United States
US Environmental Protection Agency
Office of Air and Radiation, Office of Transportation and Air Quality

Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Manufacturer Data Submission Template -- INSTRUCTIONS

I. About

This template allows manufacturers of Marine Compression-Ignition (CI) engines to submit production line testing (PLT) data in a simple, consistent format. Based on the information entered by the submitter, the template performs the required calculation of the final test result and displays the current status of the test. This template is intended for use by manufacturers subject to either Part 94 or Part 1042. If your engines are subject to Part 1042, you may choose to test your engines using the CumSum methodology in accordance with the procedures outlined in 40 CFR Part 1045 or Part 1051 (see 40 CFR 1042.301(d)(2)). This template has not been designed to accept data from the CumSum methodology; if you choose to test your engines using CumSum you must use the separate Marine CI PLT template that was created for this purpose.

It is intended that a copy of this template be created for each Category for which the reporting of PLT results are required. These data must be submitted on a quarterly basis in accordance with 40 CFR Part 1042.345(a) and 40 CFR Part 94.508(e). It is intended that one copy of a template be maintained per Category, per year, and results should be cumulative. For instance, the file submitted for the second quarter will contain all test results previously submitted for the first quarter with the results from the second quarter added on. The Summary worksheet provides a field to indicate the associated quarter.

The template is organized into several worksheets, including a "Summary" worksheet that includes both preliminary information as entered by the manufacturer and overall compliance information based on the actual PLT data entered in subsequent worksheets (i.e., Engine Family #1, Engine Family #2, etc.). There are worksheets for 30 engine families and two additional tabs ("Invalid Tests" and "Notes") that allow for the submittal of invalid test results and any other relevant notes that the manufacturer would like to submit with the test results. In all of the worksheets, values may be modified only in cells that are white - the green shaded cells contain either labels or calculated values.

Before entering data in this template, international users should ensure that the settings in Excel for number handling are consistent with the template. Number handling settings that currently specify the use of a comma for the decimal separator and a period for the thousands separator must be temporarily modified to avoid errors within the automatic calculations. To modify the number handling settings when using Excel 2010, go to the file tab at the upper left of the Excel workbook and click "Options". On the resulting window click "Advanced", uncheck the"Use system separators" box and then insert a period for the decimal separator and a comma for the thousands separator. When using Excel 2007, first click the office button, then click "Excel Options". On the resulting window click "Advanced", uncheck the"Use system separators" box and then insert a period for the decimal separator and a comma for the thousands separator. For Excel 2003,go to the "Tools" menu and select "Options." In the window that appears, the "International" tab should be selected. At the top of this tab there will be a section at the top entitled "Number handling"; the check mark in the "Use system separators" box found within this section should be removed. At this point, a period should be inserted for the decimal separator and a comma should be inserted for the thousands separator.

II. Entering General Information

Before entering data for each engine family, some information on the manufacturer and the Category should be entered into the worksheet labeled "Summary." The top portion of this worksheet includes spaces to enter general information about the PLT test. These fields include:

- Manufacturer contact information (manufacturer name, PLT contact, email, and phone);
- Category (select Category 1, Category 2, or Category 3); and
- Current quarter.

There is an additional field for comments. Based on the quarter selected, a set of fields will appear where actual quarter-by-quarter production values will appear based on the data entered for each engine family.

The required engine sample size is calculated as follows (and includes any additional engines tested as a part of the follow-up that is required when an engine fails a test (see 40 CFR 1042.310(c) and 40 CFR 94.507(a)):

- For Category 1 engines subject to Part 94 the required sample size for the category is 1% of the Category 1 projected annual production volume if this is greater than or equal to 100, and 0 if the Category 1 projected annual production is less than 100 (40 CFR 94.505(a)(1)(i)).
- For Category 1 engines subject to Part 1042 the required sample size for the category is 1% of the Category 1 projected annual production volume, with a minimum sample size of 1 (40 CFR 1042.310(a)(1)).
- For Category 2 engines subject to Part 94 the required sample size for each engine family is 1% of the engine family's projected annual production volume, with a minimum sample size of 1 (40 CFR 94.505(a)(1)(ii)).
- For Category 2 engines subject to Part 1042 the required sample size for the category is 1% of the Category 2 projected annual production volume, with a minimum sample size of 1 (40 CFR 1042.310(a)(2)).

