

El Paso County MS4 Post Construction Detention / Water Quality Facility Documentation Form

This document **must be completed and submitted** with required attachments to the County for projects requiring a detention and/or a water quality facility. A separate completed form must be submitted for each facility.

Project name: Waterbury Filing No. 1 & 2	
Owner name: 4-Way Ranch Joint Ventures	
Location Address:	
Stapleton Drive and Bandernero Drive Intersection Falc	on, CO
Latitude and Longitude:	
Lat: 38.969011, Long: -104.570362	
Assessor's Parcel #: 4200000417 Section: 28	Township: 12 Range: 64
Expected Completion date: Winter 2022 Project acreage: 61.88	0.99?
Design Engineer Email Address: quentin.armijo@tnesinc.com	
To ensure compliance with C.R.S. 37-92-602(8), the completed Store Detention and Infiltration Design Data Sheet must be attached . The https://maperture.digitaldataservices.com/gvh/?viewer=cswdif# (c	form can be found here:
List all permanent water quality control measure(s) (EDBs, rain gard	ens, etc):
EDB POND 1	
For all projects for which the constrained redevelopment sites standards. NA NA	dard is applied, provide an explanation of why it is
Attach Operations and Maintenance (O&M) Plan describing the oplong-term observation, maintenance, and operation of control measurable maintenance activities. If multiple, different water quality control new M Plan must be provided for each facility.	sure(s), including routine inspection frequencies and
Attach Private Detention Basin / Stormwater Quality Best Manage	ment Practice Maintenance Agreement and
Easement addressing maintenance of BMPs that shall be binding on	all subsequent owners of the permanent BMPs.
Attachments:	Review Engineer
Stormwater Detention and Infiltration Design Data Sheet O & M Plan	EPC Project File No. PUDSP-21-005
Maintenance and Access Agreement	

Workhook Protected

Worksheet Protected

Stormwater Facility Name: Waterbury Filing No. 1 & 2 EDB Pond 1 D8 8

Facility Location & Jurisdiction: Stapleton Dr. & Bandernero Dr Intersection

User Input: Watershed Characteristics

Watershed Slope =	0.019	ft/ft
Watershed Length =	1250	ft
Watershed Area =	22.34	acres
Watershed Imperviousness =	51.9%	percent
Percentage Hydrologic Soil Group A =	100.0%	percent
Percentage Hydrologic Soil Group B =	0.0%	percent
Percentage Hydrologic Soil Groups C/D =	0.0%	percent
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Location for 1-hr Rainfall Depths (use dropdown):

User Input

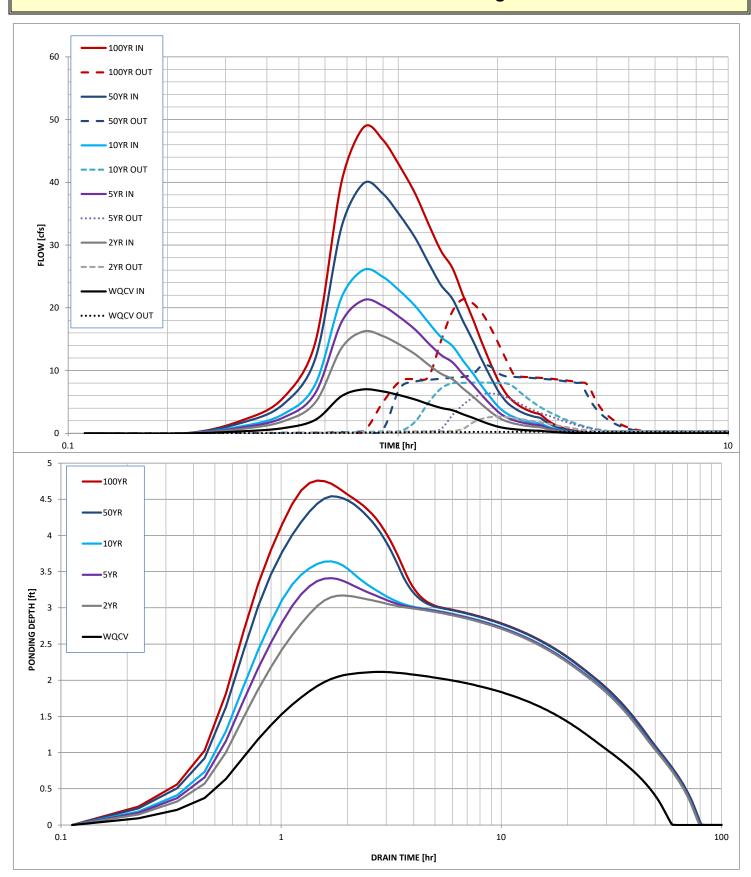
WQCV Treatment Method = Extended Detention

