

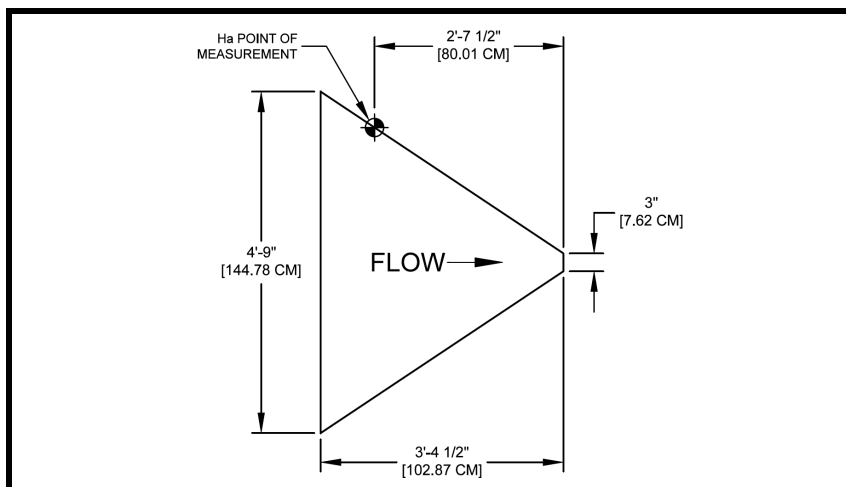


2.5-Foot H Flume Discharge Table

25-30% Submergence Transition ±2-5% Accuracy

Formulas (H in feet): $CFS = 0.001499 - 0.01992 H_{ft}^{0.4} + 0.727294 H_{ft}^{1.4} + 1.698273 H_{ft}^{2.5}$
 Formulas (H in meters): $L/S = 0.042446953 - 0.90725263 H_m^{0.4} + 108.676075 H_m^{1.4} + 937.5943603 H_m^{2.5}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.01	0.12	0.0030	Excessive error due to fluid-flow properties and boundary conditions				
0.02	0.24	0.0061	0.0018	0.8078	0.0012	0.0510	0.1834
0.03	0.36	0.0091	0.0038	1.705	0.0025	0.1076	0.3872
0.04	0.48	0.0122	0.0061	2.738	0.0039	0.1728	0.6216
0.05	0.60	0.0152	0.0089	3.994	0.0058	0.2520	0.9069
0.06	0.72	0.0183	0.0121	5.430	0.0078	0.3427	1.233
0.07	0.84	0.0213	0.0158	7.091	0.0102	0.4475	1.610
0.08	0.96	0.0244	0.0200	8.976	0.0129	0.5664	2.038
0.09	1.08	0.0274	0.0247	11.09	0.0160	0.6995	2.517
0.10	1.20	0.0305	0.0298	13.37	0.0193	0.8439	3.037
0.11	1.32	0.0335	0.0350	15.71	0.0226	0.9912	3.567
0.12	1.44	0.0366	0.0406	18.22	0.0262	1.150	4.137
0.13	1.56	0.0396	0.0465	20.87	0.0301	1.317	4.738
0.14	1.68	0.0427	0.0528	23.70	0.0341	1.495	5.380
0.15	1.80	0.0457	0.0595	26.70	0.0385	1.685	6.063
0.16	1.92	0.0488	0.0666	29.89	0.0430	1.886	6.787
0.17	2.04	0.0518	0.0741	33.26	0.0479	2.099	7.551
0.18	2.16	0.0549	0.0820	36.80	0.0530	2.322	8.356
0.19	2.28	0.0579	0.0903	40.53	0.0584	2.557	9.202
0.20	2.40	0.0610	0.0990	44.43	0.0640	2.804	10.09
0.21	2.52	0.0640	0.1081	48.52	0.0699	3.061	11.02
0.22	2.64	0.0671	0.1176	52.78	0.0760	3.330	11.98
0.23	2.76	0.0701	0.1275	57.22	0.0824	3.611	12.99
0.24	2.88	0.0732	0.1379	61.89	0.0891	3.905	14.05
0.25	3.00	0.0762	0.1486	66.69	0.0960	4.208	15.14
0.26	3.12	0.0792	0.1597	71.67	0.1032	4.523	16.27
0.27	3.24	0.0823	0.1713	76.88	0.1107	4.851	17.46
0.28	3.36	0.0853	0.1834	82.31	0.1185	5.194	18.69
0.29	3.48	0.0884	0.1960	87.96	0.1267	5.551	19.97
0.30	3.60	0.0914	0.209	93.80	0.1351	5.919	21.30



