Manitoba Sizing Chart for 24" Wide Trench Fields

Soil Type		Perc Rate (min/inch)	App. Rate (igpd/sf)	Number of Bedrooms (igpd shown below bedrooms) - Length of Trench (feet)														
				Stone Trench (24"W x 12"H)					Stone Trench (24"W x 18"H)					Stone Trench (24"W x 24"H)				
				2	3	4	5	Each	2	3	4	5	Each	2	3	4	5	Each
				220	330	440	550	Add. BR	220	330	440	550	Add. BR	220	330	440	550	Add. BR
Coarse to Medium Sand	Modified Surface/ Subsurface Systems	1-5	0.60	122	183	244	306	61	105	157	210	262	35	92	138	183	229	31
Fine Sand Sandy Loam		6-10	0.60	122	183	244	306	61	105	157	210	262	35	92	138	183	229	31
		11-15	0.60	122	183	244	306	61	105	157	210	262	35	92	138	183	229	31
		16-20	0.55	133	200	267	333	67	114	171	229	286	38	100	150	200	250	33
		21-25	0.50	147	220	293	367	73	126	189	251	314	42	110	165	220	275	37
		26-30	0.45	163	244	326	407	81	140	210	279	349	47	122	183	244	306	41
Silty Loam		31-35	0.41	179	268	358	447	89	153	230	307	383	51	134	201	268	335	45
		36-40	0.37	198	297	396	495	99	170	255	340	425	57	149	223	297	372	50
		41-45	0.34	216	324	431	539	108	185	277	370	462	62	162	243	324	404	54
		46-50	0.31	237	355	473	591	118	203	304	406	507	68	177	266	355	444	59
		51-55	0.28	262	393	524	655	131	224	337	449	561	75	196	295	393	491	65
		56-60	0.26	282	423	564	705	141	242	363	484	604	81	212	317	423	529	71
Clay Loam		61-65	0.24	306	458	611	764	153	262	393	524	655	87	229	344	458	573	76
		66-70	0.22	333	500	667	833	167	286	429	571	714	95	250	375	500	625	83
		71-75	0.20	367	550	733	917	183	314	471	629	786	105	275	413	550	688	92
		76-80	0.18	407	611	815	1019	204	349	524	698	873	116	306	458	611	764	102
	Modified System	81-120	0.17	431	647	863	1078	216	370	555	739	924	123	324	485	647	809	108
		> 120	Modified aboveground system. See soil texture classification matrix.															

Length of System (feet)

Notes:

1. Length of trench is calculated based on loading rates defined in the EPA Design Manual: "Onsite Wastewater Treatment and Disposal".
   (the application rate (gpd/sf) has been reduced from 1.2 to 0.8 in coarse to medium sands and from 1.0 to 0.7 in fine to loamy sands based on current research).
   Stone Trench Rating (24"W x 12"H) = 3 sq. ft./ ft.
   Stone Trench Rating (24"W x 18"H) = 3.5 sq. ft./ ft.
   Stone Trench Rating (24"W x 24"H) = 4 sq. ft./ ft.
2. The minimum size home for wastewater system design shall be a 2 bedroom house.
3. Length of System Based upon the following: Length of Trench = (Daily Sewage Flow)/[(Application Rate) x (Application Area)]
   Length of Trench (ft) - lineal length of trench required for field
   Daily Sewage Flow (igpd) - volume produced on a daily basis, 110 igpd/bedroom
   Application Rate (igpd/sq. ft.) - application rate given, based upon US EPA
   Application Area (sq. ft.) - area of base of trench plus area of .5 of height of trench

