

**Sequence VIBSJ  
Report Cover Sheet**

Version: VIBSJ VERSION 20030820 BETA

Conducted For:

CC  
CC

C	<b>V = Valid</b>
	<b>I = Invalid</b>
	<b>N = Results cannot be interpreted (refer to comment section)</b>

Lab: CC	Date Completed: YYYYMMDD	Time Completed: HH:MM	
<b>Test Number</b>			
Test Stand: CCCC	Runs On The Stand: CCCC	Engine No. CCCCCCCCCCCCCC	Runs on Engine: CCCC
Oil Code: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC			
Formulation/Stand Code: CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC			
Alternate Codes	CCCCCCCCCCCCC	CCCCCCCCCCCCC	CCCCCCCCCCCCC

In my opinion this test CCCCCC been conducted in a valid manner in accordance with the Test Method D 6837 and the appropriate amendments through the Information Letter System. The remarks included in the report describe the anomalies associated with this test.
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Submitted By: \_\_\_\_\_  
Testing Laboratory

\_\_\_\_\_  
Signature Image  
Signature

\_\_\_\_\_  
Typed Name

\_\_\_\_\_  
Title

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**Sequence VIBSJ  
Form 3**

**Summary of Test Method**

The Sequence VIB is an engine dynamometer test that measures a lubricant's ability to improve the fuel economy of passenger cars and light-duty trucks. The method compares the performance of a test lubricant to the performance of a baseline lubricant over five different stages of operation.

A 1993 Ford 4.6L spark ignition, V-8 cylinder design, 4-cycle engine is used as the test apparatus. The engine incorporates overhead camshafts, a cross-flow, fast-burn cylinder head design, two valves per cylinder, and an electronic port fuel injection.

The Sequence VIBSJ test incorporates a flush and run type procedure. Each test consists of two 5-stage fuel economy measurements on baseline oil (BC) and test oil. The test oil is aged during 16 hours of engine operation at 1500 r/min and 125°C oil temperature. The fuel economy measurements taken on the baseline oil (BC) and test oil are used to calculate a final value for Fuel Economy Improvement.

Below is a summary of the operation conditions for the aging and 5-stage fuel economy portions of the test.

<b>Fuel Economy Measurement and Aging Condition</b>				
<b>FE Stage</b>	<b>Speed (r/min)</b>	<b>Torque (N-m)</b>	<b>Oil Temp. (°C)</b>	<b>Coolant Temp. (°C)</b>
1	1500	98	125	105
2	800	26	105	95
3	800	26	70	60
4	1500	98	70	60
5	1500	98	45	45

<b>Aging Stage</b>	<b>Speed (r/min)</b>	<b>Torque (N-m)</b>	<b>Oil Temp. (°C)</b>	<b>Coolant Temp. (°C)</b>
1	1500	98	125	105

**Sequence VIBSJ  
Form 4  
Test Result Summary  
Non-Reference & Reference Oil Tests**

Lab: CC	Date Completed: YYYYMMDD	Time Completed: HH:MM
Test Number		
Test Stand: CCCCC	Runs On The Stand: CCCC	Engine No. CCCCCCCCCCCCCC
Oil Code: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	Engine Serial Number: CCCCCCCCCCC	
Formulation/Stand Code: CC-C-CCCCC-C-C-CCCCC-CC-CC-CCCC		

Test Documentation		
	BC Before	Test Oil
Start Date	YYYYMMDD	YYYYMMDD
Start Time	HH:MM	HH:MM
End Date	YYYYMMDD	YYYYMMDD
End Time	HH:MM	HH:MM
Oil Test Length, hhh:mm	HHH:MM	HHH:MM
Calibration Oil Batch	CCCCCCCCCC	
Flush Oil Batch	CCCCCCCCCC	
Laboratory Oil Code		CCCCCCCCCCCCCCCCCCCC
SAE Viscosity Grade		CCCCCCC
TMC Oil Code (Reference Oil Tests Only)		CCCCCC
New Oil Viscosity @ 40 °C, cSt		S1234.12
New Oil Viscosity @ 100°C, cSt		S1234.12
Total Test Length, hhh:mm	CCCCC	
Total Engine Hours @ EOT	CCCCC	
Most Recent Fuel Batch	CCCCCCCCCC	

