

Hydrograph Analysis

A (mi²)
 A (ac) 1536

Time (hr)	(Given) Q (cfs)	SL-B Q _b (cfs)	SL-B DRH (cfs)
0	102.0	102.0	--
2	100.0	100.0	--
4	98.0	98.0	0.0
6	220.0	94.2	125.8
8	512.0	90.4	421.6
10	630.0	86.6	543.4
12	460.0	82.8	377.2
14	330.0	79.0	251.0
16	210.0	75.2	134.8
18	150.0	71.4	78.6
20	105.0	67.6	37.4
22	75.0	63.8	11.2
24	60.0	60.0	0.0
26	54.0	54.0	--
28	48.5	48.5	--
30	43.5	43.5	--

ΣDRH (cfs) 1981.0

Vd (cfs-hr) 3962.0

Vd (ac-ft)

rd (in)

Hydrograph Analysis

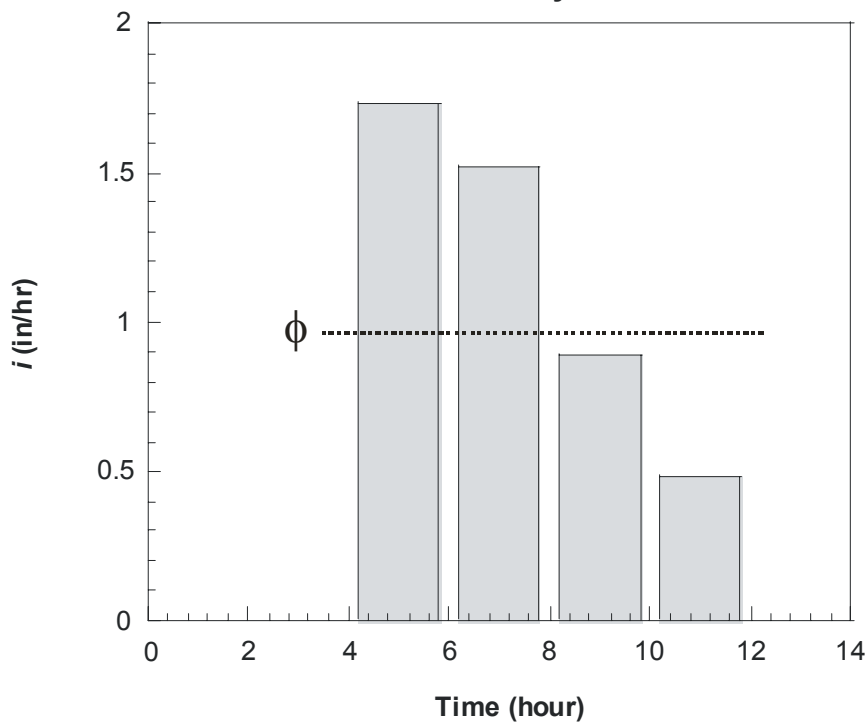
Time (hr)	P (in)	i (in/hr)	i_e (in/hr)	P_e (in)
0	--	--	--	--
2	--	--	--	--
4	3.46	1.73	0.75	1.49
6	3.04	1.52	0.54	1.07
8	1.78	0.89	0.00	0.00
10	0.96	0.48	0.00	0.00
12	--	--	--	--
14	--	--	--	--

ϕ (in/hr) ΣP_e (in)

ΣP (in)

C

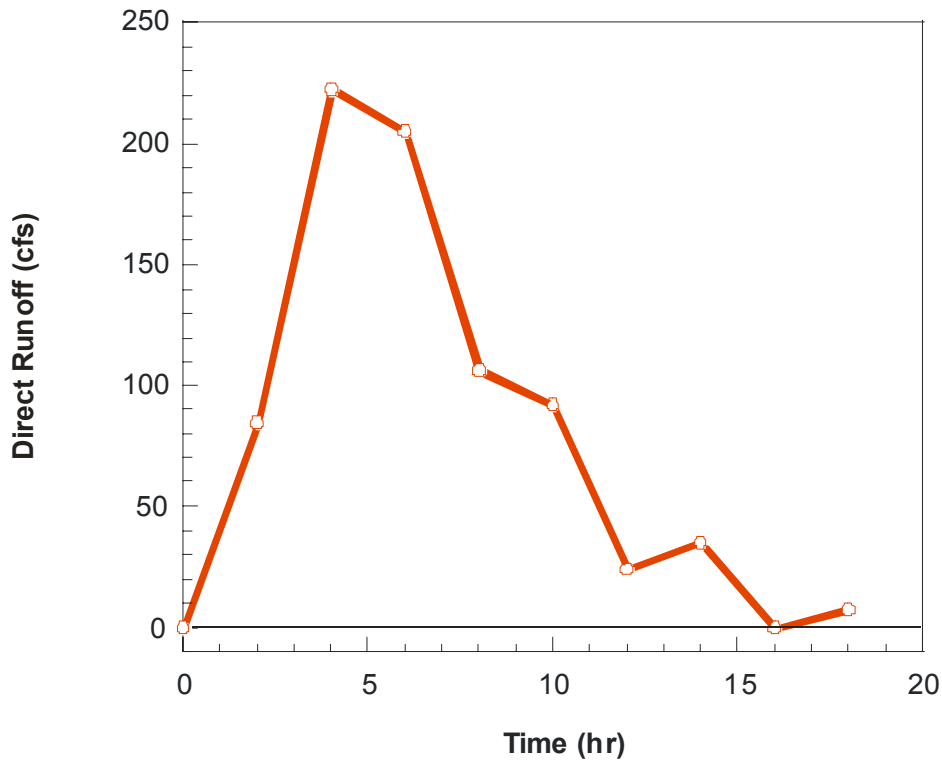
Intensity



UH Derivation (Deconvolution)