Regardless of the Part or the Category, projected annual production is entered on a per engine family basis on each engine family sheet and while the number of required tests for the Engine Family is displayed in cell N17, the actual minimum required engine sample size is displayed in the Summary sheet in cell L16. As described in the notes below, cell L16 in the Summary sheet reflects the required sample size for Part 1042 Category 1 and 2 engines and Part 94 Category 1 engines. The required sample size for Part 94 Category 2 is calculated by Engine Family, and as a result, cell N17 is the relevant field that displays the proper required sample size.

Note that the projected annual production for the category is calculated by summing up the individual values for the engine families and is displayed on the Summary sheet. The number of completed engine family tests is also calculated from the Engine Family sheets and is displayed on the Summary sheet. Following are some notes that reiterate the logic and structure surrounding the required sample size calculation.

IMPORTANT NOTES REGARDING SAMPLE SIZE CALCULATIONS:

1. For Part 1042 Category 1 and 2 engines and Part 94 Category 1 engines, the minimum engine sample size for the category is displayed on the Summary sheet.

2. For Part 94, Category 2 engines, the required sample size will be displayed within each individualEngine Family worksheet (i.e., Required Tests) since the number of required tests is based on 1% of the Engine Family production (per 94.505(a)(1)(ii)). As such, the underlying formulas have been structured such that if Category 2 applies, the "Minimum Required Engine Sample Size for Category" field in the Summary sheet will only reflect Part 1042 Engine Family data from the corresponding worksheets.

3. For Part 94, Category 1 sample size calculations, the Summary sheet will include the correct sample size for the Category. However, within each individual Engine Family worksheet, if the projected production is less than 50, the required tests in cell N17 will display as zero. If the projected production for all Part 94, Category 1 Engine Families is less than 100, the sample size requirement for all of those Engine Families is zero (which will be displayed as such in Cell L16 within the Summary sheet). However, if the projected production for these Engine Families is greater than 100, the total is spread between more than one Engine Family, and the number of subject Engine Families is greater than the number of required tests (as displayed in cell L16), the user may select the Engine Family or Families for testing in order to meet the overall testing requirement. If there are questions regarding which Engine Families to test, manufacturers should obtain additional clarification from their Certification Representative.

Note that if there is a pre-approved reduced sample size, the minimum sample size is set equal to this value (assuming that the pre-approved size entered is less than the sample size calculated in accordance with the corresponding guidelines for Category 1 or 2). A reduced sample size may be pre-approved if the engine family has been certified with carry-over emissions data (40 CFR 1042.301(e) and 40 CFR 94.503(d)).

For Part 1042 Category 1 and 2 engines and Part 94 Category 1 engines, the sample size status in Column R of the Summary sheet will be displayed for each Engine Family record as either "OPEN" or "PASS". If the total engine sample size is greater than or equal to the minimum required sample size, this status is displayed as "PASS" - otherwise, it is displayed as "OPEN". For Part 94 Category 2 engines, the sample size status is displayed to the right of the Comments field within the Engine Family worksheets and as with the Category status indicator, will display either "PASS" or "OPEN" depending on the required sample size and the number of tests completed.

III. Entering PLT Engine Test Results

Following the "Summary" worksheet, there are multiple worksheets for "Engine Family #1" through "Engine Family #30." Using these worksheets, enter PLT data for each engine family for CO, PM, HC, and NOx (HC and NOx values are summed and displayed as a combined NOx+HC value, if this option was indicated on the individual Engine Family worksheet). Please note that for Category 3 results only need to be entered for NOx; however, for both Category 1 and Category 2 results must be entered for CO, PM, HC, and NOx in order to ensure that the calculations are done properly.

Enter data for the test location/description, whether the engine family is a carryover, reduced sample size (if applicable), fuel type and whether the engine family is Recreational or Commercial. Note that 'HC' refers to 'THC' for diesel fuel, 'NMHC' natural gas fuel, and 'THCE' for alcohol fuel. When the fuel type is selected, a note appears reminding the user of the correct HC variant for the selected fuel. Enter the Model Year, Tier, whether NOx+HC is combined, and 40 CFR Part. Note that a selection of "Y" or "N" is required in the field indicating whether NOx+HC is combined in order to ensure that the results in the Summary worksheet are accurate and properly displayed.

The engine family name is then entered followed by the engine family's projected annual production, the start/end dates for production and the deterioration factor type, which must be specified as either additive or multiplicative and is automatically displayed in the "Det Factor Type" fields for all pollutants. The subsequent field should be set to "Y" once all test data have been entered to indicate that the test data can be factored into the compliance assessment within the Summary sheet. Under these fields, data for actual production by quarter can be entered. To the right of these fields, enter the FEL/standard, deterioration factor, and green engine factor (if applicable) for each pollutant.

