

ANNEX 5: WASTEWATER DISPOSAL SYSTEM & SIZING

Designing of Septic Tanks & Absorption Pits for Asphalt Production Facility	
<u>Domestic Wastewater Handling:</u>	
Number of Employees: 25	25
Assuming that wastewater generation per person per day / L	100
Total wastewater generated per day /m ³	2.5
Septic tank	
Retention time /days	2
Total volume of wastewater in septic tank / m ³	5
Assuming a sludge collection rate per person : / L / annum	30
Total amount of sludge / m ³	0.75
Thus, total volume of Septic Tank required / m ³	5.75
Assuming depth of septic tank/ m	1.2
Area of septic tank /m ²	4.79
It is assumed that a 2-chamber septic tank will be used on the Hatchery Plant.	2
<u>According to design specifications,</u>	
Ratio of length to width is assumed to be 3:1,	
Thus,	
Width of septic tank /m	1.26
Therefore, Length of septic tank / m	3.79
A freeboard of 0.5 m is also accounted for the depth of the septic tank according to design guidelines.	
Absorption Pit	
Total flow rate of wastewater / L/day	250 0
Assuming high permeability of soil,	
Infiltration rate / L/m ² day	50
Therefore, Area of absorption pit /50 m ²	50
Assuming, diameter of absorption pit /m	4
Therefore depth of absorption pit /m	3.98