Overall Results		
	BC Oil	Test Oil
Fuel Consumed, kg	S1.123456	S1.123456
Fuel Economy Improvement, %		S12.12
FEI Industry Correction Factor, %		S12.12
FEI Severity Adjustment, % (non-reference tests only)		S12.12
<b>FEI Final Result, %</b>		S12.12

Last Reference Oil Test on Stand/Engine History (Non-Reference Tests Only)			
Date Completed	YYYYMMDD	Fuel Batch	CCCCCCCCCC
TMC Oil Code	CCCCCC	SAE Viscosity Grade	CCCCCCC
Oilcode	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	Calibration Oil Batch	CCCCCCCCCC
Runs on Stand	CCCC	Runs on Engine	CCCC
		<b>Phase I</b>	<b>Phase II</b>
Final FEI Results		S12.12	S12.12

**Sequence VIBSJ  
Form 5  
Operational Data Analysis**

<b>Lab:</b> CC	<b>Date Completed:</b> YYYYMMDD	<b>Time Completed:</b> HH:MM
<b>Test Number</b>		
<b>Test Stand:</b> CCCCC	<b>Runs On The Stand:</b> CCCC	<b>Engine No.</b> CCCCCCCCCCCCCC
<b>Runs on Engine:</b> CCCC		
<b>Oil Code:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Formulation/Stand Code:</b> CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC		

Computed Averages						
Oil	Stage	BSFC kg/kW-h	BSFC C.V.%	Nominal Power kW	Weight Factor	Weighted Fuel Consumed kg
<b>BC Oil</b>	1	S1.12345	S1.12	<b>15.39</b>	<b>0.0802</b>	S1.123456
	2	S1.12345	S1.12	<b>2.18</b>	<b>0.0787</b>	S1.123456
	3	S1.12345	S1.12	<b>2.18</b>	<b>0.0848</b>	S1.123456
	4	S1.12345	S1.12	<b>15.39</b>	<b>0.0864</b>	S1.123456
	5	S1.12345	S1.12	<b>15.39</b>	<b>0.0699</b>	S1.123456
<b>Total Fuel Consumed</b>						S1.123456

Computed Averages						
Oil	Stage	BSFC kg/kW-h	BSFC C.V.%	Nominal Power kW	Weight Factor	Weighted Fuel Consumed kg
<b>Test Oil</b>	1	S1.12345	S1.12	<b>15.39</b>	<b>0.0802</b>	S1.123456
	2	S1.12345	S1.12	<b>2.18</b>	<b>0.0787</b>	S1.123456
	3	S1.12345	S1.12	<b>2.18</b>	<b>0.0848</b>	S1.123456
	4	S1.12345	S1.12	<b>15.39</b>	<b>0.0864</b>	S1.123456
	5	S1.12345	S1.12	<b>15.39</b>	<b>0.0699</b>	S1.123456
<b>Total Fuel Consumed</b>						S1.123456

**Sequence VIBSJ  
Form 6  
General Parameter Listing**

Lab: CC	Date Completed: YYYYMMDD	Time Completed: HH:MM	
Test Number			
Test Stand: CCCCC	Runs On The Stand: CCCC	Engine No. CCCCCCCCCCCCCC	Runs on Engine: CCCC
Oil Code: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC			
Formulation/Stand Code: CC-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C			

