UNSTEADY FLOW RUNS

[symbols: t=time; Q=discharge; h=approach flow depth; d_s=maximum scour depth around the spur dike nose at a given time t; t_b=hydrograph base-time; θ=spur dike orientation angle; φ=spur dike degree of permeability]

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#1 t_b=15 min; θ=60°; φ=0%	0	15	0.137	0
	90	17	0.142	5
	225	24.5	0.158	11
	450	50	0.202	60
	675	24.5	0.158	80
	900	15	0.137	80

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#2 t_b=15 min; θ=90°; φ=0%	0	15	0.137	0
	90	17	0.142	6
	225	24.5	0.158	13
	450	50	0.202	63
	675	24.5	0.158	82
	900	15	0.137	82

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#3 t_b=15 min; θ=120°; φ=0%	0	15	0.137	0
	90	17	0.142	4
	225	24.5	0.158	10
	450	50	0.202	56
	675	24.5	0.158	76
	900	15	0.137	76

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#4 t_b=30 min; θ=60°; φ=0%	0	15	0.137	0
	180	17	0.142	6
	450	24.5	0.158	17
	900	50	0.202	74
	1350	24.5	0.158	94
	1800	15	0.137	94

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#5 t_b=30 min; θ=90°; φ=0%	0	15	0.137	0
	180	17	0.142	7
	450	24.5	0.158	19
	900	50	0.202	78
	1350	24.5	0.158	97
	1800	15	0.137	97

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#6 t_b=30 min; θ=120°; φ=0%	0	15	0.137	0
	180	17	0.142	5
	450	24.5	0.158	15
	900	50	0.202	71
	1350	24.5	0.158	90
	1800	15	0.137	90

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#7 t_b=60 min; θ=60°; φ=0%	0	15	0.137	0
	360	17	0.142	8
	900	24.5	0.158	25
	1800	50	0.202	96
	2700	24.5	0.158	110
	3600	15	0.137	110

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#8 t_b=60 min; θ=90°; φ=0%	0	15	0.137	0
	360	17	0.142	9
	900	24.5	0.158	30
	1800	50	0.202	101
	2700	24.5	0.158	114
	3600	15	0.137	114

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#9 t_b=60 min; θ=120°; φ=0%	0	15	0.137	0
	360	17	0.142	6
	900	24.5	0.158	21
	1800	50	0.202	92
	2700	24.5	0.158	107
	3600	15	0.137	107

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#10 t_b=15 min; θ=60°; φ=33%	0	15	0.137	0
	90	17	0.142	2
	225	24.5	0.158	7
	450	50	0.202	28
	675	24.5	0.158	39
	900	15	0.137	39

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#11 t_b=15 min; θ=90°; φ=33%	0	15	0.137	0
	90	17	0.142	2
	225	24.5	0.158	6
	450	50	0.202	27
	675	24.5	0.158	36
	900	15	0.137	36

RUN#12 t_b=15 min; θ=120°; φ=33%	t [s]	Q [L/s]	h [m]	d_s [mm]
	0	15	0.137	0
	90	17	0.142	1
	225	24.5	0.158	5
	450	50	0.202	25
	675	24.5	0.158	35
	900	15	0.137	35

RUN#13 t_b=30 min; θ=60°; φ=33%	t [s]	Q [L/s]	h [m]	d_s [mm]
	0	15	0.137	0
	180	17	0.142	3
	450	24.5	0.158	8
	900	50	0.202	34
	1350	24.5	0.158	45
	1800	15	0.137	45

RUN#14 t_b=30 min; θ=90°; φ=33%	t [s]	Q [L/s]	h [m]	d_s [mm]
	0	15	0.137	0
	180	17	0.142	3
	450	24.5	0.158	7
	900	50	0.202	32
	1350	24.5	0.158	43
	1800	15	0.137	43

RUN#15 t_b=30 min; θ=120°; φ=33%	t [s]	Q [L/s]	h [m]	d_s [mm]
	0	15	0.137	0
	180	17	0.142	2
	450	24.5	0.158	6
	900	50	0.202	31
	1350	24.5	0.158	39
	1800	15	0.137	39

RUN#16 t_b=60 min; θ=60°; φ=33%	t [s]	Q [L/s]	h [m]	d_s [mm]
	0	15	0.137	0
	360	17	0.142	3
	900	24.5	0.158	10
	1800	50	0.202	46
	2700	24.5	0.158	62
	3600	15	0.137	62

