



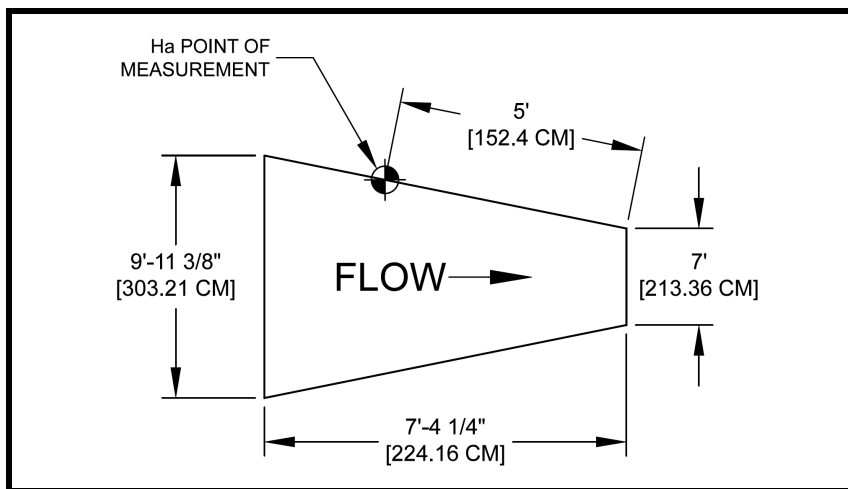
84-Inch Montana Flume Discharge Table

No Submergence ±3-5% Accuracy

Formulas (H in feet): $CFS = 28 H_{ft}^{1.601}$
 Formulas (H in meters): $L/S = 5318 H_m^{1.601}$

$GPM = 12566 H_{ft}^{1.601}$ $MGD = 18.10 H_{ft}^{1.601}$
 $M3/HR = 19145 H_m^{1.601}$

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					
0.03	0.36	0.0091					
0.04	0.48	0.0122					
0.05	0.60	0.0152					
0.06	0.72	0.0183					
0.07	0.84	0.0213					
0.08	0.96	0.0244					
0.09	1.08	0.0274					
0.10	1.20	0.0305					
0.11	1.32	0.0335					
0.12	1.44	0.0366					
0.13	1.56	0.0396					
0.14	1.68	0.0427					
0.15	1.80	0.0457					
0.16	1.92	0.0488					
0.17	2.04	0.0518					
0.18	2.16	0.0549					
0.19	2.28	0.0579					
0.20	2.40	0.0610					
0.21	2.52	0.0640					
0.22	2.64	0.0671					
0.23	2.76	0.0701					
0.24	2.88	0.0732					
0.25	3.00	0.0762	3.043	1366	1.967	86.17	310.1
0.26	3.12	0.0792	3.240	1454	2.094	91.75	330.1
0.27	3.24	0.0823	3.442	1545	2.224	97.47	350.7
0.28	3.36	0.0853	3.648	1637	2.358	103.3	371.7
0.29	3.48	0.0884	3.859	1732	2.494	109.3	393.2
0.30	3.60	0.0914	4.074	1828	2.633	115.4	415.1



Sources:

