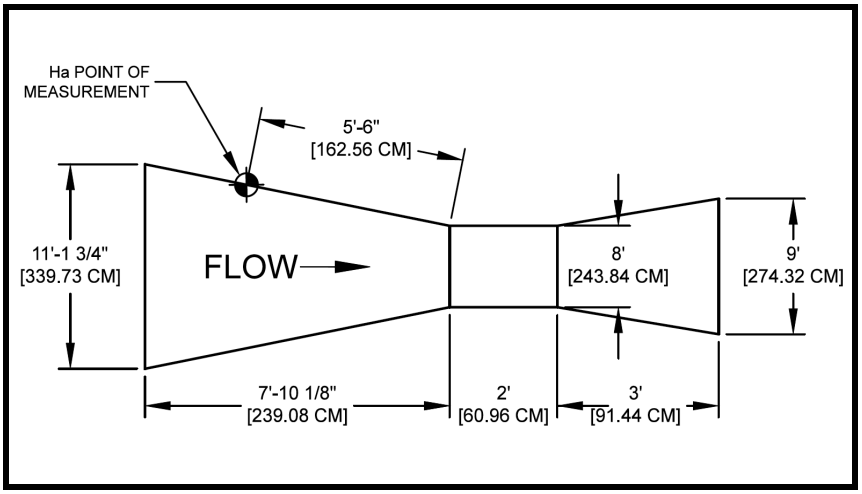
96-Inch Parshall Flume Discharge Table

70% Submergence Transition ±3-5% Accuracy

Formulas (H in feet): CFS = 32 $H_{ft.}^{1.607}$ GPM = 14362 $H_{ft.}^{1.607}$ MGD = 20.68 $H_{ft.}^{1.607}$

Formulas (H in meters): L/S = 6115 $H_{m}^{1.607}$ M3/HR = 22010 $H_{m}^{1.607}$

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	3.449	1548	2.229	97.66	351.4
0.26	3.12	0.0792	3.673	1648	2.374	104.0	374.3
0.27	3.24	0.0823	3.903	1751	2.522	110.5	397.7
0.28	3.36	0.0853	4.137	1857	2.674	117.2	421.6
0.29	3.48	0.0884	4.377	1965	2.829	124.0	446.1
0.30	3.60	0.0914	4.623	2075	2.988	130.9	471.0



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

96-Inch Parshall Flume Discharge Table

70% Submergence Transition ±3-5% Accuracy

Formulas (H in feet): CFS = 32.00 $H_{ft.}^{1.607}$ GPM = 14362 $H_{ft.}^{1.607}$ MGD = 20.68 $H_{ft.}^{1.607}$