Time (hr)	2-hr UH (cfs)	DRH (cfs)	1.49xUH DRH ₂ (cfs)	1.07xUH DRH ₃ (cfs)		
0	u_0					
2	u_1					
4	u_2	0.0	$= 1.49u_0$		$u_0 =$	0.0
6	u_3	125.8	$= 1.49u_1$	$+ 1.07u_0$	$u_1 =$	84.4
8	u_4	421.6	$= 1.49u_2$	$+ 1.07u_1$	$u_2 =$	222.3
10	u_5	543.4	$= 1.49u_3$	$+ 1.07u_2$	$u_3 =$	205.0
12	u_6	377.2	$= 1.49u_4$	$+ 1.07u_3$	$u_4 =$	105.9
14	u_7	251.0	$= 1.49u_5$	$+ 1.07u_4$	$u_5 =$	92.4
16	u_8	134.8	$= 1.49u_6$	$+ 1.07u_5$	$u_6 =$	24.1
18	u_9	78.6	$= 1.49u_7$	$+ 1.07u_6$	$u_7 =$	35.4
20		37.4	$= 1.49u_8$	$+ 1.07u_7$	$u_8 =$	-0.3
22		11.2	$= 1.49u_9$	$+ 1.07u_8$	$u_9 =$	7.8
24		0.0		$+ 1.07u_9$		
26						
28						
30						

2-hour Unit Hydrograph



UH Derivation (Single-Event Method)

Time (hr)	DRH (cfs)	4-hr UH (cfs)
0	0.0	0.0
2	125.8	49.1
4	421.6	164.7
6	543.4	212.3
8	377.2	147.3
10	251.0	98.0
12	134.8	52.7
14	78.6	30.7
16	37.4	14.6
18	11.2	4.4
20	0.0	0.0

$\div 2.56 =$

Time (hr)	Pe (in)	Estimated 4-hr UH Pe (in)	TRUE 4-hr UH Pe (in)
0	0.73	0.29	0.50
2	1.83	0.71	0.50
4	0.00		
6	0.00		
8	0.00		

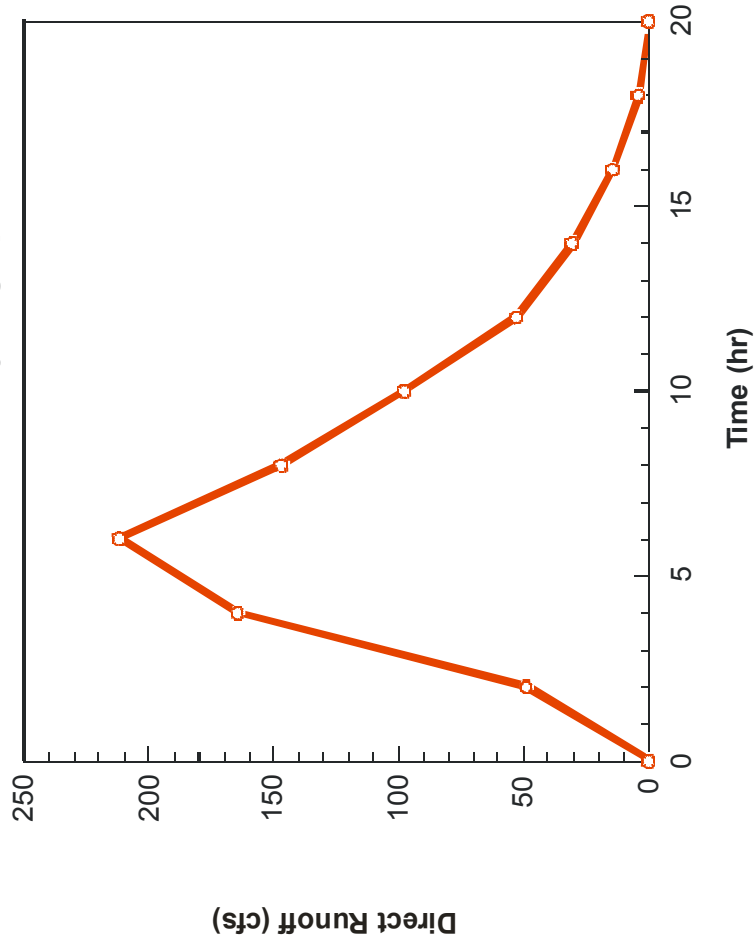
$\div 2.56 =$

2.56

1.00

1.00

4-hour Unit Hydrograph



$t_r = 4 \text{ hr}$