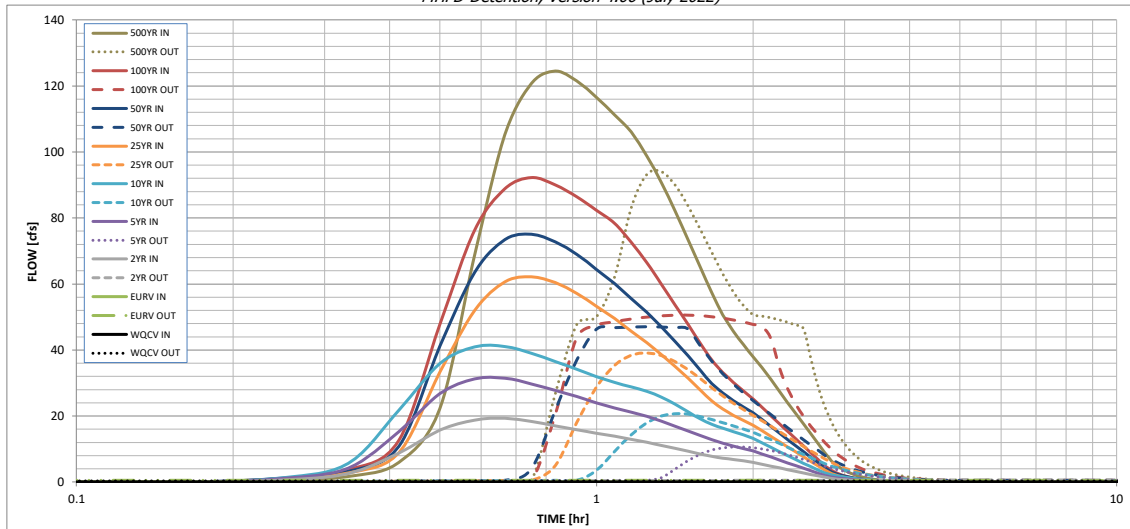
Routed Hydrograph Results

The user can override the default CUHP hydrographs and runoff volumes by entering new values in the Inflow Hydrographs table (Columns W through AF).

	WQCV	EURV	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	500 Year
Design Storm Return Period	N/A	N/A	1.19	1.50	1.75	2.00	2.25	2.52	3.14
One-Hour Rainfall Depth (in)	N/A	N/A	1.19	1.50	1.75	2.00	2.25	2.52	3.14
CUHP Runoff Volume (acre-ft)	0.779	1.895	1.925	3.130	4.238	5.916	7.183	8.877	12.147
Inflow Hydrograph Volume (acre-ft)	N/A	N/A	1.925	3.130	4.238	5.916	7.183	8.877	12.147
CUHP Predevelopment Peak Q (cfs)	N/A	N/A	5.2	14.6	22.4	41.1	51.6	66.1	92.5
OPTIONAL Override Predevelopment Peak Q (cfs)	N/A	N/A							
Predevelopment Unit Peak Flow, q (cfs/acre)	N/A	N/A	0.08	0.24	0.36	0.66	0.83	1.07	1.49
Peak Inflow Q (cfs)	N/A	N/A	19.3	31.5	41.1	62.2	75.0	92.2	124.5
Peak Outflow Q (cfs)	0.3	0.5	0.5	10.6	20.7	39.1	47.1	50.6	94.1
Ratio Peak Outflow to Predevelopment Q	N/A	N/A	N/A	0.7	0.9	1.0	0.9	0.8	1.0
Structure Controlling Flow	Plate	Plate	Plate	Overflow Weir 1	Overflow Weir 1	Overflow Weir 1	Outlet Plate 1	Outlet Plate 1	Spillway
Max Velocity through Grate 1 (fps)	N/A	N/A	N/A	0.4	0.8	1.6	1.9	2.0	2.1
Max Velocity through Grate 2 (fps)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time to Drain 97% of Inflow Volume (hours)	38	66	67	68	66	63	61	59	54
Time to Drain 99% of Inflow Volume (hours)	40	70	71	73	72	71	70	69	67
Maximum Ponding Depth (ft)	3.22	4.68	4.58	5.10	5.34	5.69	5.96	6.77	7.37
Area at Maximum Ponding Depth (acres)	0.71	0.82	0.81	0.85	0.87	0.90	0.92	0.98	1.03
Maximum Volume Stored (acre-ft)	0.780	1.897	1.807	2.240	2.446	2.756	3.010	3.772	4.386

