

## Engine Map Data Sheet

**Regulatory references: 40 CFR 1065.510 and 1065.501**

	Engine Family
	Date of Map
	Ambient Conditions of Engine Map
	Barometer
	Temperature
	Humidity
	Indicate Step or Continuous Sweep Map (1065(b)(5)(i))
	Record Checkpoint Speed
	<b>If Checkpoint Speed Not Achieved, Provide explanation</b>
YES/NO	Unsafe-- (you should describe why it is unsafe)
YES/NO	Unachievable (rev Limiter or Governor)
	<b>If Engine Governed indicate Speed Setting</b>
YES/NO	Governor?
YES/NO	Rev Limiter?
	Speed Setting of Above
	<b>Describe the method of speed limitation</b>
	<b>Describe how you notify your customers or the installer of a proper speed range this engine can be operated, and what maximum rpm</b>
	<b>On The Map Data Sheet, Identify the following values from 1065.501(f):</b>
	$P_{max}$
	High and Low values of 98% $P_{max}$ (interpolate if needed)
	$F_n P_{max}$
	Maximum Value of $\Sigma(P_{norm}^2 + f_{norm}^2)$
	High and low 98% points of $\Sigma(P_{norm}^2 + f_{norm}^2)$ (interpolate if necessary)
	$f_{ntest}$ , maximum test speed
	If the provisions of 1065.501(f) is used, state the declared Maximum of the measured maximum test speed)
	Additionally you should supply the following information in spreadsheet form: Provide the timebase, speed, load, and power data for the power analysis. Show your work in tabulating $P_{norm}$ (normalized power) and $f_{norm}$ (normalized speed). Show your work in tabulating $\Sigma(P_{norm}^2 + f_{norm}^2)$ Identify all of the above values in the analysis If you cannot identify the higher 98% power or higher 98% $\Sigma(P_{norm}^2 + f_{norm}^2)$ due to the test being terminated too soon, you may use the highest speed achieved during the test as the maximum test speed. You are attesting with this statement that the engine function is installed and functioning for this family's production.

	<p>function is installed and functioning for this family's production. We expected that in-use engines would be limited in this way.</p>
	<p>If any alternate procedures were used in mapping the engine, including 1065.510(b)(5)(iv), or any other regulatory provision, you should request approval.</p>

**Paperwork Reduction Act Notice**

The public reporting and recordkeeping burden for this collection of information is estimated to average 453.79 hours per respondent. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number 2060-0338 in any correspondence. Do not send the completed form to this address.

5.610

top or of the engine into a vessel, of the recommended speed is?

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sary)

imum Test Speed (it must be within 500 rpm

adsheet format:

r map on the noted worksheet

normalized speed).

$f_m^2 + f_{norm}^2$ ) value, because the map  
uring the map if it is at least as high as the  
is application that this speed limiting  
and at the stated nominal speed and it is

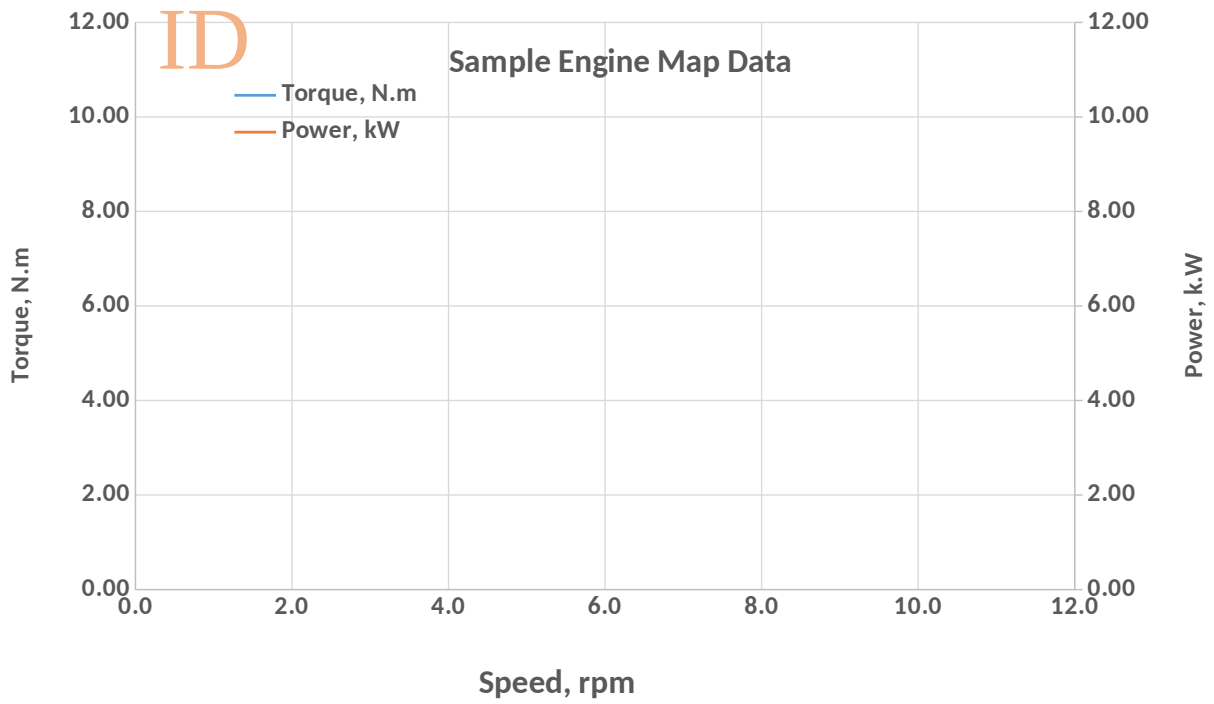
cluding as provided for in 1065.10 or  
describe the procedure and contact EPA

OMB No. 2060-0338  
Approval Expires on  
October 31, 2022  
EPA Form 5900-459

# Engine Family-MAP

ID

Sample Engine Map Data



Pmax	0.00
.98*Pmax	0

.98*P <sub>max</sub> -high	#DIV/0!
.98*P <sub>max</sub> -low	#DIV/0!
Speed at Pmax	#DIV/0!
Σmax, maximum sum of squares	0
.98*Σ <sub>max</sub>	0
.98*Σ <sub>max</sub> -low	#DIV/0!
.98*Σ <sub>max</sub> -high	
Fnorm	#DIV/0!

point of engagement of rev limiter

Maximum Test Speed

**Declared maximum test speed +/- 500 rpm (40 CFR 1**

VARIABLE SPEED MAP DATA			
Time, sec	Speed, rpm	Torque, N.m	Power, kW
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