

### DRY HYDRANT HYDRAULIC DESIGN

Cooperator: \_\_\_\_\_ Location: \_\_\_\_\_  
Conservation District: \_\_\_\_\_ Field Office: \_\_\_\_\_  
Identification No.: \_\_\_\_\_ Field No.: \_\_\_\_\_  
Hydrant No. \_\_\_\_\_ Fire Department \_\_\_\_\_

Surface Area \_\_\_\_\_ ac. Depth \_\_\_\_\_ ft. Drainage Area \_\_\_\_\_ ac.

Step 1 – Compute straight pipe

Pipe Size \_\_\_\_\_ inch I.D.  
Screen Length \_\_\_\_\_ L.F.  
Lateral Run Length \_\_\_\_\_ L.F.  
Riser Height \_\_\_\_\_ L.F.  
**Total Straight Pipe** \_\_\_\_\_ **L.F.**

Step 2 – Compute straight pipe equivalent

Use Table No. 2 for following pipe length equivalents for fittings:

Hydrant Adapter _____	Elbow _____
Intake Screen _____	Elbow _____
Elbow _____	Elbow _____
Other _____	Other _____

**Straight Pipe Equivalent for Fittings = \_\_\_\_\_**

Step 3

**Total Straight Pipe Equivalent = \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_ ft.**  
(Step 1) (Step 2)

Step 4

**Design Flow = \_\_\_\_\_ GPM.**

Step 5

Compute Pipe and Fitting Head Loss by using answers from Steps 3 and 4 and Table 3.

**Head Loss for Pipe and Fittings = \_\_\_\_\_ ft.**

Step 6

Using Table No. 3, determine Hard Suction Hose Head Loss for length of suction hose used to connect the pump to the hydrant.

**Suction Hose Head Loss = \_\_\_\_\_ ft.**

Step 7

**Static Lift = \_\_\_\_\_ ft.**

Step 8

Add the answers from #5, 6, and 7 to get Total Suction Lift.

\_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = **Total Suction Lift** \_\_\_\_\_ ft.  
(Step 5) (Step 6) (Step 7)

**Total Suction Lift shall not be greater than 20 ft.**

_____ Designed By (name)	_____ (Date)
_____ Checked By (name)	_____ (Date)