The engine test results should be entered in the "PLT Engine Test Results" section within the Engine Family worksheet in the order in which they occur. The first fourteen fields includes information specific to the test. The initial result can be entered for each pollutant in the relevant columns. The final result and deteriorated final result are displayed if the "Calc Final Result?" field in column B is "Y." At the far right, open fields are available to enter data related to failed tests (if applicable). Failed tests will result in an upward adjustment to the required sample size.

Note that for Category 3 engines, only NOx results need to be entered. The template has been designed so that for Category 3 engines, the engine family PLT status is determined solely on the basis of the NOx results.

The Test Engine worksheets should only include valid test results. Invalid test results should be entered in the "Invalid Tests" worksheet. Any additional notes or information relevant to the PLT information for the engine family can be included in the "Notes" worksheet.

IV. Compliance Summary

The far right portion of the "Summary" worksheet (below the general information entered previously, as described in Section II) includes the summary compliance information for the PLT tests as entered in the Engine Family worksheets. As described below, the summary information shows a Sample Size Status, Test Status, and a Compliance Status for each engine family.

● Sample Size Status: This value will be OPEN if the number of tests performed for the engine family is less than the required amount (including follow-ups to falied tests. Otherwise, this value will be PASS.

● Test Status: This value will be FAIL if a failed status is indicated for any one pollutant. This value will be PASS if all pollutants for the engine family have a passing status.

● Compliance Status: If both the test status and sample size status have a value of PASS, the compliance status also has a value of PASS. If the test status has a value of FAIL, then the compliance status will have a value of FAIL regardless of the sample size status value. If the test status has a value of PASS and the sample size status has a value of OPEN, then the compliance status value will be OPEN.

In addition to the sample size status for engine families, for Part 1042 engines and Part 94, Category 1 engines a sample size status is displayed for the category as well. The value of this status will be either OPEN or PASS. If the value is OPEN then a message will appear indicating how many additional tests are needed across the category. Due to rounding it is possible for the sample size status for the category to be OPEN even if the sample size status for all of the engine families is PASS.

IV. Compliance Summary

The far right portion of the "Summary" worksheet (below the general information entered previously, as described in Section II) includes the summary compliance information for the PLT tests as entered in the Engine Family worksheets. As described below, the summary information shows a Sample Size Status, Test Status, and a Compliance Status for each engine family.

● Sample Size Status: This value will be OPEN if the number of tests performed for the engine family is less than the required amount (including follow-ups to falied tests. Otherwise, this value will be PASS.

● Test Status: This value will be FAIL if a failed status is indicated for any one pollutant. This value will be PASS if all pollutants for the engine family have a passing status.

● Compliance Status: If both the test status and sample size status have a value of PASS, the compliance status also has a value of PASS. If the test status has a value of FAIL, then the compliance status will have a value of FAIL regardless of the sample size status value. If the test status has a value of PASS and the sample size status has a value of OPEN, then the compliance status value will be OPEN.

In addition to the sample size status for engine families, for Part 1042 engines and Part 94, Category 1 engines a sample size status is displayed for the category as well. The value of this status will be either OPEN or PASS. If the value is OPEN then a message will appear indicating how many additional tests are needed across the category. Due to rounding it is possible for the sample size status for the category to be OPEN even if the sample size status for all of the engine families is PASS.

V. Troubleshooting

If odd or unexpected results are displayed in the "Summary" worksheet, the following items can be checked:

● Has a category been specified on the "Summary" worksheet and a projected production volume in the Engine Family worksheets?

● Is "Y" indicated for the "Engine Family Testing Completed?" field for each completed Engine Family tab?

● Are all engine tests entered sequentially without skipping rows?

● Is "Y" indicated within the "Calc Final Result" field for rows in which a final result is to be calculated?

● Is there any information that has been inadvertently omitted within any one of the required data fields?