User Defined	User Defined	User Defined	User Defined
Stage [ft]	Area [ft^2]	Stage [ft]	Discharge [cfs]
0.00	100	0.00	0.00
0.25	3,176	0.25	0.04
0.50	6,253	0.50	0.06
0.75	8,372	0.75	0.07
1.00	10,492	1.00	0.09
1.25	12,612	1.25	0.14
1.50	14,732	1.50	0.17
1.75	16,852	1.75	0.19
2.00	18,972	2.00	0.21
2.25	21,092	2.25	0.27
2.50	23,212	2.50	0.30
2.75	25,435	2.75	0.33
3.00	27,658	3.00	0.36
3.25	29,881	3.25	3.70
3.50	32,105	3.50	7.91
3.75	34,328	3.75	8.21
4.00	36,551	4.00	8.50
4.25	38,744	4.25	8.78
4.50	40,997	4.50	9.06
4.75	43,176	4.75	20.80
5.00	45,355	5.00	42.67
5.25	47,534	5.25	71.79
5.50	49,712	5.50	107.27
5.75	51,891	5.75	148.67
6.00	54,070	6.00	195.73
6.25	56,249	6.25	248.30
6.50	58,428	6.50	306.29

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

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Design Storm Return Period =	WQCV	2 Year	5 Year	10 Year	50 Year	100 Year	
One-Hour Rainfall Depth =	0.53	1.19	1.50	1.75	2.25	2.52	in
Calculated Runoff Volume =	0.394	0.923	1.212	1.490	2.292	2.813	acre-ft
OPTIONAL Override Runoff Volume =							acre-ft
Inflow Hydrograph Volume =	0.564	1.322	1.737	2.136	3.285	4.033	acre-ft
Time to Drain 97% of Inflow Volume =	51.7	66.5	64.4	62.4	57.5	54.4	hours
Time to Drain 99% of Inflow Volume =	55.2	72.6	71.7	70.9	69.3	68.0	hours
Maximum Ponding Depth =	2.11	3.17	3.41	3.64	4.54	4.76	ft
Maximum Ponded Area =	0.46	0.67	0.72	0.76	0.95	0.99	acres
Maximum Volume Stored =	0.520	1.112	1.281	1.450	2.219	2.434	acre-ft





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Project name: Waterbury Filing No. 1 & 2	
Owner name: 4-Way Ranch Joint Ventures	
Location Address:	
Stapleton Drive and Bandernero Drive Intersection Falco	on, CO
Latitude and Longitude:	
Lat: 38.971229, Long: -104.563163	
Assessor's Parcel #: 4200000417 Section: 28	Township: 12 Range: 64
Expected Completion date: Winter 2022 (21.06 Contrib. Ac.)	0.64?
Project acreage: 61.88 Design Ponding Acres: 1.72	Design Storm: 100-Y
Design Engineer Email Address: quentin.armijo@tnesinc.com	
To ensure compliance with C.R.S. 37-92-602(8), the completed Storm Detention and Infiltration Design Data Sheet must be attached . The https://maperture.digitaldataservices.com/gvh/?viewer=cswdif# (cli	form can be found here:
List all permanent water quality control measure(s) (EDBs, rain garde	ens, etc):
EDB POND 2	
For all projects for which the constrained redevelopment sites stands not practicable to meet the full design standards.	ard is applied, provide an explanation of why it is
Attach Operations and Maintenance (O&M) Plan describing the operation of control measurements. If multiple, different water quality control measurements activities. If multiple, different water quality control measurements are provided for each facility.	ure(s), including routine inspection frequencies and
Attach Private Detention Basin / Stormwater Quality Best Manager	nent Practice Maintenance Agreement and
Easement addressing maintenance of BMPs that shall be binding on	all subsequent owners of the permanent BMPs.
Attachments:	Review Engineer
Stormwater Detention and Infiltration Design Data Sheet O & M Plan	EPC Project File No. PUDSP-21-005
Maintenance and Access Agreement	

Workhook Protected

Worksheet Protected

Stormwater Facility Name: Waterbury Filing No. 1 & 2 EDB Pond 2 DP 18

Facility Location & Jurisdiction: Stapleton Dr. & Bandernero Dr Intersection

21.06?