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FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.31	3.72	0.0945	4.294	1927	2.775	121.6	437.5
0.32	3.84	0.0975	4.518	2027	2.920	127.9	460.3
0.33	3.96	0.1006	4.746	2130	3.067	134.4	483.6
0.34	4.08	0.1036	4.978	2234	3.217	141.0	507.3
0.35	4.20	0.1067	5.214	2340	3.370	147.7	531.4
0.36	4.32	0.1097	5.455	2448	3.526	154.5	555.9
0.37	4.44	0.1128	5.700	2558	3.684	161.4	580.8
0.38	4.56	0.1158	5.948	2670	3.844	168.5	606.1
0.39	4.68	0.1189	6.201	2783	4.008	175.6	631.9
0.40	4.80	0.1219	6.457	2898	4.173	182.9	658.0
0.41	4.92	0.1250	6.718	3015	4.342	190.2	684.5
0.42	5.04	0.1280	6.982	3134	4.512	197.7	711.5
0.43	5.16	0.1311	7.250	3254	4.686	205.3	738.8
0.44	5.28	0.1341	7.522	3376	4.861	213.0	766.5
0.45	5.40	0.1372	7.797	3499	5.039	220.8	794.6
0.46	5.52	0.1402	8.077	3625	5.220	228.7	823.0
0.47	5.64	0.1433	8.360	3752	5.403	236.7	851.8
0.48	5.76	0.1463	8.646	3880	5.588	244.9	881.0
0.49	5.88	0.1494	8.936	4011	5.776	253.1	910.6
0.50	6.00	0.1524	9.230	4142	5.965	261.4	940.6
0.51	6.12	0.1554	9.527	4276	6.158	269.8	970.8
0.52	6.24	0.1585	9.828	4411	6.352	278.3	1002
0.53	6.36	0.1615	10.13	4548	6.549	287.0	1033
0.54	6.48	0.1646	10.44	4686	6.748	295.7	1064
0.55	6.60	0.1676	10.75	4825	6.949	304.5	1096
0.56	6.72	0.1707	11.07	4967	7.152	313.4	1128
0.57	6.84	0.1737	11.38	5109	7.358	322.4	1160
0.58	6.96	0.1768	11.71	5254	7.566	331.5	1193
0.59	7.08	0.1798	12.03	5399	7.775	340.7	1226
0.60	7.20	0.1829	12.36	5547	7.988	350.0	1259
0.61	7.32	0.1859	12.69	5695	8.202	359.4	1293
0.62	7.44	0.1890	13.02	5846	8.418	368.9	1327
0.63	7.56	0.1920	13.36	5997	8.636	378.4	1362
0.64	7.68	0.1951	13.70	6150	8.857	388.1	1396
0.65	7.80	0.1981	14.05	6305	9.080	397.9	1432
0.66	7.92	0.2012	14.40	6461	9.304	407.7	1467
0.67	8.04	0.2042	14.75	6618	9.531	417.6	1503
0.68	8.16	0.2073	15.10	6777	9.760	427.7	1539
0.69	8.28	0.2103	15.46	6938	9.991	437.8	1575
0.70	8.40	0.2134	15.82	7099	10.22	448.0	1612
0.71	8.52	0.2164	16.18	7262	10.46	458.3	1649
0.72	8.64	0.2195	16.55	7427	10.70	468.6	1686
0.73	8.76	0.2225	16.92	7593	10.93	479.1	1724
0.74	8.88	0.2256	17.29	7760	11.17	489.7	1762
0.75	9.00	0.2286	17.67	7928	11.42	500.3	1800
0.76	9.12	0.2316	18.04	8098	11.66	511.0	1839
0.77	9.24	0.2347	18.43	8270	11.91	521.8	1878
0.78	9.36	0.2377	18.81	8442	12.16	532.7	1917
0.79	9.48	0.2408	19.20	8616	12.41	543.7	1956
0.80	9.60	0.2438	19.59	8791	12.66	554.8	1996

