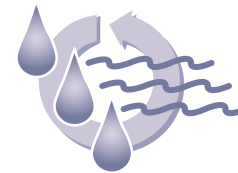


LA Desalination Project 2018, Super Conduit, Head Loss Analysis

Velocity	2	ft/sec	Temperature of water	59	deg F
Flow	240000	gpm	Density of water	62.4	lb/cuft
Haiwee Res elevation	3,774	ft	Kinematic Viscosity of water	1.22E-05	sqft/sec
Sylmar surface elevation	1,200	ft	Pipe wall roughness e	0.0085	ft
Fresh Water Engine Total Fall	2,574	ft	Super Conduit length	137	miles

# of Conduits in System all 137 miles	Conduit Inside Diameter all 137 miles (ft)	Reynolds #	Relative Roughness e/D	Fanning Friction Factor	Head Loss Super Conduit (ft)	Total Head Loss Fresh Water Sys. (ft)	Fresh Water System Efficiency	Fresh Water Engine Efficiency	Fresh Water Engine OSE
1	18.45	3.02E+06	4.61E-04	4.14E-03	40.32	80.64	96.9%	94.0%	91.1%
2	13.05	2.14E+06	6.52E-04	4.48E-03	61.68	123.37	95.2%	94.0%	89.5%
3	10.65	1.75E+06	7.98E-04	4.70E-03	79.22	158.44	93.8%	94.0%	88.2%
4	9.23	1.51E+06	9.21E-04	4.86E-03	94.68	189.35	92.6%	94.0%	87.1%
5	8.25	1.35E+06	1.03E-03	4.99E-03	108.76	217.51	91.5%	94.0%	86.1%
6	7.53	1.23E+06	1.13E-03	5.11E-03	121.84	243.67	90.5%	94.0%	85.1%



Bella Machines

www.bellamachines.com