Table 11: 24" Stone Trench - Imperial

July 2005

Manitoba Sizing Chart for 36" Wide Trench Fields

Soil Type		Perc Rate (min/inch)	App. Rate (igpd/sf)	Number of Bedrooms (igpd shown below bedrooms) - Length of Trench (feet)															
				Stone Trench (36"W x 12"H)					Stone Trench (36"W x 18"H)					Stone Trench (36"W x 24"H)					
				2	3	4	5	Each	2	3	4	5	Each	2	3	4	5	Each
				220	330	440	550	Add. BR	220	330	440	550	Add. BR	220	330	440	550	Add. BR
Coarse to Medium Sand	Modified Surface/ Subsurface Systems	1-5	0.60	92	138	183	229	31	81	122	163	204	27	73	110	147	183	24
Fine Sand Sandy Loam		6-10	0.60	92	138	183	229	31	81	122	163	204	27	73	110	147	183	24
		11-15	0.60	92	138	183	229	31	81	122	163	204	27	73	110	147	183	24
		16-20	0.55	100	150	200	250	33	89	133	178	222	30	80	120	160	200	27
		21-25	0.50	110	165	220	275	37	98	147	196	244	33	88	132	176	220	29
		26-30	0.45	122	183	244	306	41	109	163	217	272	36	98	147	196	244	33
Silty Loam		31-35	0.41	134	201	268	335	45	119	179	238	298	40	107	161	215	268	36
		36-40	0.37	149	223	297	372	50	132	198	264	330	44	119	178	238	297	40
		41-45	0.34	162	243	324	404	54	144	216	288	359	48	129	194	259	324	43
		46-50	0.31	177	266	355	444	59	158	237	315	394	53	142	213	284	355	47
		51-55	0.28	196	295	393	491	65	175	262	349	437	58	157	236	314	393	52
		56-60	0.26	212	317	423	529	71	188	282	376	470	63	169	254	338	423	56
Clay Loam		61-65	0.24	229	344	458	573	76	204	306	407	509	68	183	275	367	458	61
		66-70	0.22	250	375	500	625	83	222	333	444	556	74	200	300	400	500	67
		71-75	0.20	275	413	550	688	92	244	367	489	611	81	220	330	440	550	73
		76-80	0.18	306	458	611	764	102	272	407	543	679	91	244	367	489	611	81
	Modified System	81-120	0.17	324	485	647	809	108	288	431	575	719	96	259	388	518	647	86
		> 120	Modified aboveground system. See soil texture classification matrix.																

Length of System (feet)

Notes:

1. Length of trench is calculated based on loading rates defined in the EPA Design Manual: "Onsite Wastewater Treatment and Disposal".
   (the application rate (gpd/sf) has been reduced from 1.2 to 0.8 in coarse to medium sands and from 1.0 to 0.7 in fine to loamy sands based on current research).
   Stone Trench Rating (36"W x 12"H) = 4 sq. ft./ft.
   Stone Trench Rating (36"W x 18"H) = 4.5 sq. ft./ ft.
   Stone Trench Rating (36"W x 24"H) = 5 sq. ft./ ft.
2. The minimum size home for wastewater system design shall be a 2 bedroom house.
3. Length of System Based upon the following: Length of Trench = (Daily Sewage Flow)/[(Application Rate) x (Application Area)]

   Length of Trench (ft) - lineal length of trench required for field

   Daily Sewage Flow (igpd) - volume produced on a daily basis, 110 igpd/bedroom

   Application Rate (igpd/sq. ft.) - application rate given, based upon US EPA

   Application Area (sq. ft.) - area of base of trench plus area of .5 of height of trench

Table 12: 36" Stone Trench - Imperial

July 2005

Manitoba Infiltrator® Chamber Sizing Chart for Trench Fields

Soil Type		Perc Rate (min/inch)	App. Rate (igpd/sf)	Number of Bedrooms (igpd shown below bedrooms) - Length of Trench (feet)															
				Equalizer® 36					Standard H-10					High Capacity Sidewinder®					
				2	3	4	5	Each	2	3	4	5	Each	2	3	4	5	Each
				220	330	440	550	Add. BR	220	330	440	550	Add. BR	220	330	440	550	Add. BR
Coarse to Medium Sand	Modified Surface/ Subsurface Systems	1-5	0.60	105	157	210	262	35	85	128	171	213	28	76	115	153	191	51
Fine Sand Sandy Loam		6-10	0.60	105	157	210	262	35	85	128	171	213	28	76	115	153	191	51
		11-15	0.60	105	157	210	262	35	85	128	171	213	28	76	115	153	191	51
		16-20	0.55	114	171	229	286	38	93	140	186	233	31	83	125	167	208	56
		21-25	0.50	126	189	251	314	42	102	153	205	256	34	92	138	183	229	61
		26-30	0.45	140	210	279	349	47	114	171	227	284	38	102	153	204	255	68
Silty Loam		31-35	0.41	153	230	307	383	51	125	187	250	312	42	112	168	224	279	75
		36-40	0.37	170	255	340	425	57	138	207	277	346	46	124	186	248	310	83
		41-45	0.34	185	277	370	462	62	150	226	301	376	50	135	202	270	337	90
		46-50	0.31	203	304	406	507	68	165	248	330	413	55	148	222	296	370	99
		51-55	0.28	224	337	449	561	75	183	274	365	457	61	164	246	327	409	109
		56-60	0.26	242	363	484	604	81	197	295	394	492	66	176	264	353	441	118
Clay Loam		61-65	0.24	262	393	524	655	87	213	320	426	533	71	191	286	382	477	127
		66-70	0.22	286	429	571	714	95	233	349	465	581	78	208	313	417	521	139
		71-75	0.20	314	471	629	786	105	256	384	512	640	85	229	344	458	573	153
		76-80	0.18	349	524	698	873	116	284	426	568	711	95	255	382	509	637	170
	Modified System	81-120	0.17	370	555	739	924	123	301	451	602	752	100	270	404	539	674	180
		> 120	Modified aboveground system. See soil texture classification matrix.																