User Input: Watershed Characteristics

Watershed Slope =	0.014	ft/ft
Watershed Length =	1425	ft
Watershed Area =	21.93	acres
Watershed Imperviousness =	27.2%	percent
Percentage Hydrologic Soil Group A =	100.0%	percent
Percentage Hydrologic Soil Group B =	0.0%	percent
Percentage Hydrologic Soil Groups C/D =	0.0%	percent

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

User Input

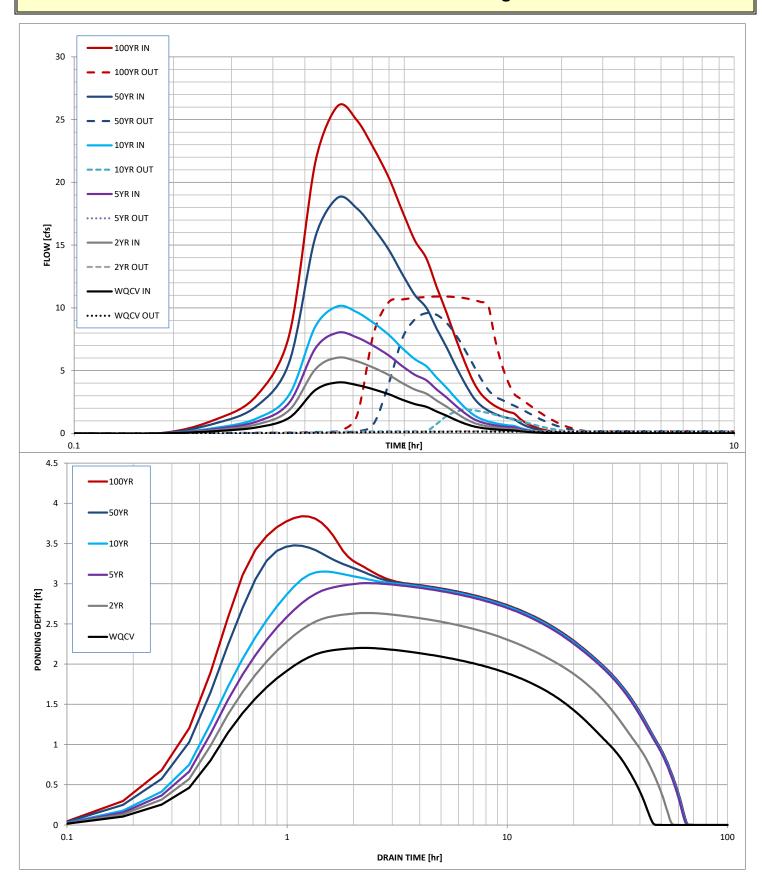
WQCV Treatment Method = Extended Detention

User Defined	User Defined	User Defined	User Defined
Stage [ft]	Area [ft^2]	Stage [ft]	Discharge [cfs]
0.00	100	0.00	0.00
0.25	942	0.25	0.02
0.50	1,784	0.50	0.03
0.75	2,626	0.75	0.04
1.00	3,468	1.00	0.04
1.25	5,034	1.25	0.07
1.50	6,600	1.50	0.09
1.75	8,166	1.75	0.10
2.00	9,732	2.00	0.11
2.25	11,297	2.25	0.14
2.50	12,863	2.50	0.16
2.75	14,429	2.75	0.17
3.00	15,995	3.00	0.18
3.25	19,602	3.25	3.05
3.50	23,209	3.50	10.28
3.75	26,815	3.75	10.76
4.00	30,422	4.00	11.17
4.25	34,029	4.25	11.57
4.50	37,636	4.50	11.96
4.75	41,243	4.75	12.33
5.00	44,850	5.00	12.70
5.25	48,650	5.25	20.77
5.50	52,450	5.50	35.88
5.75	56,251	5.75	56.20
6.00	60,051	6.00	81.25
6.25	63,851	6.25	110.80
6.50	67,652	6.50	144.75
6.75	71,452	6.75	183.06
7.00	75,252	7.00	225.73

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Routed Hydrograph Results

	Routeu Hyure	grapii kesuits					_
Design Storm Return Period =	WQCV	2 Year	5 Year	10 Year	50 Year	100 Year	
One-Hour Rainfall Depth =	0.53	1.19	1.50	1.75	2.25	2.52	in
Calculated Runoff Volume =	0.261	0.389	0.519	0.657	1.228	1.712	acre-ft
OPTIONAL Override Runoff Volume =							acre-ft
Inflow Hydrograph Volume =	0.260	0.389	0.519	0.657	1.227	1.711	acre-ft
Time to Drain 97% of Inflow Volume =	40.0	48.2	55.6	54.6	49.6	45.9	hours
Time to Drain 99% of Inflow Volume =	42.6	51.7	60.0	59.6	57.5	55.8	hours
Maximum Ponding Depth =	2.20	2.64	3.01	3.15	3.48	3.84	ft
Maximum Ponded Area =	0.25	0.31	0.37	0.41	0.52	0.64	acres
Maximum Volume Stored =	0.239	0.362	0.488	0.544	0.699	0.908	acre-ft