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United States
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Manufacturer and Engine Category Information

Submission Date

Model Year:
Current Quarter:

Manufacturer:
PLT Test Contact:
Email Address:
Phone #:

Category:
Projected Annual Production For Category: 0
Number of Completed Engine Family Tests:
Minimum Required Engine Sample Size For Category:

Comments:

Total Production 0

Compliance Summary

	CO			PM			NOx+HC			NOx			HC					
Engine Family	Final Result (g/kW-hr)	Standard (g/kW-hr)	Compliance Status	Final Result (g/kW-hr)	Standard/FEL (g/kW-hr)	Compliance Status	Final Result (g/kW-hr)	Standard/FEL (g/kW-hr)	Compliance Status	Final Result (g/kW-hr)	Standard/FEL (g/kW-hr)	Compliance Status	Final Result (g/kW-hr)	Standard/FEL (g/kW-hr)	Compliance Status	Sample Size Status	Test Status	Compliance Status

Number Passed: 0
Number Failed: 0
Number Open: 0

Category Sample Size Status:

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Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #1

Manufacturer:
PLT Test Contact:
Email Address:
Phone #:
Test Location & description:

Carryover?:
Pre-approved reduced required sample size:
Fuel Type:
Recreational/Commercial:
Model Year:
Tier:
Combined NOx+HC?
40 CFR Part:

Engine Family:
Projected Annual Production:
Date of Start of Model Year Production:
Date of End of Model Year Production:
Deterioration Factor Type:
Include Results from Engine Family #1 on Summary Sheet?
Required Tests (including failure follow-ups) 1
Notes:

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

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Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Ausiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #1

CO

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #2

Manufacturer:	
PLT Test Contact:	
Email Address:	
Phone #:	
Test Location & description:	
Carryover?:	
Pre-approved reduced required sample size:	
Fuel Type:	
Recreational/Commercial:	
Model Year:	
Tier:	
Combined NOx+HC?	
40 CFR Part:	

Engine Family:	
Projected Annual Production:	
Date of Start of Model Year Production:	
Date of End of Model Year Production:	
Deterioration Factor Type:	
Include Results from Engine Family #2 on Summary Sheet?	
Required Tests (including failure follow-ups)	1
Notes:	

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

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Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Auxiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #2

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #3

Manufacturer:
PLT Test Contact:
Email Address:
Phone #:
Test Location & description:

Carryover?:
Pre-approved reduced required sample size:
Fuel Type:
Recreational/Commercial:
Model Year:
Tier:
Combined NOx+HC?
40 CFR Part:

Engine Family:
Projected Annual Production:
Date of Start of Model Year Production:
Date of End of Model Year Production:
Deterioration Factor Type:
Include Results from Engine Family #3 on Summary Sheet?
Required Tests (including failure follow-ups) 1
Notes:

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

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Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Ausiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #3

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #4

Manufacturer:
PLT Test Contact:
Email Address:
Phone #:
Test Location & description:

Carryover?:
Pre-approved reduced required sample size:
Fuel Type:
Recreational/Commercial:
Model Year:
Tier:
Combined NOx+HC?
40 CFR Part:

Engine Family:
Projected Annual Production:
Date of Start of Model Year Production:
Date of End of Model Year Production:
Deterioration Factor Type:
Include Results from Engine Family #4 on Summary Sheet?
Required Tests (including failure follow-ups) 1
Notes:

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Ausiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #4

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Paperwork Reduction Act Notice
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #5

Manufacturer:
PLT Test Contact:
Email Address:
Phone #:
Test Location & description:

Carryover?:
Pre-approved reduced required sample size:
Fuel Type:
Recreational/Commercial:
Model Year:
Tier:
Combined NOx+HC?
40 CFR Part:

Engine Family:
Projected Annual Production:
Date of Start of Model Year Production:
Date of End of Model Year Production:
Deterioration Factor Type:
Include Results from Engine Family #5 on Summary Sheet?
Required Tests (including failure follow-ups) 1
Notes:

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Auxiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #5

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #6

Manufacturer:
PLT Test Contact:
Email Address:
Phone #:
Test Location & description:

Carryover?:
Pre-approved reduced required sample size:
Fuel Type:
Recreational/Commercial:
Model Year:
Tier:
Combined NOx+HC?
40 CFR Part:

Engine Family:
Projected Annual Production:
Date of Start of Model Year Production:
Date of End of Model Year Production:
Deterioration Factor Type:
Include Results from Engine Family #6 on Summary Sheet?
Required Tests (including failure follow-ups) 1
Notes:

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Ausiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #6

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #7

Manufacturer:
PLT Test Contact:
Email Address:
Phone #:
Test Location & description:

Carryover?:
Pre-approved reduced required sample size:
Fuel Type:
Recreational/Commercial:
Model Year:
Tier:
Combined NOx+HC?
40 CFR Part:

Engine Family:
Projected Annual Production:
Date of Start of Model Year Production:
Date of End of Model Year Production:
Deterioration Factor Type:
Include Results from Engine Family #7 on Summary Sheet?
Required Tests (including failure follow-ups): 1
Notes:

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	

CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	

PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	

HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	

NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Auxiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #7

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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US Environmental Protection Agency
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #8