Curve fitted equation accurate to within 1.5%

Notes: Discharge is calculated to top of flume

Source: Field Manual for Research in Agricultural Hydrology, Agriculture Handbook No. 224, U.S. Department of Agriculture, February 1972



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FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.31	3.72	0.0945	0.222	99.63	0.1435	6.287	22.62
0.32	3.84	0.0975	0.236	105.9	0.1525	6.684	24.05
0.33	3.96	0.1006	0.250	112.2	0.1616	7.080	25.48
0.34	4.08	0.1036	0.265	118.9	0.1713	7.505	27.00
0.35	4.20	0.1067	0.280	125.7	0.1810	7.930	28.53
0.36	4.32	0.1097	0.296	132.8	0.1913	8.383	30.16
0.37	4.44	0.1128	0.312	140.0	0.2016	8.836	31.79
0.38	4.56	0.1158	0.328	147.2	0.2120	9.289	33.42
0.39	4.68	0.1189	0.345	154.8	0.2230	9.770	35.16
0.40	4.80	0.1219	0.363	162.9	0.2346	10.28	36.99
0.41	4.92	0.1250	0.381	171.0	0.2462	10.79	38.82
0.42	5.04	0.1280	0.399	179.1	0.2579	11.30	40.66
0.43	5.16	0.1311	0.418	187.6	0.2702	11.84	42.59
0.44	5.28	0.1341	0.437	196.1	0.2824	12.38	44.53
0.45	5.40	0.1372	0.457	205.1	0.2954	12.94	46.57
0.46	5.52	0.1402	0.478	214.5	0.3089	13.54	48.71
0.47	5.64	0.1433	0.499	224.0	0.3225	14.13	50.85
0.48	5.76	0.1463	0.520	233.4	0.3361	14.73	52.99
0.49	5.88	0.1494	0.542	243.2	0.3503	15.35	55.23
0.50	6.00	0.1524	0.564	253.1	0.3645	15.97	57.47
0.51	6.12	0.1554	0.587	263.4	0.3794	16.62	59.82
0.52	6.24	0.1585	0.611	274.2	0.3949	17.30	62.26
0.53	6.36	0.1615	0.635	285.0	0.4104	17.98	64.71
0.54	6.48	0.1646	0.659	295.8	0.4259	18.66	67.15
0.55	6.60	0.1676	0.684	307.0	0.4421	19.37	69.70
0.56	6.72	0.1707	0.710	318.6	0.4589	20.11	72.35
0.57	6.84	0.1737	0.736	330.3	0.4757	20.84	75.00
0.58	6.96	0.1768	0.763	342.4	0.4931	21.61	77.75
0.59	7.08	0.1798	0.790	354.6	0.5106	22.37	80.50
0.60	7.20	0.1829	0.818	367.1	0.5287	23.17	83.35
0.61	7.32	0.1859	0.846	379.7	0.5468	23.96	86.21
0.62	7.44	0.1890	0.875	392.7	0.5655	24.78	89.16
0.63	7.56	0.1920	0.904	405.7	0.5843	25.60	92.12
0.64	7.68	0.1951	0.934	419.2	0.6036	26.45	95.17
0.65	7.80	0.1981	0.965	433.1	0.6237	27.33	98.33
0.66	7.92	0.2012	0.996	447.0	0.6437	28.21	101.5
0.67	8.04	0.2042	1.027	460.9	0.6638	29.08	104.7
0.68	8.16	0.2073	1.059	475.3	0.6844	29.99	107.9
0.69	8.28	0.2103	1.092	490.1	0.7058	30.93	111.3
0.70	8.40	0.2134	1.13	507.1	0.7303	32.00	115.1
0.71	8.52	0.2164	1.16	520.6	0.7497	32.85	118.2
0.72	8.64	0.2195	1.19	534.1	0.7691	33.70	121.3
0.73	8.76	0.2225	1.23	552.0	0.7949	34.83	125.3
0.74	8.88	0.2256	1.27	570.0	0.8208	35.97	129.4
0.75	9.00	0.2286	1.30	583.4	0.8402	36.82	132.5
0.76	9.12	0.2316	1.34	601.4	0.8660	37.95	136.5
0.77	9.24	0.2347	1.38	619.3	0.8919	39.08	140.6
0.78	9.36	0.2377	1.41	632.8	0.9113	39.93	143.7
0.79	9.48	0.2408	1.45	650.8	0.9371	41.06	147.8
0.80	9.60	0.2438	1.49	668.7	0.9630	42.20	151.8