**16 Hour Aging**

	<b>Spec</b>	<b>Average<sup>A</sup></b>	<b>Max<sup>A</sup></b>	<b>Min<sup>A</sup></b>
1. Speed, r/min	<b>1500 ±5</b>	S1234.1	S1234.1	S1234.1
2. Torque, N-m	<b>98 ±0.10</b>	S12.12	S12.12	S12.12
3. Oil Gallery Temperature, °C	<b>125 ±2</b>	S123.1	S123.1	S123.1
4. Coolant Inlet Temperature, °C	<b>105 ±2</b>	S123.1	S123.1	S123.1
5. Oil Circulation Temperature, °C	<b>Record</b>	S123.1	S123.1	S123.1
6. Coolant Out Temperature, °C	<b>Record</b>	S123.1	S123.1	S123.1
7. Intake Air Temperature, °C	<b>27 ±2</b>	S123.1	S123.1	S123.1
8. Fuel to Flowmeter Temperature, °C	<b>20-32</b>	S123.1	S123.1	S123.1
9. Fuel to Fuel Rail Temperature, °C	<b>20 ±2</b>	S123.1	S123.1	S123.1
10. Load Cell Temperature, °C	<b>Record</b>	S123.1	S123.1	S123.1
11. Oil Heater Temperature, °C	<b>205 max</b>	S123.1	S123.1	S123.1
12. Intake Air Pressure, kPa	<b>0.05 ±0.02</b>	S1.12	S1.12	S1.12
13. Fuel to Flowmeter Pressure, kPa	<b>100 min</b>	S123.1	S123.1	S123.1
14. Fuel to Fuel Rail Pressure, kPa	<b>205-310</b>	S123.1	S123.1	S123.1
15. Intake Manifold Pressure, kPa abs.	<b>Record</b>	S12.1	S12.1	S12.1
16. Exhaust Back Pressure, kPa abs.	<b>104 ±0.20</b>	S123.12	S123.12	S123.12
17. Engine Oil Pressure, kPa	<b>Record</b>	S123.1	S123.1	S123.1
18. Coolant Flow, L/min	<b>130 ±4</b>	S123.1	S123.1	S123.1
19. Fuel Flow, kg/h	<b>Record</b>	S12.123	S12.123	S12.123
20. Intake Air Humidity, grains/kg	<b>11.4±0.8</b>	S12.1	S12.1	S12.1
21. Air/Fuel Ratio	<b>Record</b>	S12.12	S12.12	S12.12
22. Crankcase Pressure, kPa	<b>0.00 ±0.25</b>	S12.12	S12.12	S12.12

<sup>A</sup> Based on a minimum of one determination per hour

**Sequence VIBSJ  
Form 7  
General Parameter Summary**

Lab: CC	Date Completed: YYYYMMDD	Time Completed: HH:MM
Test Number		
Test Stand: CCCCC	Runs On The Stand: CCCC	Engine No. CCCCCCCCCCCCCC
Runs on Engine: CCCC		
Oil Code: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
Formulation/Stand Code: CC-C-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC		