DETENTION BASIN OUTLET STRUCTURE DESIGN

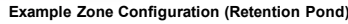
MHFD-Detention, Version 4.06 (July 2022)



S-A-V-D Chart Axis Override	X-axis	Left Y-Axis	Right Y-Axis
minimum bound			
maximum bound			

MHFD-Detention, Version 4.06 (July 2022)

Basin ID: Pond 3



7107.32

Water Quality Capture Volume (WQCV) =	0.602	acre-feet
Excess Urban Runoff Volume (EURV) =	1.433	acre-feet
2-yr Runoff Volume (P1 = 1.19 in.) =	1.463	acre-feet
5-yr Runoff Volume (P1 = 1.5 in.) =	2.410	acre-feet
10-yr Runoff Volume (P1 = 1.75 in.) =	3.289	acre-feet
25-yr Runoff Volume (P1 = 2 in.) =	4.631	acre-feet
50-yr Runoff Volume (P1 = 2.25 in.) =	5.637	acre-feet
100-yr Runoff Volume (P1 = 2.52 in.) =	6.987	acre-feet
500-yr Runoff Volume (P1 = 3.14 in.) =	9.582	acre-feet
Approximate 2-yr Detention Volume =	1.019	acre-feet
Approximate 5-yr Detention Volume =	1.465	acre-feet
Approximate 10-yr Detention Volume =	2.163	acre-feet
Approximate 25-yr Detention Volume =	2.529	acre-feet
Approximate 50-yr Detention Volume =	2.667	acre-feet
Approximate 100-yr Detention Volume =	3.171	acre-feet

Zone 1 Volume (WQCV) =	0.602	acre-feet
Zone 2 Volume (EURV - Zone 1) =	0.830	acre-feet
Zone 3 Volume (100-year - Zones 1 & 2) =	1.738	acre-feet
Total Detention Basin Volume =	3.171	acre-feet
Initial Surcharge Volume (ISV) =	user	ft ³
Initial Surcharge Depth (ISD) =	user	ft
Total Available Detention Depth (H_{total}) =	user	ft
Depth of Trickle Channel (H_{TC}) =	user	ft
Slope of Trickle Channel (S_{TC}) =	user	ft/ft
Slopes of Main Basin Sides (S_{main}) =	user	H:V
Basin Length-to-Width Ratio ($R_{L/W}$) =	user	

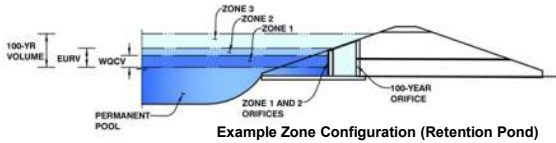
Optional User Overrides

DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.06 (July 2022)

Project: Falcon Reserve Filing No. 1

Basin ID: Pond 3



Example Zone Configuration (Retention Pond)

	Estimated Stage (ft)	Estimated Volume (ac-ft)	Outlet Type
Zone 1 (WQCV)	2.58	0.602	Orifice Plate
Zone 2 (EURV)	3.47	0.830	Orifice Plate
Zone 3 (100-year)	5.14	1.738	Weir&Pipe (Restrict)
Total (all zones)		3.171	

User Input: Orifice at Underdrain Outlet (typically used to drain WQCV in a Filtration BMP)

Underdrain Orifice Invert Depth = ft (distance below the filtration media surface)
Underdrain Orifice Diameter = inches

Calculated Parameters for Underdrain
Underdrain Orifice Area = ft²
Underdrain Orifice Centroid = feet

User Input: Orifice Plate with one or more orifices or Elliptical Slot Weir (typically used to drain WQCV and/or EURV in a sedimentation BMP)

Centroid of Lowest Orifice = ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Orifice Plate = ft (relative to basin bottom at Stage = 0 ft)
Orifice Plate: Orifice Vertical Spacing = inches
Orifice Plate: Orifice Area per Row = sq. inches

Calculated Parameters for Plate
WQ Orifice Area per Row = ft²
Elliptical Half-Width = feet
Elliptical Slot Centroid = feet
Elliptical Slot Area = ft²

User Input: Stage and Total Area of Each Orifice Row (numbered from lowest to highest)

	Row 1 (required)	Row 2 (optional)	Row 3 (optional)	Row 4 (optional)	Row 5 (optional)	Row 6 (optional)	Row 7 (optional)	Row 8 (optional)
Stage of Orifice Centroid (ft)	0.00	1.16	2.31					
Orifice Area (sq. inches)	2.50	2.10	2.00					

