Comments about the Gudhavanwadi Check Dam, Field Visit on November 18, 2006.

Note by: Gangotree Resource Developers Pvt. Ltd., Pune

Following persons accompanied the field visit:

1. Mr. Milind Sohoni, IIT, Mumbai
2. Mr. Amitabh Deshpande, IITan, Pune
3. Mr. Santosh Gondhalekar, Gangotree, Pune
4. Mr. Prafulla Hande, Gangotree, Pune
5. Mr. Ashok D. Gadre, Gangotree, Pune

Status of the Check Dam:

The dam had earlier filled up to Full Supply Level (FSL) and over flow through the waste weir has taken place many times during the monsoon 2006. All the floods have passed safely and the pilot channel has been very effective as erosion in tail channel is restricted to pilot cut only. No erosion is seen at the flank wall and guide bunds in tail channel. A small percolation is seen in the main gorge portion through the main drain. Side drains are filled due to rains.

Measurements of percolations were carried out at site with available means as below;

Two points, at 3.0 meters apart were marked in possible straight reach. A float (grass) was let out in stream and time measured in seconds between the two points. Midway section was measured for cross section, which was observed as below –

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Chainage in meter</th>
<th>Depth up to water face in meter</th>
<th>Area of portion in sq.m.</th>
<th>Total area in sq.m.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.0</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0.1</td>
<td>0.015</td>
<td>0.00075</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0.2</td>
<td>0.035</td>
<td>0.00250</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>0.3</td>
<td>0.025</td>
<td>0.00300</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>0.4</td>
<td>0.000</td>
<td>0.00125</td>
<td>0.0075</td>
</tr>
</tbody>
</table>

Calculation of velocity:
Surface velocity = Distance / Time = 3 / 24 = 0.125 m / sec.
Mean velocity = 0.6 times surface velocity = 0.6 x 0.125 = 0.075 m / sec.

Discharge = Area x Velocity = 0.0075 x 0.075 = 0.0005625 cumec = 0.5625 l / sec.

It is observed that the water level in the tank was just lower by 1.05 meters below full supply level and conditions of saturations were at its peak. The rains have recently stopped and winter is on. Summer is to follow. Under these conditions the percolation in the check dam is negligible.

Recommendations: (Further Works)

1. The approach channel obstruction should be cleared for road portion on up stream side of waste weir.
2. The portion of dam near flank wall should be filled to Top Bund Level.
3. The cross drains silted should be opened and joined by carry over drain.

These works could be implemented by the Water Committee.

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