Manufacturer:
PLT Test Contact:
Email Address:
Phone #:
Test Location & description:

Carryover?:
Pre-approved reduced required sample size:
Fuel Type:
Recreational/Commercial:
Model Year:
Tier:
Combined NOx+HC?
40 CFR Part:

Engine Family:
Projected Annual Production:
Date of Start of Model Year Production:
Date of End of Model Year Production:
Deterioration Factor Type:
Include Results from Engine Family #8 on Summary Sheet?
Required Tests (including failure follow-ups): 1
Notes:

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Auxiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #8

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #9

Manufacturer:
PLT Test Contact:
Email Address:
Phone #:
Test Location & description:

Carryover?:
Pre-approved reduced required sample size:
Fuel Type:
Recreational/Commercial:
Model Year:
Tier:
Combined NOx+HC?
40 CFR Part:

Engine Family:
Projected Annual Production:
Date of Start of Model Year Production:
Date of End of Model Year Production:
Deterioration Factor Type:
Include Results from Engine Family #9 on Summary Sheet?
Required Tests (including failure follow-ups) 1
Notes:

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	

CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	

PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	

HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	

NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Ausiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #9

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #10

Manufacturer:	
PLT Test Contact:	
Email Address:	
Phone #:	
Test Location & description:	
Carryover?:	
Pre-approved reduced required sample size:	
Fuel Type:	
Recreational/Commercial:	
Model Year:	
Tier:	
Combined NOx+HC?	
40 CFR Part:	

Engine Family:	
Projected Annual Production:	
Date of Start of Model Year Production:	
Date of End of Model Year Production:	
Deterioration Factor Type:	
Include Results from Engine Family #10 on Summary Sheet?	
Required Tests (including failure follow-ups)	1
Notes:	

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Auxiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #10

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Paperwork Reduction Act Notice

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United States
US Environmental Protection Agency
Office of Air and Radiation, Office of Transportation and Air Quality

Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #11

Manufacturer:	
PLT Test Contact:	
Email Address:	
Phone #:	
Test Location & description:	
Carryover?:	
Pre-approved reduced required sample size:	
Fuel Type:	
Recreational/Commercial:	
Model Year:	
Tier:	
Combined NOx+HC?	
40 CFR Part:	

Engine Family:	
Projected Annual Production:	
Date of Start of Model Year Production:	
Date of End of Model Year Production:	
Deterioration Factor Type:	
Include Results from Engine Family #11 on Summary Sheet?	
Required Tests (including failure follow-ups)	1
Notes:	

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Auxiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #11

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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United States
US Environmental Protection Agency
Office of Air and Radiation, Office of Transportation and Air Quality

Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #12

Manufacturer:
PLT Test Contact:
Email Address:
Phone #:
Test Location & description:

Carryover?:
Pre-approved reduced required sample size:
Fuel Type:
Recreational/Commercial:
Model Year:
Tier:
Combined NOx+HC?
40 CFR Part:

Engine Family:
Projected Annual Production:
Date of Start of Model Year Production:
Date of End of Model Year Production:
Deterioration Factor Type:
Include Results from Engine Family #12 on Summary Sheet?
Required Tests (including failure follow-ups): 1
Notes:

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Ausiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #12

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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United States
US Environmental Protection Agency
Office of Air and Radiation, Office of Transportation and Air Quality

Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #13

Manufacturer:	
PLT Test Contact:	
Email Address:	
Phone #:	
Test Location & description:	
Carryover?:	
Pre-approved reduced required sample size:	
Fuel Type:	
Recreational/Commercial:	
Model Year:	
Tier:	
Combined NOx+HC?	
40 CFR Part:	

Engine Family:	
Projected Annual Production:	
Date of Start of Model Year Production:	
Date of End of Model Year Production:	
Deterioration Factor Type:	
Include Results from Engine Family #13 on Summary Sheet?	
Required Tests (including failure follow-ups)	1
Notes:	

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Auxiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #13

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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US Environmental Protection Agency
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #14

Manufacturer:	
PLT Test Contact:	
Email Address:	
Phone #:	
Test Location & description:	
Carryover?:	
Pre-approved reduced required sample size:	
Fuel Type:	
Recreational/Commercial:	
Model Year:	
Tier:	
Combined NOx+HC?	
40 CFR Part:	

Engine Family:	
Projected Annual Production:	
Date of Start of Model Year Production:	
Date of End of Model Year Production:	
Deterioration Factor Type:	
Include Results from Engine Family #14 on Summary Sheet?	
Required Tests (including failure follow-ups)	1
Notes:	