Formulas (H in meters): L/S = 6115 $H_{m}^{1.607}$ M3/HR = 22010 $H_{m}^{1.607}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.31	3.72	0.0945	4.873	2187	3.149	138.0	496.5
0.32	3.84	0.0975	5.128	2301	3.314	145.2	522.5
0.33	3.96	0.1006	5.388	2418	3.482	152.6	549.0
0.34	4.08	0.1036	5.652	2537	3.653	160.1	576.0
0.35	4.20	0.1067	5.922	2658	3.827	167.7	603.5
0.36	4.32	0.1097	6.196	2781	4.005	175.5	631.4
0.37	4.44	0.1128	6.475	2906	4.185	183.4	659.8
0.38	4.56	0.1158	6.759	3033	4.368	191.4	688.7
0.39	4.68	0.1189	7.047	3163	4.554	199.6	718.1
0.40	4.80	0.1219	7.339	3294	4.743	207.9	747.9
0.41	4.92	0.1250	7.636	3427	4.935	216.3	778.2
0.42	5.04	0.1280	7.938	3563	5.130	224.8	808.9
0.43	5.16	0.1311	8.244	3700	5.328	233.5	840.1
0.44	5.28	0.1341	8.554	3839	5.529	242.3	871.7
0.45	5.40	0.1372	8.869	3980	5.732	251.2	903.7
0.46	5.52	0.1402	9.188	4123	5.938	260.2	936.2
0.47	5.64	0.1433	9.511	4268	6.147	269.3	969.1
0.48	5.76	0.1463	9.838	4415	6.358	278.6	1002
0.49	5.88	0.1494	10.17	4564	6.572	288.0	1036
0.50	6.00	0.1524	10.50	4715	6.789	297.5	1070
0.51	6.12	0.1554	10.84	4867	7.009	307.1	1105
0.52	6.24	0.1585	11.19	5021	7.231	316.9	1140
0.53	6.36	0.1615	11.54	5177	7.456	326.7	1176
0.54	6.48	0.1646	11.89	5335	7.683	336.7	1211
0.55	6.60	0.1676	12.24	5495	7.913	346.7	1248
0.56	6.72	0.1707	12.60	5656	8.146	356.9	1284
0.57	6.84	0.1737	12.97	5820	8.381	367.2	1321
0.58	6.96	0.1768	13.33	5985	8.618	377.6	1359
0.59	7.08	0.1798	13.71	6151	8.858	388.2	1397
0.60	7.20	0.1829	14.08	6320	9.101	398.8	1435
0.61	7.32	0.1859	14.46	6490	9.346	409.5	1473
0.62	7.44	0.1890	14.84	6662	9.593	420.4	1513
0.63	7.56	0.1920	15.23	6835	9.843	431.3	1552
0.64	7.68	0.1951	15.62	7010	10.10	442.4	1592
0.65	7.80	0.1981	16.01	7187	10.35	453.5	1632
0.66	7.92	0.2012	16.41	7366	10.61	464.8	1672
0.67	8.04	0.2042	16.81	7546	10.87	476.2	1713
0.68	8.16	0.2073	17.22	7728	11.13	487.6	1755
0.69	8.28	0.2103	17.63	7911	11.39	499.2	1796
0.70	8.40	0.2134	18.04	8096	11.66	510.9	1838
0.71	8.52	0.2164	18.46	8283	11.93	522.7	1881
0.72	8.64	0.2195	18.87	8471	12.20	534.5	1923
0.73	8.76	0.2225	19.30	8661	12.47	546.5	1966
0.74	8.88	0.2256	19.72	8852	12.75	558.6	2010
0.75	9.00	0.2286	20.15	9045	13.03	570.8	2054
0.76	9.12	0.2316	20.59	9240	13.31	583.1	2098
0.77	9.24	0.2347	21.03	9436	13.59	595.4	2142
0.78	9.36	0.2377	21.47	9634	13.87	607.9	2187
0.79	9.48	0.2408	21.91	9833	14.16	620.5	2233
0.80	9.60	0.2438	22.36	10034	14.45	633.2	2278

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96-Inch Parshall Flume Discharge Table

70% Submergence Transition ±3-5% Accuracy

Formulas (H in feet): CFS = 32 $H_{ft.}^{1.607}$ GPM = 14362 $H_{ft.}^{1.607}$ MGD = 20.68 $H_{ft.}^{1.607}$

