



Geotextile Tube Volumes & Dewatering Capabilities

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TUBE VOLUMES							
Circumference (ft)	End Area (sf)	Theoretical Volume @ 100% Solids (cy) per Tube Length					
		50'	100'	150'	200'	250'	300'
15	17.9	33.2	66.3	100.0	132.6	166.0	199.0
30	71.6	132.6	265.2	397.8	530.4	663.0	795.6
45	161.1	298.3	596.7	895.0	1193.2	1491.5	1790.0
60	286.4	530.4	1060.7	1591.1	2121.6	2652.0	3182.2
75	447.5	828.7	1657.4	2486.1	3314.8	4143.5	4972.2
90	644.4	1193.3	2386.7	3580.0	4797.2	5996.5	7160.0

TUBE DEWATERING CAPABILITIES		
Circumference (ft)	Max. Fill Height (ft)	Max. Capacity (cy/lf)
7.5	1.75	0.25
15	3.0	0.55
22.5	3.75	1.50
30	4.5	2.00
45	5.5	3.45
60	6.5	5.50

Sample Problem: A factory produces widgets. During production, a waste product is produced that is pumped into a dike ringed holding lagoon. Eventually, the lagoon sludge must be removed. Hauling it off in tankers is too expensive, so it must be dewatered.

Given:

- 1) In-situ percent of solids is 10%.
- 2) Quantity is 40,000 cy (in-situ).

Assumptions:

- 1) Owner wants to increase solids to 40%.
- 2) Laydown area lends itself to 60" tubes.

Calculations:

$$40,000 \text{ cy @ } 10\% = 10,000 \text{ cy @ } 40\%$$

$$60' \times 200' \text{ tube holds } 2,121 \text{ cy @ } 100\% \text{ \& } 848 \text{ cy @ } 40\%$$

Therefore: 10,000 cy / 848 cy = 12 tubes required