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Auxiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #14

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #15

Manufacturer:
PLT Test Contact:
Email Address:
Phone #:
Test Location & description:

Carryover?:
Pre-approved reduced required sample size:
Fuel Type:
Recreational/Commercial:
Model Year:
Tier:
Combined NOx+HC?
40 CFR Part:

Engine Family:
Projected Annual Production:
Date of Start of Model Year Production:
Date of End of Model Year Production:
Deterioration Factor Type:
Include Results from Engine Family #15 on Summary Sheet?
Required Tests (including failure follow-ups) 1
Notes:

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	

CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	

PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	

HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	

NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Ausiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #15

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #16

Manufacturer:
PLT Test Contact:
Email Address:
Phone #:
Test Location & description:

Carryover?:
Pre-approved reduced required sample size:
Fuel Type:
Recreational/Commercial:
Model Year:
Tier:
Combined NOx+HC?
40 CFR Part:

Engine Family:
Projected Annual Production:
Date of Start of Model Year Production:
Date of End of Model Year Production:
Deterioration Factor Type:
Include Results from Engine Family #16 on Summary Sheet?
Required Tests (including failure follow-ups) 1
Notes:

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	

CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	

PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	

HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	

NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Ausiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #16

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Paperwork Reduction Act Notice

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US Environmental Protection Agency
Office of Air and Radiation, Office of Transportation and Air Quality

Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #17

Manufacturer:	
PLT Test Contact:	
Email Address:	
Phone #:	
Test Location & description:	
Carryover?:	
Pre-approved reduced required sample size:	
Fuel Type:	
Recreational/Commercial:	
Model Year:	
Tier:	
Combined NOx+HC?	
40 CFR Part:	

Engine Family:	
Projected Annual Production:	
Date of Start of Model Year Production:	
Date of End of Model Year Production:	
Deterioration Factor Type:	
Include Results from Engine Family #17 on Summary Sheet?	
Required Tests (including failure follow-ups)	1
Notes:	

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Ausiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #17

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Paperwork Reduction Act Notice

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United States
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #18

Manufacturer:	
PLT Test Contact:	
Email Address:	
Phone #:	
Test Location & description:	
Carryover?:	
Pre-approved reduced required sample size:	
Fuel Type:	
Recreational/Commercial:	
Model Year:	
Tier:	
Combined NOx+HC?	
40 CFR Part:	

Engine Family:	
Projected Annual Production:	
Date of Start of Model Year Production:	
Date of End of Model Year Production:	
Deterioration Factor Type:	
Include Results from Engine Family #18 on Summary Sheet?	
Required Tests (including failure follow-ups)	1
Notes:	

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Ausiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #18

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Office of Air and Radiation, Office of Transportation and Air Quality

Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #19

Manufacturer:
PLT Test Contact:
Email Address:
Phone #:
Test Location & description:

Carryover?:
Pre-approved reduced required sample size:
Fuel Type:
Recreational/Commercial:
Model Year:
Tier:
Combined NOx+HC?
40 CFR Part:

Engine Family:
Projected Annual Production:
Date of Start of Model Year Production:
Date of End of Model Year Production:
Deterioration Factor Type:
Include Results from Engine Family #19 on Summary Sheet?
Required Tests (including failure follow-ups) 1
Notes:

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	

CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	

PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	

HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	

NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Auxiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #19

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #20

Manufacturer:
PLT Test Contact:
Email Address:
Phone #:
Test Location & description:

Carryover?:
Pre-approved reduced required sample size:
Fuel Type:
Recreational/Commercial:
Model Year:
Tier:
Combined NOx+HC?
40 CFR Part:

Engine Family:
Projected Annual Production:
Date of Start of Model Year Production:
Date of End of Model Year Production:
Deterioration Factor Type:
Include Results from Engine Family #20 on Summary Sheet?
Required Tests (including failure follow-ups) 1
Notes:

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Ausiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #20

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #21

Manufacturer:	
PLT Test Contact:	
Email Address:	
Phone #:	
Test Location & description:	
Carryover?:	
Pre-approved reduced required sample size:	
Fuel Type:	
Recreational/Commercial:	
Model Year:	
Tier:	
Combined NOx+HC?	
40 CFR Part:	

Engine Family:	
Projected Annual Production:	
Date of Start of Model Year Production:	
Date of End of Model Year Production:	
Deterioration Factor Type:	
Include Results from Engine Family #21 on Summary Sheet?	
Required Tests (including failure follow-ups)	1
Notes:	

