WRITING RUBRIC

1.	Purpose	0.5/10.0 out of 0.5/10.0
2.	Drawings	1.0/10.0 out of 1.0/10.0
3.	Sources	1.0/10.0 out of 1.0/10.0
4.	Design considerations	1.0/10.0 out of 1.0/10.0
5.	Data and variables	0.5/10.0 out of 0.5/10.0
6.	Procedure	0.5/10.0 out of 2.0/10.0
7.	Calculations	2.0/10.0 out of 2.0/10.0
8.	Summary	0.5/10.0 out of 0.5/10.0
9.	Materials	0.5/10.0 out of 0.5/10.0
10.	Analysis	1.0/10.0 out of 1.0/10.0
TOTAL		8.5/10.0 out of 10.0/10.0

1.	. Design of buoy to open gate				
		a.	Hydrostatic force on the gate		
			i. Magnitude and location	0.5/4 out of 1/4	
		b.	Solve for buoy force with moment conservation	0.5/4 out of 1/4	
		C.	Using buoyancy, get sphere diameter.	0.25/4 out of	
		1/4			
		d.	Buoy stability	0.5/4 out of 1/4	
2.	Pipe-elbow forces				
		a.	Free body diagram and correct forces	0.75/4 out of	
		1/4			
		b.	Handling of the pressures	0.5/4 out of 1/4	
		C.	Force in x	0.5/4 out of 1/4	
		d.	Force in y (weight)	0.5/4 out of 1/4	
3.	3. Flow-nozzle flowmeter pressure drop				
		a.	Right equation and A1/A2	0.25/2 out of	
		1/2			
		b.	C value	0.25/2 out of	
		1/2			
4.	Open-channel design				
		a.	Correct equation	0.75/2 out of 1/2	
		b.	Area and hydraulic radius	0.5/2 out of 1/2	
5.	Water hammer & cavitation				
		a.	Water hammer		
			i. Wave velocity (units?) & pressure increase	0/4 out of 1/4	
			ii. Operating pressure & Max pressure 1/4	0.5/4 out of	
			iii. Pipe thickness	0.5/4 out of 1/4	
		b.	Cavitation		
			i. Lowest pressure	0.5/4 out of 1/4	
6.	Drag force on object at the bottom				
		a.	Right eq: Fdrag>Ffriction	0/4 out of 1/4	
		b.	Correct area	0.5/4 out of 1/4	
		C.	Correct velocity	0.5/4 out of 1/4	
		d.	How Cd was obtained?	0.5/4 out of 1/4	

FINAL GRADE:

8.5 + (80/6)*(1.75/4 + 2.25/4 + 0.5/2 + 1.25/2 + 1.5/4 + 1.5/4) = 43.5