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FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.81	9.72	0.2469	1.53	686.7	0.9888	43.33	155.9
0.82	9.84	0.2499	1.57	704.6	1.015	44.46	160.0
0.83	9.96	0.2530	1.61	722.6	1.041	45.60	164.1
0.84	10.08	0.2560	1.65	740.5	1.066	46.73	168.1
0.85	10.20	0.2591	1.70	763.0	1.099	48.14	173.2
0.86	10.32	0.2621	1.74	780.9	1.125	49.28	177.3
0.87	10.44	0.2652	1.78	798.9	1.150	50.41	181.4
0.88	10.56	0.2682	1.83	821.3	1.183	51.83	186.5
0.89	10.68	0.2713	1.87	839.3	1.209	52.96	190.6
0.90	10.80	0.2743	1.92	861.7	1.241	54.37	195.6
0.91	10.92	0.2774	1.96	879.6	1.267	55.51	199.7
0.92	11.04	0.2804	2.01	902.1	1.299	56.92	204.8
0.93	11.16	0.2835	2.06	924.5	1.331	58.34	209.9
0.94	11.28	0.2865	2.11	947.0	1.364	59.76	215.0
0.95	11.40	0.2896	2.16	969.4	1.396	61.17	220.1
0.96	11.52	0.2926	2.21	991.8	1.428	62.59	225.2
0.97	11.64	0.2957	2.26	1014	1.461	64.00	230.3
0.98	11.76	0.2987	2.31	1037	1.493	65.42	235.4
0.99	11.88	0.3018	2.36	1059	1.525	66.84	240.5
1.00	12.00	0.3048	2.41	1082	1.558	68.25	245.6
1.01	12.12	0.3078	2.46	1104	1.590	69.67	250.7
1.02	12.24	0.3109	2.51	1126	1.622	71.08	255.8
1.03	12.36	0.3139	2.57	1153	1.661	72.78	261.9
1.04	12.48	0.3170	2.62	1176	1.693	74.20	267.0
1.05	12.60	0.3200	2.68	1203	1.732	75.90	273.1
1.06	12.72	0.3231	2.74	1230	1.771	77.60	279.2
1.07	12.84	0.3261	2.79	1252	1.803	79.01	284.3
1.08	12.96	0.3292	2.85	1279	1.842	80.71	290.4
1.09	13.08	0.3322	2.91	1306	1.881	82.41	296.5
1.10	13.20	0.3353	2.97	1333	1.920	84.11	302.6
1.11	13.32	0.3383	3.03	1360	1.958	85.81	308.8
1.12	13.44	0.3414	3.09	1387	1.997	87.51	314.9
1.13	13.56	0.3444	3.15	1414	2.036	89.21	321.0
1.14	13.68	0.3475	3.21	1441	2.075	90.91	327.1
1.15	13.80	0.3505	3.27	1468	2.113	92.61	333.2
1.16	13.92	0.3536	3.33	1495	2.152	94.31	339.3
1.17	14.04	0.3566	3.40	1526	2.197	96.29	346.5
1.18	14.16	0.3597	3.46	1553	2.236	97.99	352.6
1.19	14.28	0.3627	3.53	1584	2.281	99.97	359.7
1.20	14.40	0.3658	3.59	1611	2.320	101.7	365.8
1.21	14.52	0.3688	3.66	1643	2.365	103.7	373.0
1.22	14.64	0.3719	3.73	1674	2.411	105.6	380.1
1.23	14.76	0.3749	3.80	1705	2.456	107.6	387.2
1.24	14.88	0.3780	3.86	1732	2.495	109.3	393.3
1.25	15.00	0.3810	3.93	1764	2.540	111.3	400.5
1.26	15.12	0.3840	4.00	1795	2.585	113.3	407.6
1.27	15.24	0.3871	4.07	1827	2.630	115.3	414.7
1.28	15.36	0.3901	4.15	1863	2.682	117.5	422.9
1.29	15.48	0.3932	4.22	1894	2.727	119.5	430.0
1.30	15.60	0.3962	4.29	1925	2.773	121.5	437.2