**BC Oil**

**General Parameters**

	Spec	Stage				
		1	2	3	4	5
1. Oil Circulation Temperature,	<b>Record</b>	S123.1	S123.1	S123.1	S123.1	S123.1
2. Coolant Out Temperature, °C	<b>Record</b>	S123.1	S123.1	S123.1	S123.1	S123.1
3. Fuel to Flowmeter	<b>20-32</b>	S12.1	S12.1	S12.1	S12.1	S12.1
4. Delta Fuel to Flowmeter	<b>≤4</b>	S12.1	S12.1	S12.1	S12.1	S12.1
5. Test Cell Temperature, °C	<b>Record</b>	S12.1	S12.1	S12.1	S12.1	S12.1
6. Load Cell Temperature, °C	<b>Record</b>	S12.1	S12.1	S12.1	S12.1	S12.1
7. Delta Load Cell Temperature,	<b>≤12</b>	S12.1	S12.1	S12.1	S12.1	S12.1
8. Oil Heater Temperature, °C	<b>205 max</b>	S123.1	S123.1	S123.1	S123.1	S123.1
9. Intake Air Pressure, kPa	<b>0.05 ±</b>	S1.12	S1.12	S1.12	S1.12	S1.12
10. Fuel to Flowmeter Pressure,	<b>100 min</b>	S123.1	S123.1	S123.1	S123.1	S123.1
11. Fuel to Fuel Rail Pressure,	<b>205-310</b>	S123.1	S123.1	S123.1	S123.1	S123.1
12. Intake Manifold Pressure, kPa	<b>Record</b>	S12.1	S12.1	S12.1	S12.1	S12.1
13. Engine Oil Pressure, kPa	<b>Record</b>	S123.1	S123.1	S123.1	S123.1	S123.1
14. Coolant Flow, L/min	<b>130 ±4</b>	S123.1	S123.1	S123.1	S123.1	S123.1
15. Intake Air Humidity,	<b>11.4 ±0.8</b>	S12.1	S12.1	S12.1	S12.1	S12.1
16. Crankcase Pressure, kPa	<b>0.00 ±</b>	S12.12	S12.12	S12.12	S12.12	S12.12
17. Blowby, L/min <sup>B</sup>	<b>Record</b>	S12.12				
18. Barometric Pressure, kPa	<b>Record</b>	S123.12	S123.12	S123.12	S123.12	S123.12

<sup>A</sup> Difference between the maximum stage average reading of the entire test and the individual stage average readings

<sup>B</sup> Not required by test procedure

**Sequence VIB  
Form 8  
General Parameter Summary**

Lab: CC	Date Completed: YYYYMMDD	Time Completed: HH:MM
Test Number		
Test Stand: CCCCC	Runs On The Stand: CCCC	Engine No. CCCCCCCCCCCCCC
Runs on Engine: CCCC		
Oil Code: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
Formulation/Stand Code: CC-C-CCCCCCCCC-C-C-CCCCCC-CC-CC-CCCC		

**Test Oil**

**General Parameters**

	Spec	Stage				
		1	2	3	4	5
1. Oil Circulation Temperature, °C	<b>Record</b>	S123.1	S123.1	S123.1	S123.1	S123.1
2. Coolant Out Temperature, °C	<b>Record</b>	S123.1	S123.1	S123.1	S123.1	S123.1
3. Fuel to Flowmeter Temperature, °C	<b>20-32</b>	S12.1	S12.1	S12.1	S12.1	S12.1
4. Delta Fuel to Flowmeter Temp., °C <sup>A</sup>	<b>≤ 4</b>	S12.1	S12.1	S12.1	S12.1	S12.1
5. Test Cell Temperature, °C	<b>Record</b>	S12.1	S12.1	S12.1	S12.1	S12.1
6. Load Cell Temperature, °C	<b>Record</b>	S12.1	S12.1	S12.1	S12.1	S12.1
7. Delta Load Cell Temperature, °C <sup>A</sup>	<b>≤ 12</b>	S12.1	S12.1	S12.1	S12.1	S12.1
8. Oil Heater Temperature, °C	<b>205 max</b>	S123.1	S123.1	S123.1	S123.1	S123.1
9. Intake Air Pressure, kPa	<b>0.05 ± .02</b>	S1.12	S1.12	S1.12	S1.12	S1.12
10. Fuel to Flowmeter Pressure, kPa	<b>100 min</b>	S123.1	S123.1	S123.1	S123.1	S123.1
11. Fuel to Fuel Rail Pressure, kPa	<b>205 – 310</b>	S123.1	S123.1	S123.1	S123.1	S123.1
12. Intake Manifold Pressure, kPa abs.	<b>Record</b>	S12.1	S12.1	S12.1	S12.1	S12.1
13. Engine Oil Pressure, kPa	<b>Record</b>	S123.1	S123.1	S123.1	S123.1	S123.1
14. Coolant Flow, L/min	<b>130 ± 4</b>	S123.1	S123.1	S123.1	S123.1	S123.1
15. Intake Air Humidity, grains/kg	<b>11.4 ± 0.8</b>	S12.1	S12.1	S12.1	S12.1	S12.1
16. Crankcase Pressure, kPa	<b>0.00 ± 0.25</b>	S12.12	S12.12	S12.12	S12.12	S12.12
17. Barometric Pressure, kPa	<b>Record</b>	S123.12	S123.12	S123.12	S123.12	S123.12