	Row 9 (optional)	Row 10 (optional)	Row 11 (optional)	Row 12 (optional)	Row 13 (optional)	Row 14 (optional)	Row 15 (optional)	Row 16 (optional)
Stage of Orifice Centroid (ft)								
Orifice Area (sq. inches)								

User Input: Vertical Orifice (Circular or Rectangular)

Invert of Vertical Orifice = ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Vertical Orifice = ft (relative to basin bottom at Stage = 0 ft)
Vertical Orifice Diameter = inches

Calculated Parameters for Vertical Orifice
Vertical Orifice Area = ft²
Vertical Orifice Centroid = feet

User Input: Overflow Weir (Dropbox with Flat or Sloped Grate and Outlet Pipe OR Rectangular/Trapezoidal Weir and No Outlet Pipe)

Overflow Weir Front Edge Height, H_o = ft (relative to basin bottom at Stage = 0 ft)
Overflow Weir Front Edge Length = feet
Overflow Weir Grate Slope = H:V
Horiz. Length of Weir Sides = feet
Overflow Grate Type =
Debris Clogging % = %

Calculated Parameters for Overflow Weir
Height of Grate Upper Edge, H_g = feet
Overflow Weir Slope Length = feet
Grate Open Area / 100-yr Orifice Area =
Overflow Grate Open Area w/o Debris = ft²
Overflow Grate Open Area w/ Debris = ft²

User Input: Outlet Pipe w/ Flow Restriction Plate (Circular Orifice, Restrictor Plate, or Rectangular Orifice)

Depth to Invert of Outlet Pipe = ft (distance below basin bottom at Stage = 0 ft)
Outlet Pipe Diameter = inches
Restrictor Plate Height Above Pipe Invert = inches

Calculated Parameters for Outlet Pipe w/ Flow Restriction Plate
Outlet Orifice Area = ft²
Outlet Orifice Centroid = feet
Half-Central Angle of Restrictor Plate on Pipe = radians

User Input: Emergency Spillway (Rectangular or Trapezoidal)

Spillway Invert Stage = ft (relative to basin bottom at Stage = 0 ft)
Spillway Crest Length = feet
Spillway End Slopes = H:V
Freeboard above Max Water Surface = feet

Calculated Parameters for Spillway
Spillway Design Flow Depth = feet
Stage at Top of Freeboard = feet
Basin Area at Top of Freeboard = acres
Basin Volume at Top of Freeboard = acre-ft