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Ausiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #21

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #22

Manufacturer:
PLT Test Contact:
Email Address:
Phone #:
Test Location & description:

Carryover?:
Pre-approved reduced required sample size:
Fuel Type:
Recreational/Commercial:
Model Year:
Tier:
Combined NOx+HC?
40 CFR Part:

Engine Family:
Projected Annual Production:
Date of Start of Model Year Production:
Date of End of Model Year Production:
Deterioration Factor Type:
Include Results from Engine Family #22 on Summary Sheet?
Required Tests (including failure follow-ups) 1
Notes:

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	

CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	

PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	

HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	

NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Ausiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine family #22

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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US Environmental Protection Agency
Office of Air and Radiation, Office of Transportation and Air Quality

Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #23

Manufacturer:	
PLT Test Contact:	
Email Address:	
Phone #:	
Test Location & description:	
Carryover?:	
Pre-approved reduced required sample size:	
Fuel Type:	
Recreational/Commercial:	
Model Year:	
Tier:	
Combined NOx+HC?	
40 CFR Part:	

Engine Family:	
Projected Annual Production:	
Date of Start of Model Year Production:	
Date of End of Model Year Production:	
Deterioration Factor Type:	
Include Results from Engine Family #23 on Summary Sheet?	
Required Tests (including failure follow-ups)	1
Notes:	

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Ausiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #23

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Paperwork Reduction Act Notice

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Office of Air and Radiation, Office of Transportation and Air Quality

Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #24

Manufacturer:	
PLT Test Contact:	
Email Address:	
Phone #:	
Test Location & description:	
Carryover?:	
Pre-approved reduced required sample size:	
Fuel Type:	
Recreational/Commercial:	
Model Year:	
Tier:	
Combined NOx+HC?	
40 CFR Part:	

Engine Family:	
Projected Annual Production:	
Date of Start of Model Year Production:	
Date of End of Model Year Production:	
Deterioration Factor Type:	
Include Results from Engine Family #24 on Summary Sheet?	
Required Tests (including failure follow-ups)	1
Notes:	

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Auxiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #24

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #25

Manufacturer:
PLT Test Contact:
Email Address:
Phone #:
Test Location & description:

Carryover?:
Pre-approved reduced required sample size:
Fuel Type:
Recreational/Commercial:
Model Year:
Tier:
Combined NOx+HC?
40 CFR Part:

Engine Family:
Projected Annual Production:
Date of Start of Model Year Production:
Date of End of Model Year Production:
Deterioration Factor Type:
Include Results from Engine Family #25 on Summary Sheet?
Required Tests (including failure follow-ups) 1
Notes:

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Ausiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #25

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #26

Manufacturer:	
PLT Test Contact:	
Email Address:	
Phone #:	
Test Location & description:	
Carryover?:	
Pre-approved reduced required sample size:	
Fuel Type:	
Recreational/Commercial:	
Model Year:	
Tier:	
Combined NOx+HC?	
40 CFR Part:	

Engine Family:	
Projected Annual Production:	
Date of Start of Model Year Production:	
Date of End of Model Year Production:	
Deterioration Factor Type:	
Include Results from Engine Family #26 on Summary Sheet?	
Required Tests (including failure follow-ups)	1
Notes:	

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Auxiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #26

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #27

Manufacturer:
PLT Test Contact:
Email Address:
Phone #:
Test Location & description:

Carryover?:
Pre-approved reduced required sample size:
Fuel Type:
Recreational/Commercial:
Model Year:
Tier:
Combined NOx+HC?
40 CFR Part:

Engine Family:
Projected Annual Production:
Date of Start of Model Year Production:
Date of End of Model Year Production:
Deterioration Factor Type:
Include Results from Engine Family #27 on Summary Sheet?
Required Tests (including failure follow-ups) 1
Notes:

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	

CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	

PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	

HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	

NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Ausiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #27

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #28

Manufacturer:
PLT Test Contact:
Email Address:
Phone #:
Test Location & description:

Carryover?:
Pre-approved reduced required sample size:
Fuel Type:
Recreational/Commercial:
Model Year:
Tier:
Combined NOx+HC?
40 CFR Part:

Engine Family:
Projected Annual Production:
Date of Start of Model Year Production:
Date of End of Model Year Production:
Deterioration Factor Type:
Include Results from Engine Family #28 on Summary Sheet?
Required Tests (including failure follow-ups) 1
Notes:

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Auxiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #28

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Paperwork Reduction Act Notice

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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #29