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FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.81	9.72	0.2469	19.98	8968	12.91	565.9	2036
0.82	9.84	0.2499	20.38	9146	13.17	577.1	2077
0.83	9.96	0.2530	20.78	9325	13.43	588.4	2117
0.84	10.08	0.2560	21.18	9506	13.69	599.8	2158
0.85	10.20	0.2591	21.59	9687	13.95	611.3	2200
0.86	10.32	0.2621	21.99	9871	14.21	622.8	2241
0.87	10.44	0.2652	22.40	10055	14.48	634.5	2283
0.88	10.56	0.2682	22.82	10241	14.75	646.2	2325
0.89	10.68	0.2713	23.23	10428	15.02	658.0	2368
0.90	10.80	0.2743	23.65	10616	15.29	669.9	2410
0.91	10.92	0.2774	24.08	10805	15.56	681.8	2453
0.92	11.04	0.2804	24.50	10996	15.83	693.9	2497
0.93	11.16	0.2835	24.93	11188	16.11	706.0	2540
0.94	11.28	0.2865	25.36	11381	16.39	718.2	2584
0.95	11.40	0.2896	25.79	11576	16.67	730.4	2628
0.96	11.52	0.2926	26.23	11771	16.95	742.8	2673
0.97	11.64	0.2957	26.67	11968	17.24	755.2	2717
0.98	11.76	0.2987	27.11	12166	17.52	767.7	2762
0.99	11.88	0.3018	27.55	12366	17.81	780.3	2808
1.00	12.00	0.3048	28.00	12566	18.10	793.0	2853
1.01	12.12	0.3078	28.45	12768	18.39	805.7	2899
1.02	12.24	0.3109	28.90	12971	18.68	818.5	2945
1.03	12.36	0.3139	29.36	13175	18.97	831.4	2991
1.04	12.48	0.3170	29.81	13381	19.27	844.3	3038
1.05	12.60	0.3200	30.27	13587	19.57	857.4	3085
1.06	12.72	0.3231	30.74	13795	19.87	870.5	3132
1.07	12.84	0.3261	31.20	14004	20.17	883.7	3180
1.08	12.96	0.3292	31.67	14214	20.47	896.9	3227
1.09	13.08	0.3322	32.14	14425	20.77	910.3	3275
1.10	13.20	0.3353	32.62	14638	21.08	923.7	3324
1.11	13.32	0.3383	33.09	14852	21.39	937.2	3372
1.12	13.44	0.3414	33.57	15066	21.70	950.7	3421
1.13	13.56	0.3444	34.05	15282	22.01	964.3	3470
1.14	13.68	0.3475	34.54	15499	22.32	978.0	3519
1.15	13.80	0.3505	35.02	15718	22.63	991.8	3569
1.16	13.92	0.3536	35.51	15937	22.95	1006	3619
1.17	14.04	0.3566	36.00	16158	23.27	1020	3669
1.18	14.16	0.3597	36.50	16379	23.59	1034	3719
1.19	14.28	0.3627	36.99	16602	23.91	1048	3769
1.20	14.40	0.3658	37.49	16826	24.23	1062	3820
1.21	14.52	0.3688	37.99	17051	24.55	1076	3871
1.22	14.64	0.3719	38.50	17277	24.88	1090	3923
1.23	14.76	0.3749	39.00	17504	25.21	1105	3974
1.24	14.88	0.3780	39.51	17733	25.54	1119	4026
1.25	15.00	0.3810	40.02	17962	25.87	1133	4078
1.26	15.12	0.3840	40.54	18193	26.20	1148	4131
1.27	15.24	0.3871	41.05	18425	26.53	1163	4183
1.28	15.36	0.3901	41.57	18658	26.87	1177	4236
1.29	15.48	0.3932	42.09	18891	27.20	1192	4289
1.30	15.60	0.3962	42.62	19126	27.54	1207	4343

