

Example Data Summary Sheet for Infiltration Basin Design

Design Element	Design Data
Site assessment data: (see attached maps)	
Contributing drainage area to basin (subwatershed A)	120 acres
Distance to nearest private well (including off-site wells)	> 100 feet
Distance to municipal well (including off-site wells)	> 1200 feet
Wellhead protection area involved?	No
Ground slope at site of proposed basin	average 3%
Any buried or overhead utilities in the area?	No
Proposed outfall conveyance system/discharge (w/ distances)	35 ft. to CTH "U" Road ditch 1000 ft. to wetland
Any downstream roads or other structures? (describe)	Yes – 36" cmp road culvert
Floodplain, shoreland or wetlands?	No
Soil investigation data (see attached map & soil logs):	
Number of soil investigations completed	3 (in basin area, see plan)
Do elevations of test holes extend 5 ft. below proposed bottom?	Yes (see soil tests and plan details)
Average soil texture at pond bottom elevation (USDA)	Sandy loam
Design infiltration rate at basin bottom and method of analysis	2.0 in/hr, double-ring infiltrometer
Measured infiltration rate following construction	2.2 in/hr, double-ring infiltrometer
Distance from pond bottom to bedrock	> 5 feet
Distance from BMP bottom to seasonal water table	Trench bottom 3 ft above redox.
General basin design data (see attached detailed drawings):	
Basin bottom area	1.5 acres
Effective infiltration area	1.0 acres
1% of development area (120 acres)	1.2 acres
Basin bottom elevation	elev. 899.0
Top of berm elevation (after settling) and width	elev. 904.0 / 10 feet wide
Basin storage below outlet	1.0 ac-ft
25% of 2-yr 24-hr post-development runoff volume	0.94 ac-ft
Time to completely infiltrate stored water	6 hrs
Sediment forebay size & depth	0.16 acres (13% pool size)/5 feet
Additional design features	3' x 3' x 50' rock trench

Design Basin Inflow, Outflow & Storage Data (see attached hydrographs and detail drawings)				
Inflow Peak/Volume	Maximum Outflow Rate	Max. Water Elevation	Storage Volume at Max. Elev.	Outflow Control Structures*
7.6 cfs Post 1-yr./24 hr. peak	0 (100% infiltr.)	899.6 ft.	0.7 acre feet	#1
15.9 cfs (Post 2-yr./24 hr. peak)	0.6 cfs	900.5 ft.	1.5 acre feet	#1 and 2
59.3 cfs (Post 10-yr./24 hr. peak)	15.4 cfs	902.3 ft.	4.1 acre feet	#1, 2, and 3
132 cfs (Post 100-yr./24 hr. peak)	81.6 cfs	904.0 ft.	6.4 acre feet	#1, 2, 3 and 4

* The controlling elements are summarized below (See attached detail drawing of outlet structure):

#1 = Infiltration, 2 in/hr

#2 = 12 inch orifice in outlet riser– flow line elev. @ 900.0 (1.3 ft. max. head)

#3 = 18 in wide 1.5 foot high outlet riser – flow line elev. @ 901.5 (2.5 ft. max. hydraulic head)

#4 = 18 inch diameter smooth wall RCP – flow line elev. @ 900.0 (4.0 ft. max. hydraulic head)

#5 = 10 foot wide earthen/grass emergency spillway – flow line elev. @ 902.3 (1.8 ft. max. depth)