Manufacturer:	
PLT Test Contact:	
Email Address:	
Phone #:	
Test Location & description:	
Carryover?:	
Pre-approved reduced required sample size:	
Fuel Type:	
Recreational/Commercial:	
Model Year:	
Tier:	
Combined NOx+HC?	
40 CFR Part:	

Engine Family:	
Projected Annual Production:	
Date of Start of Model Year Production:	
Date of End of Model Year Production:	
Deterioration Factor Type:	
Include Results from Engine Family #29 on Summary Sheet?	
Required Tests (including failure follow-ups)	1
Notes:	

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Ausiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #29

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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Paperwork Reduction Act Notice

The public reporting and recordkeeping burden for this collection of information is estimated to average 12 hours per response. 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 in any correspondence. Do not send the completed form to this address.

United States
US Environmental Protection Agency
Office of Air and Radiation, Office of Transportation and Air Quality

Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Engine Family #30

Manufacturer:	
PLT Test Contact:	
Email Address:	
Phone #:	
Test Location & description:	
Carryover?:	
Pre-approved reduced required sample size:	
Fuel Type:	
Recreational/Commercial:	
Model Year:	
Tier:	
Combined NOx+HC?	
40 CFR Part:	

Engine Family:	
Projected Annual Production:	
Date of Start of Model Year Production:	
Date of End of Model Year Production:	
Deterioration Factor Type:	
Include Results from Engine Family #30 on Summary Sheet?	
Required Tests (including failure follow-ups)	1
Notes:	

	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Actual	Total
Total Actual Production (to date):					0

Comments:

Current CO Result	
CO Standard	
Units	g/kW-hr
CO Det Factor	
Det Factor Type	
CO Green Engine Factor	

Current PM Result	
PM Standard or FEL	
Units	g/kW-hr
PM Det Factor	
Det Factor Type	
PM Green Engine Factor	

Current HC Result	
HC Standard or FEL	
Units	g/kW-hr
HC Det Factor	
Det Factor Type	
HC Green Engine Factor	

Final NOx Result	
NOx Standard or FEL	
Units	g/kW-hr
NOx Det Factor	
Det Factor Type	
NOx Green Engine Factor	

Part 94 – Category 2 Sample Size Status: N/A

OMB No. 2060-0641
Approval Expires on 11/30/2016
EPA Form 5900-298

Test Cycle Options
1 = 4-Mode General Cycle (E3)
2 = 5-Mode Recreational Cycle (E5)
3 = 4-Mode Constant Speed Propulsion Cycle (E2)
4 = 5-Mode Constant Speed Auxiliary Cycle (D2)
5 = 6-Mode Variable Speed Auxiliary Cycle (G2)
6 = 8-Mode Variable Speed Ausiliary Cycle (C1)
O = Other

PLT Engine Test Results: Engine Family #30

	Calc Final Result?	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Initial Result	Rounded CO Initial Result	CO Final Result	Det. CO Final Result	PM Initial Result	Rounded PM Initial Result	PM Final Result	Det. PM Final Result	HC Initial Result	Rounded HC Initial Result	HC Final Result	Det. HC Final Result	NOx Initial Result	Rounded NOx Initial Result	NOx Final Result	Det. NOx Final Result	Reason for Failed Test (if applicable)	Remedy	Repairs	Test Cycle	Comments
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United States
US Environmental Protection Agency
Office of Air and Radiation, Office of Transportation and Air Quality

Manufacturer Production Line Testing Report for Marine Compression-Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Basic Information: Invalid Tests

Manufacturer:
PLT Test Contact:
Email Address:
Phone #:
Test Location & description:

Total Production: 0
Date of Start of Model Year Production:
Date of End of Model Year Production:

OMB No. 2060-0641
Approval Expires on
11/30/2016
EPA Form 5900-298

Comments:

Invalid PLT Engine Test Results

	Engine Family	Test Number	Test Date	Test Time	Test Qtr	Engine ID	Engine Make	Engine Configuration	Build Date	Green Engine Factor Applied?	Green Engine Factor Determination Method	Service Hours (or miles) Accumulation	Service Hours Location	Service Acc. Procedure	CO Final Result (g/kW-hr)	PM Final Result (g/kW-hr)	HC+NOx Final Result (g/kW-hr)	NOx Final Result (g/kW-hr)	HC Final Result (g/kW-hr)	Reason for Invalid Test	Additional Comments
1																					
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Manufacturer Production Line Testing Report for Marine Compression Ignition Engines

Version Number: 1.1 Last Revision: December 2013

Manufacturer Notes

Please provide any additional notes here.

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