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## Smith Mountain Lake - Water Treatment Facility

### Lake Statistics

- 1) Smith Mountain Lake has a surface area of more than 20,600 acres, or 32 square miles.<sup>1</sup>
- 2) The Lake's deepest point is about 212 feet, near the dam itself. Its "average" depth is 55 feet. Outside the lake's many coves in its main channel, 80-150 feet is typical.
- 3) The first foot of water on the surface of the lake contains more than 6,516,576,000 gallons of water.
- 4) The first inch of water on the lake surface contains more than 543,048,000 gallons of water.
- 5) The average amount of water lost to evaporation each day is 0.23 inches.<sup>2</sup>
- 6) The daily variation for electricity production is 12 to 24 inches.<sup>3</sup>
- 7) The average annual daily inflow to Smith Mountain Lake is 631 million gallons per day (MGD).<sup>4</sup>
  - a) Below are the historic average daily inflow values by month for Smith Mountain Lake:

<u>Month</u>	<u>Average Daily Inflow (in MGD)</u>
January	790
February	952
March	1,116
April	1,024
May	700
June	505
July	332
August	375
September	342
October	429
November	462
December	564
<b>Annual Average</b>	<b>631</b>
<b>Max. Mean Daily</b>	<b>33,170</b>
<b>Min. Mean Daily</b>	<b>33</b>

- 8) AEP releases an average of 650 cubic feet per second all day every day, which equates to 420 MGD.
  - a) There are 3 different trigger events, that allow AEP to reduce the downstream release<sup>5</sup>
- 9) The water level every hour can be tracked at this website:  
<http://www.smithmountainlakelevel.com/Scripts/SMLLevelWeb.exe/period>
- 10) The water treatment facility can treat as much as an average of 6,000,000 gallons per day.
  - a) If there was zero inflow into the lake each day (through the rivers, streams, and rainfall), the lake level would be lowered 0.011 inches in a day based on the maximum withdrawal.
  - b) With the inflow shown above, the withdraw equates to less than 1% of what is coming in.

<sup>1</sup> Charting a Course for Smith Mountain Lake: Background Studies for Lake Planning; November 1996

<sup>2</sup> [Virginia DEQ Modeling Support Document](#)

<sup>3</sup> [Smith Mountain Project - AEP: http://www.smithmtn.com](#)

<sup>4</sup> 2008 FERC Report to the Authority

<sup>5</sup> [http://www.smithmtn.com/Resources/docs/WaterManagementPlan\\_6-2010withFinalFERCOrder.pdf](http://www.smithmtn.com/Resources/docs/WaterManagementPlan_6-2010withFinalFERCOrder.pdf)