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FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
1.31	15.72	0.3993	43.14	19363	27.88	1222	4396
1.32	15.84	0.4023	43.67	19600	28.22	1237	4450
1.33	15.96	0.4054	44.20	19838	28.57	1252	4504
1.34	16.08	0.4084	44.74	20077	28.91	1267	4559
1.35	16.20	0.4115	45.27	20318	29.26	1282	4613
1.36	16.32	0.4145	45.81	20559	29.61	1297	4668
1.37	16.44	0.4176	46.35	20802	29.96	1313	4723
1.38	16.56	0.4206	46.89	21045	30.31	1328	4778
1.39	16.68	0.4237	47.44	21290	30.66	1343	4834
1.40	16.80	0.4267	47.99	21536	31.01	1359	4890
1.41	16.92	0.4298	48.54	21783	31.37	1375	4946
1.42	17.04	0.4328	49.09	22031	31.73	1390	5002
1.43	17.16	0.4359	49.64	22279	32.08	1406	5059
1.44	17.28	0.4389	50.20	22529	32.44	1422	5115
1.45	17.40	0.4420	50.76	22780	32.81	1437	5172
1.46	17.52	0.4450	51.32	23032	33.17	1453	5230
1.47	17.64	0.4481	51.88	23286	33.53	1469	5287
1.48	17.76	0.4511	52.45	23540	33.90	1485	5345
1.49	17.88	0.4542	53.02	23795	34.27	1501	5403
1.50	18.00	0.4572	53.59	24051	34.63	1518	5461
1.51	18.12	0.4602	54.16	24308	35.01	1534	5519
1.52	18.24	0.4633	54.74	24566	35.38	1550	5578
1.53	18.36	0.4663	55.32	24826	35.75	1567	5637
1.54	18.48	0.4694	55.90	25086	36.13	1583	5696
1.55	18.60	0.4724	56.48	25347	36.50	1599	5755
1.56	18.72	0.4755	57.06	25610	36.88	1616	5815
1.57	18.84	0.4785	57.65	25873	37.26	1633	5874
1.58	18.96	0.4816	58.24	26137	37.64	1649	5934
1.59	19.08	0.4846	58.83	26403	38.02	1666	5995
1.60	19.20	0.4877	59.42	26669	38.41	1683	6055
1.61	19.32	0.4907	60.02	26936	38.79	1700	6116
1.62	19.44	0.4938	60.62	27205	39.18	1717	6177
1.63	19.56	0.4968	61.22	27474	39.56	1734	6238
1.64	19.68	0.4999	61.82	27744	39.95	1751	6299
1.65	19.80	0.5029	62.42	28016	40.34	1768	6361
1.66	19.92	0.5060	63.03	28288	40.74	1785	6423
1.67	20.04	0.5090	63.64	28561	41.13	1802	6485
1.68	20.16	0.5121	64.25	28836	41.53	1820	6547
1.69	20.28	0.5151	64.86	29111	41.92	1837	6610
1.70	20.40	0.5182	65.48	29387	42.32	1854	6672
1.71	20.52	0.5212	66.10	29665	42.72	1872	6735
1.72	20.64	0.5243	66.72	29943	43.12	1889	6799
1.73	20.76	0.5273	67.34	30222	43.52	1907	6862
1.74	20.88	0.5304	67.96	30502	43.92	1925	6926
1.75	21.00	0.5334	68.59	30783	44.33	1942	6989
1.76	21.12	0.5364	69.22	31065	44.74	1960	7053
1.77	21.24	0.5395	69.85	31348	45.14	1978	7118
1.78	21.36	0.5425	70.48	31632	45.55	1996	7182
1.79	21.48	0.5456	71.12	31917	45.96	2014	7247
1.80	21.60	0.5486	71.75	32203	46.37	2032	7312