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FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
1.31	15.72	0.3993	4.37	1961	2.824	123.8	445.3
1.32	15.84	0.4023	4.44	1993	2.870	125.7	452.4
1.33	15.96	0.4054	4.52	2029	2.921	128.0	460.6
1.34	16.08	0.4084	4.59	2060	2.967	130.0	467.7
1.35	16.20	0.4115	4.67	2096	3.018	132.3	475.9
1.36	16.32	0.4145	4.75	2132	3.070	134.5	484.0
1.37	16.44	0.4176	4.82	2163	3.115	136.5	491.2
1.38	16.56	0.4206	4.90	2199	3.167	138.8	499.3
1.39	16.68	0.4237	4.98	2235	3.219	141.0	507.5
1.40	16.80	0.4267	5.06	2271	3.270	143.3	515.6
1.41	16.92	0.4298	5.15	2311	3.328	145.8	524.8
1.42	17.04	0.4328	5.23	2347	3.380	148.1	532.9
1.43	17.16	0.4359	5.31	2383	3.432	150.4	541.1
1.44	17.28	0.4389	5.39	2419	3.484	152.6	549.2
1.45	17.40	0.4420	5.48	2459	3.542	155.2	558.4
1.46	17.52	0.4450	5.56	2495	3.593	157.5	566.6
1.47	17.64	0.4481	5.65	2536	3.652	160.0	575.7
1.48	17.76	0.4511	5.74	2576	3.710	162.6	584.9
1.49	17.88	0.4542	5.82	2612	3.761	164.8	593.1
1.50	18.00	0.4572	5.91	2652	3.820	167.4	602.2
1.51	18.12	0.4602	6.00	2693	3.878	169.9	611.4
1.52	18.24	0.4633	6.09	2733	3.936	172.5	620.6
1.53	18.36	0.4663	6.18	2774	3.994	175.0	629.7
1.54	18.48	0.4694	6.27	2814	4.052	177.6	638.9
1.55	18.60	0.4724	6.37	2859	4.117	180.4	649.1
1.56	18.72	0.4755	6.46	2899	4.175	182.9	658.3
1.57	18.84	0.4785	6.55	2940	4.233	185.5	667.4
1.58	18.96	0.4816	6.65	2985	4.298	188.3	677.6
1.59	19.08	0.4846	6.75	3029	4.363	191.2	687.8
1.60	19.20	0.4877	6.84	3070	4.421	193.7	697.0
1.61	19.32	0.4907	6.94	3115	4.485	196.5	707.2
1.62	19.44	0.4938	7.04	3160	4.550	199.4	717.4
1.63	19.56	0.4968	7.14	3204	4.615	202.2	727.6
1.64	19.68	0.4999	7.24	3249	4.679	205.0	737.8
1.65	19.80	0.5029	7.34	3294	4.744	207.9	747.9
1.66	19.92	0.5060	7.45	3344	4.815	211.0	759.2
1.67	20.04	0.5090	7.55	3388	4.880	213.8	769.3
1.68	20.16	0.5121	7.66	3438	4.951	216.9	780.6
1.69	20.28	0.5151	7.76	3483	5.015	219.8	790.7
1.70	20.40	0.5182	7.86	3528	5.080	222.6	800.9
1.71	20.52	0.5212	7.97	3577	5.151	225.7	812.1
1.72	20.64	0.5243	8.08	3626	5.222	228.8	823.4
1.73	20.76	0.5273	8.19	3676	5.293	231.9	834.6
1.74	20.88	0.5304	8.30	3725	5.364	235.1	845.8
1.75	21.00	0.5334	8.41	3774	5.435	238.2	857.0
1.76	21.12	0.5364	8.53	3828	5.513	241.6	869.2
1.77	21.24	0.5395	8.64	3878	5.584	244.7	880.4
1.78	21.36	0.5425	8.75	3927	5.655	247.8	891.6
1.79	21.48	0.5456	8.87	3981	5.733	251.2	903.9
1.80	21.60	0.5486	8.98	4030	5.804	254.3	915.1

