

West Coyote Diversion - 2022

10-year, 24-hour event

Jim Mattern

Revision: PR-11 Submitted: 10-14-2022
--

General Information

Storm Information:

Storm Type:	NRCS Type II
Design Storm:	10 yr - 24 hr
Rainfall Depth:	1.400 inches

Structure Networking:

Type	Stru #	(flows into)	Stru #	Musk. K (hrs)	Musk. X	Description
Channel	#1	==>	End	0.000	0.000	West Coyote Diversion

#1
Chan'l

Structure Summary:

	Immediate Contributing Area (ac)	Total Contributing Area (ac)	Peak Discharge (cfs)	Total Runoff Volume (ac-ft)
#1	16.800	16.800	6.90	0.50

Structure Detail:

Structure #1 (Erodible Channel)

West Coyote Diversion

Trapezoidal Erodible Channel Inputs:

Material: Graded silts to cobbles when colloidal

Bottom Width (ft)	Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Manning's n	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
5.00	2.0:1	2.0:1	3.0	0.0300	1.00			5.5

Erodible Channel Results:

	w/o Freeboard	w/ Freeboard
Design Discharge:	6.90 cfs	
Depth:	0.33 ft	1.33 ft
Top Width:	6.31 ft	10.31 ft
Velocity:	3.73 fps	
X-Section Area:	1.85 sq ft	
Hydraulic Radius:	0.286 ft	
Froude Number:	1.22	

Subwatershed Hydrology Detail:

Stru #	SWS #	SWS Area (ac)	Time of Conc (hrs)	Musk K (hrs)	Musk X	Curve Number	UHS	Peak Discharge (cfs)	Runoff Volume (ac-ft)
#1	1	16.800	0.111	0.000	0.000	84.000	F	6.90	0.497
Σ		16.800						6.90	0.497

Subwatershed Time of Concentration Details:

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#1	1	6. Grassed waterway	4.20	20.00	476.00	3.070	0.043
		8. Large gullies, diversions, and low flowing streams	3.32	45.00	1,355.00	5.460	0.068
#1	1	Time of Concentration:					0.111