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Project name: Waterbury Filing No. 1 & 2	
Owner name: 4-Way Ranch Joint Ventures	
Location Address:	
Stapleton Drive and Bandernero Drive Intersection Fal	con, CO
Latitude and Longitude:	·
Lat:38.972831, Long:-104.566	
Assessor's Parcel #: 4200000417 Section: 28	Township: 12 Range: 64
Expected Completion date: Winter 2022 (82.44 Contrib. Ac.)	
Project acreage: 61.88 Design Ponding Acres: 2	Design Storm: 100-Y
Design Engineer Email Address: quentin.armijo@tnesinc.com	า
To ensure compliance with C.R.S. 37-92-602(8), the completed Sto Detention and Infiltration Design Data Sheet must be attached . The https://maperture.digitaldataservices.com/gvh/?viewer=cswdif#	e form can be found here:
List all permanent water quality control measure(s) (EDBs, rain gar	dens, etc):
EDB POND 3	
For all projects for which the constrained redevelopment sites star	ndard is applied, provide an explanation of why it is
not practicable to meet the full design standards.	
Attach Operations and Maintenance (OSM) Plan describing the o	poration and maintenance procedures that ensure the
Attach Operations and Maintenance (O&M) Plan describing the olong-term observation, maintenance, and operation of control me	
maintenance activities. If multiple, different water quality control	
& M Plan must be provided for each facility.	
Attach Private Detention Basin / Stormwater Quality Best Manag	ement Practice Maintenance Agreement and
Easement addressing maintenance of BMPs that shall be binding of	_
Attachments:	Review Engineer
Stormwater Detention and Infiltration Design Data Sheet O & M Plan	EPC Project File No. PUDSP-21-005
Maintenance and Access Agreement	

Workhook Protected

Worksheet Protected

Stormwater Facility Name: Waterbury Filing No. 1 & 2 EDB Pond 3 DP 29

Facility Location & Jurisdiction: Stapleton Dr. & Bandernero Dr Intersection

User Input: Watershed Characteristics

Watershed Slope =	0.022	ft/ft
Watershed Length =	1900	ft
Watershed Area =	82.44	acres
Watershed Imperviousness =	49.0%	percent
Percentage Hydrologic Soil Group A =	100.0%	percent
Percentage Hydrologic Soil Group B =	0.0%	percent
Percentage Hydrologic Soil Groups C/D =	0.0%	percent
		•

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

User Input

WQCV Treatment Method = Extended Detention

User Defined	User Defined	User Defined	User Defined
Stage [ft]	Area [ft^2]	Stage [ft]	Discharge [cfs]
0.00	100	0.00	0.00
0.25	2,785	0.25	0.10
0.50	5,470	0.50	0.14
0.75	8,155	0.75	0.18
1.00	10,840	1.00	0.20
1.25	13,525	1.25	0.23
1.50	16,210	1.50	0.25
1.75	18,895	1.75	0.37
2.00	21,580	2.00	0.43
2.25	26,334	2.25	0.48
2.50	31,088	2.50	0.53
2.75	35,842	2.75	0.57
3.00	40,596	3.00	0.60
3.25	45,530	3.25	0.73
3.50	50,105	3.50	0.81
3.75	54,895	3.75	0.87
4.00	59,613	4.00	0.93
4.25	62,301	4.25	0.98
4.50	64,989	4.50	1.03
4.75	67,677	4.75	4.39
5.00	70,365	5.00	14.71
5.25	73,504	5.25	28.91
5.50	75,742	5.50	46.13
5.75	78,430	5.75	60.71
6.00	81,118	6.00	62.35
6.25	82,113	6.25	74.47
6.50	83,503	6.50	111.77
6.75	84,696	6.75	163.81
7.00	85,888	7.00	227.74
7.25	87,081	7.25	302.17
7.50	88,274	7.50	386.27
7.75	89,466	7.75	479.48
8.00	90,659	8.00	581.41
			_

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

	Routeu Hyurc	grapii kesuits					_
Design Storm Return Period =	WQCV	2 Year	5 Year	10 Year	50 Year	100 Year	
One-Hour Rainfall Depth =	0.53	1.19	1.50	1.75	2.25	2.52	in
Calculated Runoff Volume =	1.398	3.156	4.151	5.117	8.003	9.913	acre-ft
OPTIONAL Override Runoff Volume =							acre-ft
Inflow Hydrograph Volume =	1.397	3.155	4.151	5.111	7.999	9.910	acre-ft
Time to Drain 97% of Inflow Volume =	41.7	61.8	62.5	61.0	56.7	54.1	hours
Time to Drain 99% of Inflow Volume =	44.2	66.4	68.1	67.6	65.8	64.7	hours
Maximum Ponding Depth =	3.12	4.47	4.88	5.15	5.77	6.26	ft
Maximum Ponded Area =	0.98	1.48	1.58	1.66	1.80	1.89	acres
Maximum Volume Stored =	1.316	3.019	3.647	4.089	5.164	6.075	acre-ft