Length of System (feet)

Notes:

1. Number of chambers is calculated based on loading rates defined in the EPA Design Manual: "Onsite Wastewater Treatment and Disposal" and the following chamber equivalencies:
   (the application rate (gpd/sf) has been reduced from 1.2 to 0.8 in coarse to medium sands and from 1.0 to 0.7 in fine to loamy sands based on current research).
   EQ36 Rating = 3.5 sf.kf
   Standard H-10 rating = 4.3 sf/lf
   High Capacity Sidewinder = 4.8 sf/lf
2. The minimum size home for wastewater system design shall be a 2 bedroom house.
3. Length of System Based upon the following: Length of Trench = (Daily Sewage Flow)/[(Application Rate) x (Application Area)]
   Length of Trench (ft) - lineal length of trench required for field
   Daily Sewage Flow (igpd) - volume produced on a daily basis, 110 igpd/bedroom
   Application Rate (igpd/sq. ft.) - application rate given, based upon US EPA
   Application Area (sq. ft.) - area of base of trench plus area of .5 of height of trench

Table 13: Infiltrator® Chamber - Imperial

July 2005

Manitoba Sizing Chart for Total Area Fields

Soil Type		Perc Rate (min/inch)	App. Rate (igpd/sf)	Number of Bdrms (igpd) - Area of Field (sq.ft.) / cubic yards of stone required									
				Stone Total Area System					Chamber Total Area System				
				2 220	3 330	4 440	5 550	Each Add. BR	2 220	3 330	4 440	5 550	Each Add. BR
Coarse to Medium Sand	Modified Surface/ Subsurface Systems	1-5	0.60	733 75	1100 110	1467 145	1833	367	550	825	1100	1375	275
Fine Sand Sandy Loam		6-10	0.60	733 75	1100 110	1467 145	1833	367	550	825	1100	1375	275
		11-15	0.60	733 75	1100 110	1467 145	1833	367	550	825	1100	1375	275
		16-20	0.55	800 80	1200 120	1600 160	2000	400	600	900	1200	1500	300
		21-25	0.50	560 85	1320 130	1760 170	2200	440	660	990	1320	1650	330
		26-30	0.45	978 95	1467 145	1956 190	2444	489	733	1100	1467	1833	367
Silty Loam		31-35	0.41	1073 105	1610 160	2146 210	2683	537	805	1207	1610	2012	402
		36-40	0.37	1189 120	1784 175	2378 235	2973	595	892	1338	1784	2230	446
		41-45	0.34	1294 130	1941 190	2588 256	3235	647	971	1456	1941	2426	485
		46-50	0.31	1419 140	2129 210	2839 280	3548	710	1065	1597	2129	2661	532
		51-55	0.28	1571 155	2357 235	3143 310	3929	786	1179	1768	2357	2946	589
		56-60	0.26	1692 170	2538 250	3385 335	4231	846	1269	1904	2538	3173	635

Notes:

1. Total Area Field is calculated based on loading rates defined in the EPA Design Manual: "Onsite Wastewater Treatment and Disposal". (the application rate (gpd/sf) has been reduced from 1.2 to 0.8 in coarse to medium sands and from 1.0 to 0.7 in fine to loamy sands based on current research).
2. The minimum size home for wastewater system design shall be a 2 bedroom house.
3. Area of Field Based upon the following: Area of Field = (Daily Effluent Flow) x (Safety Factor) / (Application Rate)

   Area of Field (sq.ft.) - total required disposal field surface area

   Daily Effluent Flow (igpd) - volume produced on a daily basis, 110 igpd/bedroom

   Application Rate (igpd/sq. ft.) - application rate given, based upon US EPA

   Safety Factor - is a factor of 2.0 for graded stone and pipe systems and 1.5 for chamber/aggregate-free systems

Table 15: Total Area - Imperial

July 2005