

**Test Method D 6837 for Measurement of the Effects of Automotive Engine Oils on
the Fuel Economy of Passenger Cars and Light Trucks in the Sequence VIB Spark
Ignition Engine
Report Cover Sheet**

Version: VIB VERSION 20041018 BETA

Conducted For:
TSTSPON1
TSTSPON2

LABVALID	V = Valid
	I = Invalid
	N = Results cannot be interpreted (refer to comment section)

TSTOIL	NR = Non-reference Oil Test
	RO = Reference Oil Test

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUN	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		
Alternate Codes	ALTCODE1	ALTCODE2
		ALTCODE3

In my opinion this test OPVALID 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.

Submitted By: _____ SUBLAB
Testing Laboratory

_____ SUBSIGIM
Signature

_____ SUBNAME
Typed Name

_____ SUBTITLE
Title

Form 2

Sequence VIB

Table of Contents

1.	Report Cover Sheet (Includes Validity Statement)	Form 1
2.	Summary of Test Method	Form 3
3.	Test Result Summary	Form 4
4.	Operational Data Analysis	Form 5
5.	Operational Data Analysis	Form 6
6.	General Parameter Listing	Form 7
7.	General Parameter Listing	Form 8
8.	General Parameter Summary	Form 9
9.	General Parameter Summary	Form 10
10.	General Parameter Summary	Form 11
11.	General Parameter Summary	Form 12
12.	Critical Parameter Summary - Stage 1	Form 13
13.	Critical Parameter Summary - Stage 1	Form 13a
14.	Critical Parameter Summary - Stage 2	Form 14
15.	Critical Parameter Summary - Stage 2	Form 14a
16.	Critical Parameter Summary - Stage 3	Form 15
17.	Critical Parameter Summary - Stage 3	Form 15a
18.	Critical Parameter Summary - Stage 4	Form 16
19.	Critical Parameter Summary - Stage 4	Form 16a
20.	Critical Parameter Summary - Stage 5	Form 17
21.	Critical Parameter Summary - Stage 5	Form 17a
22.	Downtime Occurrences & Outliers	Form 18
23.	ACC Conformance Statement	Form 19

**Sequence VIB
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 VIB test incorporates a flush and run type procedure. Each test consists of two 5-stage fuel economy measurements on baseline oil (BC), one at the beginning of the test and one at the end. The test oil is evaluated in between the two baseline runs. The test oil is initially aged during 16 hours of engine operation at 1500 r/min and 125°C oil temperature. After the initial aging, a 5-stage fuel economy measurement is taken. The test oil is then aged an additional 80 hours at an engine speed of 2250 r/min and 135°C oil temperature. Following this final aging, the test oil once again goes through a 5-stage fuel economy measurement. The two fuel economy measurements taken on the baseline oil (BC) and a final value for Fuel Economy Improvement is calculated for the test oil.

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

Fuel Economy Measurement and Aging Condition				
FE Stage	Speed (r/min)	Torque (N-m)	Oil Temp. (°C)	Coolant Temp. (°C)
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

Aging Stage	Speed (r/min)	Torque (N-m)	Oil Temp. (°C)	Coolant Temp. (°C)
1	1500	98	125	105
2	2250	98	135	105

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

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUN	Engine No. ENGNO
Oil Code: OILCODE	Engine Serial Number: ENGSN	
Formulation/Stand Code: FORM		

Test Documentation			
	BC Before	Test Oil	BC After
Start Date	BCBSDTE	DTSTRT	BCASTDT
Start Time	BCBSTIM	STRTIME	BCASTTM
End Date	BCBEDTE	TODTE	DTCOMP
End Time	BCBETIM	TOTIM	EOTTIME
Oil Test Length, hhh:mm	BCBTLEN	TOLEN	BCATESTL
Calibration Oil Batch	BCOILBT		
Flush Oil Batch	BCFOILBT		
Laboratory Oil Code		LABOCODE	
SAE Viscosity Grade		SAEVISC	
TMC Oil Code (Reference Oil Tests Only)		IND	
New Oil Viscosity @ 40 °C, cSt		V40NEW	
New Oil Viscosity @ 100°C, cSt		V100NEW	
Aged (80 h) Oil Viscosity @ 40 °C, cSt		V40A80H	
Aged (80 h) Oil Viscosity @ 100°C, cSt		V100A80H	
Total Test Length, hhh:mm		TESTLEN	
Total Engine Hours @ EOT		ENHREND	
Most Recent Fuel Batch		FUELBTID	

Overall Results				
	BC Oil		Test Oil	
	Before	After	Phase I	Phase II
Fuel Consumed, kg	BC1KG	BC2KG	TO1KG	TO2KG
Shift Delta, %	BCSFTDLT			
Fuel Economy Improvement, %			FEI1	FEI2
FEI Industry Correction Factor, %			FEI1CF	FEI2CF
FEI Severity Adjustment, % (non-reference tests only)			FEI1SA	FEI2SA
FEI Final Result, %			FEI1FNL	FEI2FNL
Total Oil Consumption, mL			TOTOCON	