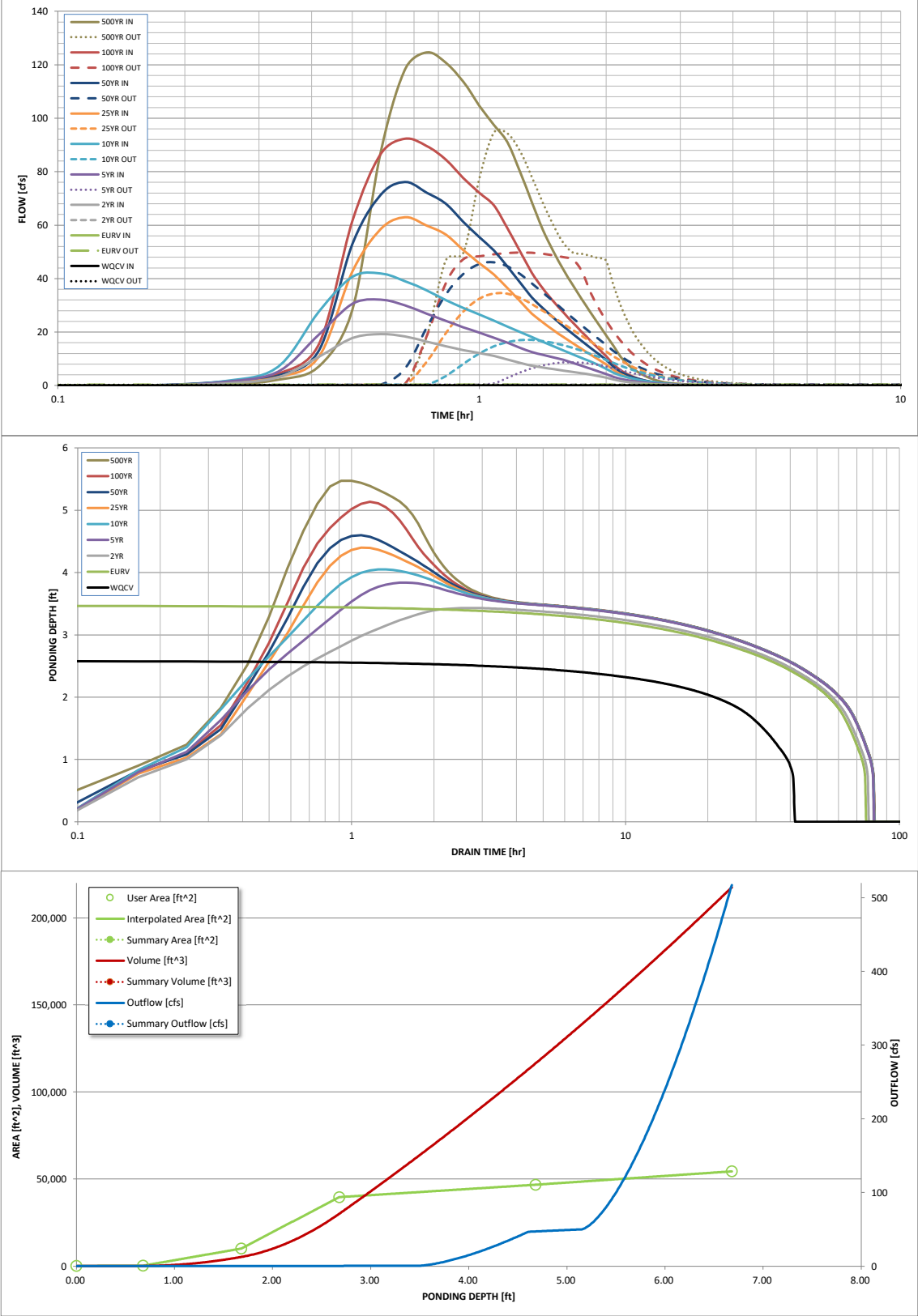
Routed Hydrograph Results

The user can override the default CUHP hydrographs and runoff volumes by entering new values in the Inflow Hydrographs table (Columns W through AF).

	WQCV	EURV	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	500 Year
Design Storm Return Period	N/A	N/A	1.19	1.50	1.75	2.00	2.25	2.52	3.14
One-Hour Rainfall Depth (in)	N/A	N/A	1.463	2.410	3.289	4.631	5.637	6.987	9.582
CUHP Runoff Volume (acre-ft)	0.602	1.433	1.463	2.410	3.289	4.631	5.637	6.987	9.582
Inflow Hydrograph Volume (acre-ft)	N/A	N/A	1.463	2.410	3.289	4.631	5.637	6.987	9.582
CUHP Predevelopment Peak Q (cfs)	N/A	N/A	5.8	16.2	24.6	43.4	54.4	69.5	96.8
OPTIONAL Override Predevelopment Peak Q (cfs)	N/A	N/A							
Predevelopment Unit Peak Flow, q (cfs/acre)	N/A	N/A	0.12	0.33	0.50	0.88	1.10	1.41	1.96
Peak Inflow Q (cfs)	N/A	N/A	19.2	32.1	42.0	63.0	76.2	92.3	124.6
Peak Outflow Q (cfs)	0.3	0.3	0.3	8.7	17.1	34.5	46.1	49.8	94.6
Ratio Peak Outflow to Predevelopment Q	N/A	N/A	N/A	0.5	0.7	0.8	0.8	0.7	1.0
Structure Controlling Flow	Plate	Plate	Plate	Overflow Weir 1	Overflow Weir 1	Overflow Weir 1	Outlet Plate 1	Outlet Plate 1	Spillway
Max Velocity through Grate 1 (fps)	N/A	N/A	N/A	0.3	0.7	1.4	1.9	2.0	2.1
Max Velocity through Grate 2 (fps)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time to Drain 97% of Inflow Volume (hours)	39	70	71	72	70	67	65	62	57
Time to Drain 99% of Inflow Volume (hours)	40	73	75	77	76	75	74	73	70
Maximum Ponding Depth (ft)	2.58	3.47	3.43	3.84	4.05	4.40	4.60	5.14	5.48
Area at Maximum Ponding Depth (acres)	0.84	0.97	0.97	1.00	1.02	1.05	1.07	1.11	1.14
Maximum Volume Stored (acre-ft)	0.603	1.434	1.395	1.800	2.012	2.364	2.576	3.163	3.546

DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.06 (July 2022)



S-A-V-D Chart Axis Override

minimum bound			
maximum bound			