<sup>A</sup> Difference between the maximum stage average reading of the entire test and the individual stage average readings



**Sequence VIBSJ  
Form 9  
Critical Parameter Summary - Stage 1**

Lab: CC	Date Completed: YYYYMMDD	Time Completed: HH:MM
Test Number		
Test Stand: CCCCC	Runs On The Stand: CCCC	Engine No. CCCCCCCCCCCCCC
Runs on Engine: CCCC		
Oil Code: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
Formulation/Stand Code: CC-CCCCCCCCCC-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C		

**BC Oil**

Step SPEC	BSFC kg/kW-h	Speed r/min 1500 ± 2	Torque N-m 98 ± .07	Oil Gallery Temp. °C 125 ± 1	Coolant In Temp, °C 105 ± 1	Intake Air Temp, °C 27 ± 2	Fuel Rail Temp, °C 20 ± 2	EBP kPa 104 ± .17	Fuel Flow kg/h Record	AFR 14.00- 15.00	Delta <sup>A</sup> AFR < .50
1	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
2	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
3	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
4	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
5	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
6	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
AVG.	S1.12345	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	S12.12
SD	S1.1234										
C.V.	S1.12										

**Test Oil**

Step SPEC	BSFC kg/Kw-h	Speed r/min 1500 ± 2	Torque N-m 98 ± .07	Oil Gallery Temp. °C 125 ± 1	Coolant In Temp, °C 105 ± 1	Intake Air Temp, °C 27 ± 2	Fuel Rail Temp, °C 20 ± 2	EBP kPa 104 ± .17	Fuel Flow kg/h Record	AFR 14.00- 15.00	Delta <sup>A</sup> AFR < .50
1	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
2	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
3	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
4	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
5	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
6	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
AVG.	S1.12345	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	S12.12
SD	S1.1234										
C.V.	S1.12										

<sup>A</sup> Difference between the maximum stage average reading of the entire test and the individual stage average readings.

**Sequence VIBSJ  
Form 10  
Critical Parameter Summary - Stage 2**

Lab: CC	Date Completed: YYYYMMDD	Time Completed: HH:MM
Test Number		
Test Stand: CCCCC	Runs On The Stand: CCCC	Engine No. CCCCCCCCCCCCCC
Runs on Engine: CCCC		
Oil Code: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
Formulation/Stand Code: CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC		

**BC Oil**

Step SPEC	BSFC kg/kW-h	Speed r/min 800 ± 2	Torque N-m 26 ± .07	Oil Gallery Temp. °C 105 ± 1	Coolant In Temp, °C 95 ± 1	Intake Air Temp, °C 27 ± 2	Fuel Rail Temp, °C 20 ± 2	EBP kPa 104 ± .17	Fuel Flow kg/h Record	AFR 14.00- 15.00	Delta <sup>A</sup> AFR < .50
1	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
2	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
3	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
4	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
5	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
6	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
AVG.	S1.12345	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	S12.12
SD	S1.1234										
C.V.	S1.12										

**Test Oil**

Step SPEC	BSFC kg/Kw-h	Speed r/min 800 ± 2	Torque N-m 26 ± .07	Oil Gallery Temp. °C 105 ± 1	Coolant In Temp, °C 95 ± 1	Intake Air Temp, °C 27 ± 2	Fuel Rail Temp, °C 20 ± 2	EBP kPa 104 ± .17	Fuel Flow kg/h Record	AFR 14.00- 15.00	Delta <sup>A</sup> AFR < .50
1	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
2	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
3	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
4	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
5	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
6	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
AVG.	S1.12345	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	S12.12
SD	S1.1234										
C.V.	S1.12										

<sup>A</sup> Difference between the maximum stage average reading of the entire test and the individual stage average readings.