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#17 t_b=60 min; θ=90°; φ=33%	0	15	0.137	0
	360	17	0.142	3
	900	24.5	0.158	9
	1800	50	0.202	42
	2700	24.5	0.158	58
	3600	15	0.137	58

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#18 t_b=60 min; θ=120°; φ=33%	0	15	0.137	0
	360	17	0.142	3
	900	24.5	0.158	7
	1800	50	0.202	40
	2700	24.5	0.158	53
	3600	15	0.137	53

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#19 t_b=15 min; θ=60°; φ=66%	0	15	0.137	0
	90	17	0.142	0.5
	225	24.5	0.158	1.5
	450	50	0.202	8
	675	24.5	0.158	12
	900	15	0.137	12

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#20 t_b=15 min; θ=90°; φ=66%	0	15	0.137	0
	90	17	0.142	0.5
	225	24.5	0.158	1
	450	50	0.202	7
	675	24.5	0.158	11
	900	15	0.137	11

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#21 t_b=15 min; θ=120°; φ=66%	0	15	0.137	0
	90	17	0.142	0.5
	225	24.5	0.158	1
	450	50	0.202	6
	675	24.5	0.158	9
	900	15	0.137	9

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#22 t_b=30 min; θ=60°; φ=66%	0	15	0.137	0
	180	17	0.142	1
	450	24.5	0.158	2
	900	50	0.202	9
	1350	24.5	0.158	13
	1800	15	0.137	13

RUN#23 t_b=30 min; θ=90°; φ=66%	t [s]	Q [L/s]	h [m]	d_s [mm]
	0	15	0.137	0
	180	17	0.142	1
	450	24.5	0.158	2
	900	50	0.202	8
	1350	24.5	0.158	12
	1800	15	0.137	12

RUN#24 t_b=30 min; θ=120°; φ=66%	t [s]	Q [L/s]	h [m]	d_s [mm]
	0	15	0.137	0
	180	17	0.142	1
	450	24.5	0.158	2
	900	50	0.202	7
	1350	24.5	0.158	10
	1800	15	0.137	10

RUN#25 t_b=60 min; θ=60°; φ=66%	t [s]	Q [L/s]	h [m]	d_s [mm]
	0	15	0.137	0
	360	17	0.142	1
	900	24.5	0.158	3
	1800	50	0.202	10
	2700	24.5	0.158	14
	3600	15	0.137	14

RUN#26 t_b=60 min; θ=90°; φ=66%	t [s]	Q [L/s]	h [m]	d_s [mm]
	0	15	0.137	0
	360	17	0.142	1
	900	24.5	0.158	2
	1800	50	0.202	9
	2700	24.5	0.158	13
	3600	15	0.137	13

RUN#27 t_b=60 min; θ=120°; φ=66%	t [s]	Q [L/s]	h [m]	d_s [mm]
	0	15	0.137	0
	360	17	0.142	1
	900	24.5	0.158	2
	1800	50	0.202	9
	2700	24.5	0.158	12
	3600	15	0.137	12

STEADY FLOW RUNS

[symbols: t=time; Q=discharge; h=approach flow depth; d_s=maximum scour depth around the spur dike nose at a given time t; t_b=hydrograph base-time; θ=spur dike orientation angle; φ=spur dike degree of permeability]

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#1 θ=60°; φ=0%	0	50	0.202	0
	450			106
	900			116
	1800			136
	2700			152
	3600			160

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#2 θ=90°; φ=0%	0	50	0.202	0
	450			112
	900			120
	1800			141
	2700			160
	3600			169

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#3 θ=120°; φ=0%	0	50	0.202	0
	450			88
	900			101
	1800			124
	2700			144
	3600			151

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#4 θ=60°; φ=33%	0	50	0.202	0
	450			49
	900			59
	1800			72
	2700			85
	3600			95

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#5 θ=90°; φ=33%	0	50	0.202	0
	450			58
	900			70
	1800			79
	2700			90
	3600			102

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#6 θ=120°; φ=33%	0	50	0.202	0
	450			47
	900			55
	1800			66
	2700			79
	3600			86

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#7 θ=60°; φ=66%	0	50	0.202	0
	450			9
	900			12
	1800			14
	2700			15
	3600			16

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#8 θ=90°; φ=66%	0	50	0.202	0
	450			10
	900			12
	1800			14
	2700			16
	3600			17

	t [s]	Q [L/s]	h [m]	d_s [mm]
RUN#9 θ=120°; φ=66%	0	50	0.202	0
	450			9
	900			11
	1800			13
	2700			14
	3600			15