Calculating SOx Emissions Levels

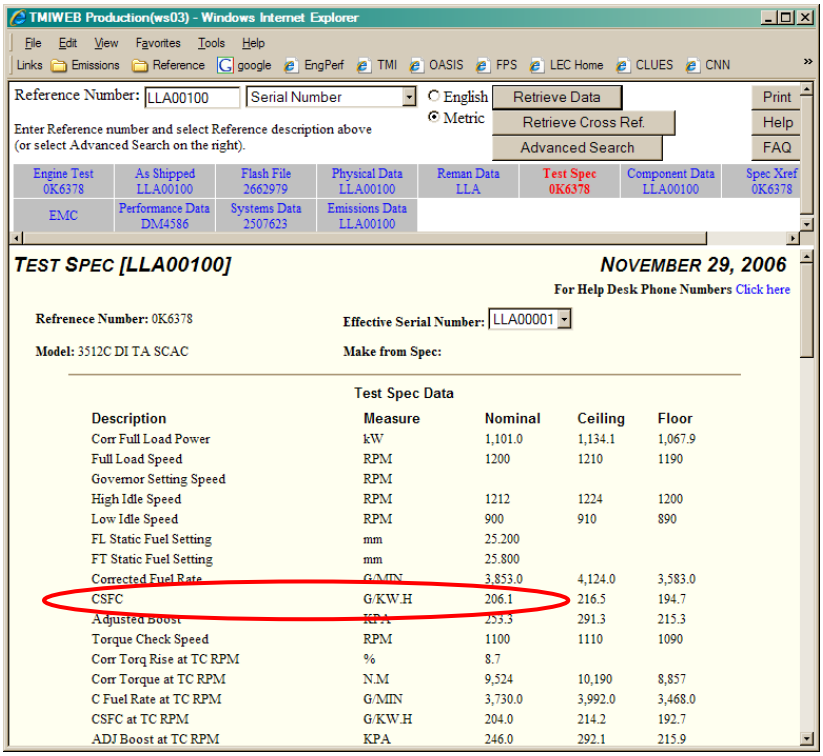
For SOx as SO_2 , calculate the SO_2 by using the equation:

SO_2 mg/hr = 1.998 x (fuel rate gm/hr) x (% fuel sulfur by weight / 100) x 1000 mg / g

because for diesel engines all of the Sulfur in the exhaust can be assumed to come from the combustion of the Sulfur compounds present in the fuel. The factor comes from:
MW Sulfur = 32.066, MW Oxygen = 15.999, MW SO_2 = 64.064
So Ratio of MWs of SO_2 to S = 1.9979

Example:

1. Look up CSFC [specific fuel consumption] in the TMI database using either the engine serial number or test specification number. Eg – for LLA00100



2. Use engine test spec number to get CSFC = 206.1 g/kw-hr

   SO_2 mg/hr = 1.998 x 206.1 g/kw-hr x (0.05 % Sulfur in Fuel / 100) x 1000 mg / g

   SO_2 = 205.894 mg/kw-hr

   SO_2 = 0.21 g/kw-hr

Updated by DWMahoney 2006-11-29