Review Ave. Skimmer Pump Discharge Line Sizing

PIPING HEAD LOSS - PRODUCT

CALC BY	CHECK BY
TCK	BOD

SITE: Individual Skimmer Pump - Max Flow
DATE:

Length	15	ft	
Flow rate	0.22	gpm	Conservatively high flow rate due to pulsing of pumps. Pump capable of 160 GPD max or 0.11 GPM
ID	0.50	inches	(0.5" ID Tubing)
C	150	constant(steel = 100, thermoplastic = 150)	
Pipe Area	0.001	ft2	

FRICTION HEAD	**0.18**	**feet of H2O**	H2O head loss X 9 for 50 csT or 250 SSU w/ S.G. of 0.875 per Blackmer Hydraulic Data Bulletin 33, Nov '87
	0.08	**psi**	
Velocity	**0.36**	**ft/sec**	

SITE: Skimmer Pump Header
DATE:

Length	490	ft	
Flow rate	1.10	gpm	Conservatively high flow rate due to pulsing of pumps. Pump capable of 160 GPD max or 0.11 GPM x 5 pumps worst case zone - 0.55 GPM
ID	1.00	inches	(1.0" ID)
C	150	constant(steel = 100, thermoplastic = 150)	
Pipe Area	0.005	ft2	

FRICTION HEAD	**4.02**	**feet of H2O**	H2O head loss X 7 for 50 csT or 250 SSU w/ S.G. of 0.875 per Blackmer Hydraulic Data Bulletin 33, Nov '87
	1.74	**psi**	
Velocity	**0.45**	**ft/sec**	

SITE: Combined All Skimmer Wells to Treatment System
DATE:

Length	260	ft	
Flow rate	8.36	gpm	Conservatively high flow rate due to pulsing of pumps. Pump capable of 160 GPD max or 0.11 GPM x 38 pumps worst case zone - 4.2 GPM
ID	2.00	inches	(2" ID)
C	150	constant(steel = 100, thermoplastic = 150)	
Pipe Area	0.022	ft2	

FRICTION HEAD	**3.13**	**feet of H2O**	H2O head loss X 7 for 50 csT or 250 SSU w/ S.G. of 0.875 per Blackmer Hydraulic Data Bulletin 33, Nov '87
	1.36	**psi**	
Velocity	**0.85**	**ft/sec**	

Elev @ Pump Intake	Elev @ T-1401 Inlet	Static Head	TDH	TDH w/ 10% FOS	PSI @ 0.9 SG
5.0	37.5	32.5	**39.8**	**43.8**	**39.44**

Discharge EL Conservative - not taking into account 8' drop tube siphon leg