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FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
1.81	21.72	0.5517	72.39	32490	46.79	2050	7377
1.82	21.84	0.5547	73.04	32778	47.20	2068	7442
1.83	21.96	0.5578	73.68	33067	47.62	2087	7508
1.84	22.08	0.5608	74.32	33357	48.04	2105	7574
1.85	22.20	0.5639	74.97	33648	48.45	2123	7640
1.86	22.32	0.5669	75.62	33939	48.87	2142	7706
1.87	22.44	0.5700	76.27	34232	49.30	2160	7772
1.88	22.56	0.5730	76.93	34525	49.72	2179	7839
1.89	22.68	0.5761	77.58	34820	50.14	2197	7906
1.90	22.80	0.5791	78.24	35115	50.57	2216	7973
1.91	22.92	0.5822	78.90	35412	50.99	2235	8040
1.92	23.04	0.5852	79.57	35709	51.42	2253	8108
1.93	23.16	0.5883	80.23	36007	51.85	2272	8175
1.94	23.28	0.5913	80.90	36306	52.28	2291	8243
1.95	23.40	0.5944	81.56	36606	52.72	2310	8311
1.96	23.52	0.5974	82.24	36907	53.15	2329	8380
1.97	23.64	0.6005	82.91	37209	53.58	2348	8448
1.98	23.76	0.6035	83.58	37512	54.02	2367	8517
1.99	23.88	0.6066	84.26	37816	54.46	2386	8586
2.00	24.00	0.6096	84.94	38121	54.90	2405	8655
2.01	24.12	0.6126	85.62	38426	55.34	2425	8725
2.02	24.24	0.6157	86.30	38733	55.78	2444	8794
2.03	24.36	0.6187	86.99	39040	56.22	2463	8864
2.04	24.48	0.6218	87.68	39349	56.66	2483	8934
2.05	24.60	0.6248	88.36	39658	57.11	2502	9004
2.06	24.72	0.6279	89.06	39968	57.56	2522	9075
2.07	24.84	0.6309	89.75	40279	58.00	2542	9145
2.08	24.96	0.6340	90.44	40591	58.45	2561	9216
2.09	25.08	0.6370	91.14	40904	58.90	2581	9287
2.10	25.20	0.6401	91.84	41218	59.36	2601	9358
2.11	25.32	0.6431	92.54	41532	59.81	2621	9430
2.12	25.44	0.6462	93.24	41848	60.26	2641	9502
2.13	25.56	0.6492	93.95	42164	60.72	2661	9573
2.14	25.68	0.6523	94.66	42482	61.18	2681	9645
2.15	25.80	0.6553	95.37	42800	61.63	2701	9718
2.16	25.92	0.6584	96.08	43119	62.09	2721	9790
2.17	26.04	0.6614	96.79	43439	62.56	2741	9863
2.18	26.16	0.6645	97.50	43760	63.02	2761	9936
2.19	26.28	0.6675	98.22	44082	63.48	2782	10009
2.20	26.40	0.6706	98.94	44405	63.95	2802	10082
2.21	26.52	0.6736	99.66	44728	64.41	2822	10156
2.22	26.64	0.6767	100.4	45053	64.88	2843	10229
2.23	26.76	0.6797	101.1	45378	65.35	2863	10303
2.24	26.88	0.6828	101.8	45704	65.82	2884	10377
2.25	27.00	0.6858	102.6	46031	66.29	2905	10451
2.26	27.12	0.6888	103.3	46359	66.76	2925	10526
2.27	27.24	0.6919	104.0	46688	67.23	2946	10601
2.28	27.36	0.6949	104.8	47018	67.71	2967	10675
2.29	27.48	0.6980	105.5	47349	68.18	2988	10751
2.30	27.60	0.7010	106.2	47680	68.66	3009	10826

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FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
2.31	27.72	0.7041	107.0	48012	69.14	3030	10901
2.32	27.84	0.7071	107.7	48346	69.62	3051	10977
2.33	27.96	0.7102	108.5	48680	70.10	3072	11053
2.34	28.08	0.7132	109.2	49015	70.58	3093	11129
2.35	28.20	0.7163	110.0	49350	71.07	3114	11205
2.36	28.32	0.7193	110.7	49687	71.55	3135	11281
2.37	28.44	0.7224	111.5	50025	72.04	3157	11358
2.38	28.56	0.7254	112.2	50363	72.53	3178	11435
2.39	28.68	0.7285	113.0	50702	73.01	3199	11512
2.40	28.80	0.7315	113.7	51042	73.50	3221	11589
2.41	28.92	0.7346	114.5	51383	73.99	3242	11667
2.42	29.04	0.7376	115.3	51725	74.49	3264	11744
2.43	29.16	0.7407	116.0	52067	74.98	3286	11822
2.44	29.28	0.7437	116.8	52411	75.48	3307	11900
2.45	29.40	0.7468	117.5	52755	75.97	3329	11978
2.46	29.52	0.7498	118.3	53100	76.47	3351	12056
2.47	29.64	0.7529	119.1	53446	76.97	3373	12135
2.48	29.76	0.7559	119.9	53793	77.47	3394	12214
2.49	29.88	0.7590	120.6	54141	77.97	3416	12293
2.50	30.00	0.7620	121.4	54490	78.47	3438	12372

Sources:

Water Measurement Manual, 3rd Edition, United States Department of the Interior, Bureau of Reclamation

ASTM D 1941-91 (2007): Standard Test Method for Open Channel Flow Measurement of Water with Parshall Flume