**Sequence VIBSJ  
Form 11  
Critical Parameter Summary - Stage 3**

Lab: CC	Date Completed: YYYYMMDD	Time Completed: HH:MM
Test Number		
Test Stand: CCCCC	Runs On The Stand: CCCC	Engine No. CCCCCCCCCCCCCC
Runs on Engine: CCCC		
Oil Code: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
Formulation/Stand Code: CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC		

**BC Oil**

Step SPEC	BSFC kg/kW-h	Speed r/min 800 ± 2	Torque N-m 26 ± .07	Oil Gallery Temp. °C 70 ± 1	Coolant In Temp, °C 60 ± 1	Intake Air Temp, °C 27 ± 2	Fuel Rail Temp, °C 20 ± 2	EBP kPa 104 ± .17	Fuel Flow kg/h Record	AFR 14.00- 15.00	Delta <sup>A</sup> AFR < .50
1	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
2	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
3	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
4	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
5	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
6	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
AVG.	S1.12345	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	S12.12
SD	S1.1234										
C.V.	S1.12										

**Test Oil**

Step SPEC	BSFC kg/Kw-h	Speed r/min 800 ± 2	Torque N-m 26 ± .07	Oil Gallery Temp. °C 70 ± 1	Coolant In Temp, °C 60 ± 1	Intake Air Temp, °C 27 ± 2	Fuel Rail Temp, °C 20 ± 2	EBP kPa 104 ± .17	Fuel Flow kg/h Record	AFR 14.00- 15.00	Delta <sup>A</sup> AFR < .50
1	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
2	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
3	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
4	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
5	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
6	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
AVG.	S1.12345	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	S12.12
SD	S1.1234										
C.V.	S1.12										

<sup>A</sup> Difference between the maximum stage average reading of the entire test and the individual stage average readings.

**Sequence VIBSJ  
Form 12  
Critical Parameter Summary - Stage 4**

<b>Lab:</b> CC	<b>Date Completed:</b> YYYYMMDD	<b>Time Completed:</b> HH:MM
<b>Test Number</b>		
<b>Test Stand:</b> CCCCC	<b>Runs On The Stand:</b> CCCC	<b>Engine No.</b> CCCCCCCCCCCCCC
<b>Runs on Engine:</b> CCCC		
<b>Oil Code:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Formulation/Stand Code:</b> CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC		

**BC Oil**

Step SPEC	BSFC kg/kW-h	Speed r/min 1500 ± 2	Torque N-m 98 ± .07	Oil Gallery Temp. °C 70 ± 1	Coolant In Temp, °C 60 ± 1	Intake Air Temp, °C 27 ± 2	Fuel Rail Temp, °C 20 ± 2	EBP kPa 104 ± .17	Fuel Flow kg/h Record	AFR 14.00- 15.00	Delta <sup>A</sup> AFR < .50
1	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
2	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
3	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
4	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
5	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
6	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
<b>AVG.</b>	S1.12345	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	S12.12
<b>SD</b>	S1.1234										
<b>C.V.</b>	S1.12										

**Test Oil**

Step SPEC	BSFC kg/Kw-h	Speed r/min 1500 ± 2	Torque N-m 98 ± .07	Oil Gallery Temp. °C 70 ± 1	Coolant In Temp, °C 60 ± 1	Intake Air Temp, °C 27 ± 2	Fuel Rail Temp, °C 20 ± 2	EBP kPa 104 ± .17	Fuel Flow kg/h Record	AFR 14.00- 15.00	Delta <sup>A</sup> AFR < .50
1	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
2	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
3	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
4	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
5	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
6	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
<b>AVG.</b>	S1.12345	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	S12.12
<b>SD</b>	S1.1234										
<b>C.V.</b>	S1.12										

<sup>A</sup> Difference between the maximum stage average reading of the entire test and the individual stage average readings.