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FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
1.81	21.72	0.5517	9.10	4084	5.881	257.7	927.3
1.82	21.84	0.5547	9.22	4138	5.959	261.1	939.5
1.83	21.96	0.5578	9.34	4192	6.036	264.5	951.7
1.84	22.08	0.5608	9.45	4241	6.108	267.6	963.0
1.85	22.20	0.5639	9.57	4295	6.185	271.0	975.2
1.86	22.32	0.5669	9.70	4353	6.269	274.7	988.4
1.87	22.44	0.5700	9.82	4407	6.347	278.1	1001
1.88	22.56	0.5730	9.94	4461	6.424	281.5	1013
1.89	22.68	0.5761	10.06	4515	6.502	284.9	1025
1.90	22.80	0.5791	10.2	4578	6.592	288.9	1039
1.91	22.92	0.5822	10.3	4623	6.657	291.7	1050
1.92	23.04	0.5852	10.4	4668	6.722	294.5	1060
1.93	23.16	0.5883	10.6	4757	6.851	300.2	1080
1.94	23.28	0.5913	10.7	4802	6.915	303.0	1090
1.95	23.40	0.5944	10.8	4847	6.980	305.9	1101
1.96	23.52	0.5974	11.0	4937	7.109	311.5	1121
1.97	23.64	0.6005	11.1	4982	7.174	314.4	1131
1.98	23.76	0.6035	11.2	5027	7.239	317.2	1141
1.99	23.88	0.6066	11.4	5116	7.368	322.8	1162
2.00	24.00	0.6096	11.5	5161	7.432	325.7	1172
2.01	24.12	0.6126	11.6	5206	7.497	328.5	1182
2.02	24.24	0.6157	11.8	5296	7.626	334.2	1202
2.03	24.36	0.6187	11.9	5341	7.691	337.0	1213
2.04	24.48	0.6218	12.0	5386	7.756	339.8	1223
2.05	24.60	0.6248	12.2	5475	7.885	345.5	1243
2.06	24.72	0.6279	12.3	5520	7.949	348.3	1253
2.07	24.84	0.6309	12.5	5610	8.079	354.0	1274
2.08	24.96	0.6340	12.6	5655	8.143	356.8	1284
2.09	25.08	0.6370	12.7	5700	8.208	359.7	1294
2.10	25.20	0.6401	12.9	5790	8.337	365.3	1315
2.11	25.32	0.6431	13.0	5834	8.402	368.2	1325
2.12	25.44	0.6462	13.2	5924	8.531	373.8	1345
2.13	25.56	0.6492	13.3	5969	8.596	376.7	1355
2.14	25.68	0.6523	13.5	6059	8.725	382.3	1376
2.15	25.80	0.6553	13.6	6104	8.790	385.2	1386
2.16	25.92	0.6584	13.8	6193	8.919	390.8	1406
2.17	26.04	0.6614	13.9	6238	8.984	393.6	1416
2.18	26.16	0.6645	14.1	6328	9.113	399.3	1437
2.19	26.28	0.6675	14.2	6373	9.177	402.1	1447
2.20	26.40	0.6706	14.4	6463	9.307	407.8	1467
2.21	26.52	0.6736	14.5	6508	9.371	410.6	1478
2.22	26.64	0.6767	14.7	6597	9.501	416.3	1498
2.23	26.76	0.6797	14.8	6642	9.565	419.1	1508
2.24	26.88	0.6828	15.0	6732	9.695	424.8	1529
2.25	27.00	0.6858	15.1	6777	9.759	427.6	1539
2.26	27.12	0.6888	15.3	6867	9.888	433.3	1559
2.27	27.24	0.6919	15.5	6956	10.02	439.0	1579
2.28	27.36	0.6949	15.6	7001	10.08	441.8	1590
2.29	27.48	0.6980	15.8	7091	10.21	447.5	1610
2.30	27.60	0.7010	16.0	7181	10.34	453.1	1630