Formulas (H in meters): L/S = 6115 $H_{m}^{1.607}$ M3/HR = 22010 $H_{m}^{1.607}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.81	9.72	0.2469	22.81	10236	14.74	645.9	2324
0.82	9.84	0.2499	23.26	10440	15.03	658.8	2370
0.83	9.96	0.2530	23.72	10645	15.33	671.7	2417
0.84	10.08	0.2560	24.18	10852	15.63	684.8	2464
0.85	10.20	0.2591	24.64	11061	15.93	697.9	2511
0.86	10.32	0.2621	25.11	11270	16.23	711.2	2559
0.87	10.44	0.2652	25.58	11482	16.53	724.5	2607
0.88	10.56	0.2682	26.06	11695	16.84	737.9	2655
0.89	10.68	0.2713	26.54	11909	17.15	751.5	2704
0.90	10.80	0.2743	27.02	12125	17.46	765.1	2753
0.91	10.92	0.2774	27.50	12342	17.77	778.8	2802
0.92	11.04	0.2804	27.99	12561	18.09	792.6	2852
0.93	11.16	0.2835	28.48	12781	18.41	806.5	2902
0.94	11.28	0.2865	28.97	13002	18.72	820.5	2952
0.95	11.40	0.2896	29.47	13225	19.05	834.5	3003
0.96	11.52	0.2926	29.97	13450	19.37	848.7	3054
0.97	11.64	0.2957	30.47	13676	19.69	862.9	3105
0.98	11.76	0.2987	30.98	13903	20.02	877.3	3157
0.99	11.88	0.3018	31.49	14132	20.35	891.7	3209
1.00	12.00	0.3048	32.00	14362	20.68	906.2	3261
1.01	12.12	0.3078	32.52	14593	21.01	920.8	3313
1.02	12.24	0.3109	33.03	14826	21.35	935.5	3366
1.03	12.36	0.3139	33.56	15060	21.69	950.3	3419
1.04	12.48	0.3170	34.08	15296	22.03	965.2	3473
1.05	12.60	0.3200	34.61	15533	22.37	980.2	3527
1.06	12.72	0.3231	35.14	15771	22.71	995.2	3581
1.07	12.84	0.3261	35.68	16011	23.06	1010	3635
1.08	12.96	0.3292	36.21	16252	23.40	1026	3690
1.09	13.08	0.3322	36.75	16495	23.75	1041	3745
1.10	13.20	0.3353	37.30	16739	24.10	1056	3801
1.11	13.32	0.3383	37.84	16984	24.46	1072	3856
1.12	13.44	0.3414	38.39	17230	24.81	1087	3912
1.13	13.56	0.3444	38.94	17478	25.17	1103	3968
1.14	13.68	0.3475	39.50	17728	25.53	1119	4025
1.15	13.80	0.3505	40.06	17978	25.89	1134	4082
1.16	13.92	0.3536	40.62	18230	26.25	1150	4139
1.17	14.04	0.3566	41.18	18483	26.62	1166	4197
1.18	14.16	0.3597	41.75	18738	26.98	1182	4254
1.19	14.28	0.3627	42.32	18994	27.35	1199	4312
1.20	14.40	0.3658	42.89	19251	27.72	1215	4371
1.21	14.52	0.3688	43.47	19509	28.09	1231	4430
1.22	14.64	0.3719	44.05	19769	28.47	1247	4489
1.23	14.76	0.3749	44.63	20030	28.84	1264	4548
1.24	14.88	0.3780	45.21	20292	29.22	1280	4607
1.25	15.00	0.3810	45.80	20556	29.60	1297	4667
1.26	15.12	0.3840	46.39	20821	29.98	1314	4727
1.27	15.24	0.3871	46.99	21087	30.37	1331	4788
1.28	15.36	0.3901	47.58	21354	30.75	1348	4849
1.29	15.48	0.3932	48.18	21623	31.14	1364	4910
1.30	15.60	0.3962	48.78	21893	31.53	1381	4971

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OPENCHANNELFLOW

96-Inch Parshall Flume Discharge Table

70% Submergence Transition ±3-5% Accuracy

Formulas (H in feet): CFS = 32 $H_{ft.}^{1.607}$ GPM = 14362 $H_{ft.}^{1.607}$ MGD = 20.68 $H_{ft.}^{1.607}$

