



BOD₅ Loading Chart

The H-Series Hoot System was tested in 2001 according to the ANSI/NSF Standard 40, 2000 at Baylor University in Waco, Texas. The Standard calls for a range of 30 Day Averages of BOD₅ strength to fall between 100 mg/L and 300 mg/L. Influent sewage strength in BOD₅ for the H-500A system during the 6 month test ranged from 63 mg/L to 377 mg/L with an average strength of 196 mg/L.

Designers can use the following chart to determine the appropriate system to choose for the sewage strength of the influent. The average column is what the system was tested at (196 mg/L) which should be used as a baseline to determine the system needed. For reference, each person generates between 0.16 to 0.21 lbs of BOD₅ per day.

$$(\text{GPD}) (\text{Strength in mg/L}) (.00000834) = \text{lbs. of BOD}_5 \text{ per day}$$

System Size	Low 100 mg/L	Average 196 mg/L	High 300 mg/L	# of People Range	Recommended # of People
500	0.42	0.82	1.25	2-6	5
600	0.50	0.98	1.5	2-7	6
750	0.63	1.23	1.88	4-8	8
900	0.75	1.47	2.25	4-9	9
1000	0.83	1.63	2.50	4-10	10
1200	1.00	1.96	3.00	6-12	12

All numbers in mg/L above are lbs. of BOD₅ per day.

The higher the strength in BOD₅, the higher the TSS levels will be as well. Although the correlation of non-digestible solids to BOD₅ strength is not exact, it should be used as a comparison. Systems with higher TSS levels will build up solids that need to be pumped out at more frequent intervals. For example, a system with a 200 TSS average will need to be pumped out at an interval twice as regularly as a system that is loaded at 100 TSS strength.

Designers may use Hoot Systems residential treatment plants if designed according to the loading chart above. When sewage strength is above the average numbers above, then a reduction in the number of gallons of flow can compensate for the increased strength. Additionally, the systems can be flow equalized and meter dosed to increase capacity and ensure optimum performance.

Please consult directly with Hoot for applications that fall outside of these average strengths.