Source: Field Manual for Research in Agricultural Hydrology, Agriculture Handbook No. 224, U.S. Department of Agriculture, February 1972



2.5-Foot H Flume Discharge Table

25-30% Submergence Transition ±2-5% Accuracy

Formulas (H in feet): $CFS = 0.001499 - 0.01992 H_{ft}^{0.4} + 0.727294 H_{ft}^{1.4} + 1.698273 H_{ft}^{2.5}$
 Formulas (H in meters): $L/S = 0.042446953 - 0.90725263 H_m^{0.4} + 108.676075 H_m^{1.4} + 937.5943603 H_m^{2.5}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
2.31	27.72	0.7041	16.1	7226	10.41	456.0	1641
2.32	27.84	0.7071	16.3	7315	10.53	461.6	1661
2.33	27.96	0.7102	16.4	7360	10.60	464.4	1671
2.34	28.08	0.7132	16.6	7450	10.73	470.1	1692
2.35	28.20	0.7163	16.8	7540	10.86	475.8	1712
2.36	28.32	0.7193	17.0	7630	10.99	481.4	1732
2.37	28.44	0.7224	17.1	7674	11.05	484.3	1742
2.38	28.56	0.7254	17.3	7764	11.18	489.9	1763
2.39	28.68	0.7285	17.5	7854	11.31	495.6	1783
2.40	28.80	0.7315	17.6	7899	11.37	498.4	1793
2.41	28.92	0.7346	17.8	7989	11.50	504.10	1814
2.42	29.04	0.7376	18.0	8078	11.63	509.76	1834
2.43	29.16	0.7407	18.2	8168	11.76	515.4	1855
2.44	29.28	0.7437	18.3	8213	11.83	518.3	1865
2.45	29.40	0.7468	18.5	8303	11.96	523.9	1885
2.46	29.52	0.7498	18.7	8393	12.09	529.6	1906
2.47	29.64	0.7529	19.1	8572	12.34	540.9	1946
2.48	29.76	0.7559	19.2	8617	12.41	543.7	1956
2.49	29.88	0.7590	19.4	8707	12.54	549.4	1977