**Sequence VIBSJ  
Form 13  
Critical Parameter Summary – Stage 5**

Lab: CC	Date Completed: YYYYMMDD	Time Completed: HH:MM
Test Number		
Test Stand: CCCCC	Runs On The Stand: CCCC	Engine No. CCCCCCCCCCCCCC
Runs on Engine: CCCC		
Oil Code: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
Formulation/Stand Code: CC-C-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC		

**BC Oil**

Step SPEC	BSFC kg/kW-h	Speed r/min 1500 ± 2	Torque N-m 98 ± .07	Oil Gallery Temp. °C 45 ± 1	Coolant In Temp, °C 45 ± 1	Intake Air Temp, °C 27 ± 2	Fuel Rail Temp, °C 20 ± 2	EBP kPa 104 ± .17	Fuel Flow kg/h Record	AFR 14.00- 15.00	Delta <sup>A</sup> AFR < .50
1	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
2	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
3	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
4	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
5	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
6	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
<b>AVG.</b>	S1.12345	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	S12.12
<b>SD</b>	S1.1234										
<b>C.V.</b>	S1.12										

**Test Oil**

Step SPEC	BSFC kg/Kw-h	Speed r/min 1500 ± 2	Torque N-m 98 ± .07	Oil Gallery Temp. °C 45 ± 1	Coolant In Temp, °C 45 ± 1	Intake Air Temp, °C 27 ± 2	Fuel Rail Temp, °C 20 ± 2	EBP kPa 104 ± .17	Fuel Flow kg/h Record	AFR 14.00- 15.00	Delta <sup>A</sup> AFR < .50
1	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
2	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
3	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
4	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
5	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
6	S1.1234	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	
<b>AVG.</b>	S1.12345	S1234.1	S12.12	S123.1	S123.1	S12.1	S12.1	S123.12	S1.123	S12.12	S12.12
<b>SD</b>	S1.1234										
<b>C.V.</b>	S1.12										

<sup>A</sup> Difference between the maximum stage average reading of the entire test and the individual stage average readings.









**Sequence VIBSJ**  
**Form 15**  
**American Chemistry Council Code of Practice**  
**Test Laboratory Conformance Statement**

Test Laboratory	CC				
Test Sponsor	CC				
Formulation / Stand Code	CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC				
Test Number	CC				
Start Date	YYYYMMDD	Start Time	HH:MM	Time Zone	CCC

Declarations

No. 1 All requirements of the ACC Code of Practice for which the test laboratory is responsible were met in the conduct of this test. Yes  C  No  C  \*

No. 2 The laboratory ran this test for the full duration following all procedural requirements; and all operational validity requirements of the latest version of the applicable test procedure (ASTM or other), including all updates issued by the organization responsible for the test, were met.  
 Yes  C  No  C  \*

If the response to this Declaration is "No", does the test engineer consider the deviations from operational validity requirements that occurred to be beyond the control of the laboratory? Yes  C  \* No  C

No 3. A deviation occurred for one of the test parameters identified by the organization responsible for the test as being a special case. Yes  C  \* No  C   
*(This currently applies only to specific deviations identified in the ASTM Information Letter System)*

**Check The Appropriate Conclusion**

C	Operational review of this test indicates that the results should be included in the Multiple Test Acceptance Criteria calculations.
C	*Operational review of this test indicates that the results should not be included in the Multiple Test Acceptance Criteria calculations.

Note: *Supporting comments are required for all responses identified with an asterisk.*

Comments
CC
CC
CC
CC

Signature Image

YYYYMMDD

Signature

Date

CC CCC

Typed Name

Title