Formulas (H in meters): L/S = 6115 $H_{m}^{1.607}$ M3/HR = 22010 $H_{m}^{1.607}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
1.31	15.72	0.3993	49.39	22164	31.92	1399	5032
1.32	15.84	0.4023	49.99	22437	32.31	1416	5094
1.33	15.96	0.4054	50.60	22711	32.70	1433	5156
1.34	16.08	0.4084	51.22	22986	33.10	1450	5219
1.35	16.20	0.4115	51.83	23262	33.50	1468	5282
1.36	16.32	0.4145	52.45	23540	33.90	1485	5345
1.37	16.44	0.4176	53.07	23818	34.30	1503	5408
1.38	16.56	0.4206	53.70	24098	34.70	1521	5472
1.39	16.68	0.4237	54.32	24380	35.11	1538	5535
1.40	16.80	0.4267	54.95	24662	35.52	1556	5600
1.41	16.92	0.4298	55.58	24946	35.92	1574	5664
1.42	17.04	0.4328	56.22	25231	36.33	1592	5729
1.43	17.16	0.4359	56.86	25517	36.75	1610	5794
1.44	17.28	0.4389	57.50	25804	37.16	1628	5859
1.45	17.40	0.4420	58.14	26093	37.58	1646	5924
1.46	17.52	0.4450	58.78	26383	37.99	1665	5990
1.47	17.64	0.4481	59.43	26674	38.41	1683	6056
1.48	17.76	0.4511	60.08	26966	38.83	1702	6123
1.49	17.88	0.4542	60.74	27259	39.25	1720	6189
1.50	18.00	0.4572	61.39	27554	39.68	1739	6256
1.51	18.12	0.4602	62.05	27850	40.11	1757	6323
1.52	18.24	0.4633	62.72	28147	40.53	1776	6391
1.53	18.36	0.4663	63.38	28445	40.96	1795	6458
1.54	18.48	0.4694	64.05	28744	41.39	1814	6526
1.55	18.60	0.4724	64.72	29045	41.83	1833	6595
1.56	18.72	0.4755	65.39	29346	42.26	1852	6663
1.57	18.84	0.4785	66.06	29649	42.70	1871	6732
1.58	18.96	0.4816	66.74	29953	43.13	1890	6801
1.59	19.08	0.4846	67.42	30259	43.57	1909	6870
1.60	19.20	0.4877	68.10	30565	44.02	1929	6940
1.61	19.32	0.4907	68.79	30873	44.46	1948	7010
1.62	19.44	0.4938	69.48	31181	44.90	1968	7080
1.63	19.56	0.4968	70.17	31491	45.35	1987	7150
1.64	19.68	0.4999	70.86	31802	45.80	2007	7221
1.65	19.80	0.5029	71.56	32114	46.25	2026	7292
1.66	19.92	0.5060	72.25	32428	46.70	2046	7363
1.67	20.04	0.5090	72.96	32742	47.15	2066	7434
1.68	20.16	0.5121	73.66	33058	47.61	2086	7506
1.69	20.28	0.5151	74.36	33375	48.06	2106	7578
1.70	20.40	0.5182	75.07	33693	48.52	2126	7650
1.71	20.52	0.5212	75.78	34012	48.98	2146	7722
1.72	20.64	0.5243	76.50	34332	49.44	2166	7795
1.73	20.76	0.5273	77.21	34653	49.90	2187	7868
1.74	20.88	0.5304	77.93	34976	50.37	2207	7941
1.75	21.00	0.5334	78.65	35299	50.83	2227	8015
1.76	21.12	0.5364	79.38	35624	51.30	2248	8088
1.77	21.24	0.5395	80.10	35950	51.77	2268	8162
1.78	21.36	0.5425	80.83	36277	52.24	2289	8237
1.79	21.48	0.5456	81.56	36605	52.71	2310	8311
1.80	21.60	0.5486	82.29	36934	53.19	2331	8386

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96-Inch Parshall Flume Discharge Table

70% Submergence Transition ±3-5% Accuracy

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Formulas (H in meters): L/S = 6115 $H_{m}^{1.607}$ M3/HR = 22010 $H_{m}^{1.607}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
1.81	21.72	0.5517	83.03	37264	53.66	2351	8461
1.82	21.84	0.5547	83.77	37596	54.14	2372	8536
1.83	21.96	0.5578	84.51	37928	54.62	2393	8612
1.84	22.08	0.5608	85.25	38262	55.10	2414	8687
1.85	22.20	0.5639	86.00	38596	55.58	2436	8763
1.86	22.32	0.5669	86.75	38932	56.06	2457	8840
1.87	22.44	0.5700	87.50	39269	56.55	2478	8916
1.88	22.56	0.5730	88.25	39607	57.04	2499	8993
1.89	22.68	0.5761	89.01	39946	57.53	2521	9070
1.90	22.80	0.5791	89.76	40287	58.02	2542	9147
1.91	22.92	0.5822	90.53	40628	58.51	2564	9225
1.92	23.04	0.5852	91.29	40970	59.00	2585	9302
1.93	23.16	0.5883	92.05	41314	59.49	2607	9380
1.94	23.28	0.5913	92.82	41658	59.99	2629	9458
1.95	23.40	0.5944	93.59	42004	60.49	2651	9537
1.96	23.52	0.5974	94.36	42350	60.99	2672	9616
1.97	23.64	0.6005	95.14	42698	61.49	2694	9695
1.98	23.76	0.6035	95.92	43047	61.99	2716	9774
1.99	23.88	0.6066	96.70	43397	62.49	2738	9853
2.00	24.00	0.6096	97.48	43748	63.00	2761	9933
2.01	24.12	0.6126	98.26	44100	63.51	2783	10013
2.02	24.24	0.6157	99.05	44453	64.02	2805	10093
2.03	24.36	0.6187	99.84	44807	64.53	2827	10173
2.04	24.48	0.6218	100.6	45163	65.04	2850	10254
2.05	24.60	0.6248	101.4	45519	65.55	2872	10335
2.06	24.72	0.6279	102.2	45876	66.06	2895	10416
2.07	24.84	0.6309	103.0	46235	66.58	2917	10498
2.08	24.96	0.6340	103.8	46594	67.10	2940	10579
2.09	25.08	0.6370	104.6	46955	67.62	2963	10661
2.10	25.20	0.6401	105.4	47316	68.14	2986	10743
2.11	25.32	0.6431	106.2	47679	68.66	3009	10825
2.12	25.44	0.6462	107.0	48042	69.18	3032	10908
2.13	25.56	0.6492	107.9	48407	69.71	3055	10991
2.14	25.68	0.6523	108.7	48773	70.24	3078	11074
2.15	25.80	0.6553	109.5	49140	70.76	3101	11157
2.16	25.92	0.6584	110.3	49507	71.29	3124	11241
2.17	26.04	0.6614	111.1	49876	71.82	3147	11324
2.18	26.16	0.6645	112.0	50246	72.36	3171	11408
2.19	26.28	0.6675	112.8	50617	72.89	3194	11493
2.20	26.40	0.6706	113.6	50989	73.43	3217	11577
2.21	26.52	0.6736	114.4	51362	73.96	3241	11662
2.22	26.64	0.6767	115.3	51736	74.50	3265	11747
2.23	26.76	0.6797	116.1	52111	75.04	3288	11832
2.24	26.88	0.6828	116.9	52487	75.58	3312	11917
2.25	27.00	0.6858	117.8	52864	76.13	3336	12003
2.26	27.12	0.6888	118.6	53242	76.67	3360	12089
2.27	27.24	0.6919	119.5	53621	77.22	3384	12175
2.28	27.36	0.6949	120.3	54001	77.77	3408	12261
2.29	27.48	0.6980	121.2	54382	78.31	3432	12348
2.30	27.60	0.7010	122.0	54765	78.86	3456	12434

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Formulas (H in meters): $L/S = 6115\ H_{m}^{1.607}$ $M3/HR = 22010\ H_{m}^{1.607}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
2.31	27.72	0.7041	122.9	55148	79.42	3480	12521
2.32	27.84	0.7071	123.7	55532	79.97	3504	12608
2.33	27.96	0.7102	124.6	55917	80.52	3528	12696
2.34	28.08	0.7132	125.5	56303	81.08	3553	12784
2.35	28.20	0.7163	126.3	56690	81.64	3577	12872
2.36	28.32	0.7193	127.2	57078	82.20	3602	12960
2.37	28.44	0.7224	128.0	57468	82.76	3626	13048
2.38	28.56	0.7254	128.9	57858	83.32	3651	13137
2.39	28.68	0.7285	129.8	58249	83.88	3676	13225
2.40	28.80	0.7315	130.7	58641	84.45	3700	13314
2.41	28.92	0.7346	131.5	59034	85.01	3725	13404
2.42	29.04	0.7376	132.4	59428	85.58	3750	13493
2.43	29.16	0.7407	133.3	59824	86.15	3775	13583
2.44	29.28	0.7437	134.2	60220	86.72	3800	13673
2.45	29.40	0.7468	135.1	60617	87.29	3825	13763
2.46	29.52	0.7498	136.0	61015	87.87	3850	13853
2.47	29.64	0.7529	136.8	61414	88.44	3875	13944
2.48	29.76	0.7559	137.7	61814	89.02	3901	14035
2.49	29.88	0.7590	138.6	62215	89.59	3926	14126
2.50	30.00	0.7620	139.5	62617	90.17	3951	14217

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