Last Reference Oil Test on Stand/Engine History (Non-Reference Tests Only)			
Date Completed	RDTCOMP	Fuel Batch	RFUELBIT
TMC Oil Code	RIND	SAE Viscosity Grade	RSAEVISC
Oilcode	ROILCODE	Calibration Oil Batch	RCALOIL
Runs on Stand	RSTRUN	Runs on Engine	RENRUN
		Phase I	Phase II
Final FEI Results		RFEI1FNL	RFEI2FNL

**Sequence VIB
Form 5
Operational Data Analysis**

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUN	Engine No.: ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

Computed Averages						
Oil	Stage	BSFC kg/kW-h	BSFC C.V.%	Nominal Power kW	Weight Factor	Weighted Fuel Consumed kg
BC Before Test Oil	1	BFCARB1A	BFCCRB1A	15.39	0.0802	WFC RB1A
	2	BFCARB2A	BFCCRB2A	2.18	0.0787	WFC RB2A
	3	BFCARB3A	BFCCRB3A	2.18	0.0848	WFC RB3A
	4	BFCARB4A	BFCCRB4A	15.39	0.0864	WFC RB4A
	5	BFCARB5A	BFCCRB5A	15.39	0.0699	WFC RB5A
Total Fuel Consumed						BC1KG

Computed Averages						
Oil	Stage	BSFC kg/kW-h	BSFC C.V.%	Nominal Power kW	Weight Factor	Weighted Fuel Consumed kg
Test Oil Phase I	1	BFCARC1A	BFCCRC1A	15.39	0.0802	WFC_RC1A
	2	BFCARC2A	BFCCRC2A	2.18	0.0787	WFC_RC2A
	3	BFCARC3A	BFCCRC3A	2.18	0.0848	WFC_RC3A
	4	BFCARC4A	BFCCRC4A	15.39	0.0864	WFC_RC4A
	5	BFCARC5A	BFCCRC5A	15.39	0.0699	WFC_RC5A
Total Fuel Consumed						TO1KG

**Sequence VIB
Form 6
Operational Date Analysis**

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUN	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

Computed Averages						
Oil	Stage	BSFC kg/kW-h	BSFC C.V.%	Nominal Power kW	Weight Factor	Weighted Fuel Consumed kg
Test Oil Phase II	1	BFCARD1A	BFCCRD1A	15.39	0.0802	WFC_RD1A
	2	BFCARD2A	BFCCRD2A	2.18	0.0787	WFC_RD2A
	3	BFCARD3A	BFCCRD3A	2.18	0.0848	WFC_RD3A
	4	BFCARD4A	BFCCRD4A	15.39	0.0864	WFC_RD4A
	5	BFCARD5A	BFCCRD5A	15.39	0.0699	WFC_RD5A
Total Fuel Consumed						TO2KG

Computed Averages						
Oil	Stage	BSFC kg/kW-h	BSFC C.V.%	Nominal Power kW	Weight Factor	Weighted Fuel Consumed kg
BC After Test Oil	1	BFCARA1A	BFCCRA1A	15.39	0.0802	WFC_RA1A
	2	BFCARA2A	BFCCRA2A	2.18	0.0787	WFC_RA2A
	3	BFCARA3A	BFCCRA3A	2.18	0.0848	WFC_RA3A
	4	BFCARA4A	BFCCRA4A	15.39	0.0864	WFC_RA4A
	5	BFCARA5A	BFCCRA5A	15.39	0.0699	WFC_RA5A
Total Fuel Consumed						BC2KG

**Sequence VIB
Form 7
General Parameter Listing**

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUN	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

16 Hour Aging

	Spec	Average^A	Max^A	Min^A
1. Speed, r/min	1500 ±5	ARPM16H	XRPM16H	IRPM16H
2. Torque, N-m	98 ±0.10	ALD16H	XLD16H	ILD16H
3. Oil Gallery Temperature, °C	125 ±2	AOGT16H	XOGT16H	IOGT16H
4. Coolant Inlet Temperature, °C	105 ±2	ACINT16H	XCINT16H	ICINT16H
5. Oil Circulation Temperature, °C	Record	ASMPT16H	XSMPT16H	ISMPT16H
6. Coolant Out Temperature, °C	Record	ACOT16H	XCOT16H	ICOT16H
7. Intake Air Temperature, °C	27 ±2	AINAT16H	XINAT16H	IINAT16H
8. Fuel to Flowmeter Temperature, °C	20-32	AFTMM16H	XFTMM16H	IFTMM16H
9. Fuel to Fuel Rail Temperature, °C	20 ±2	AFTFR16H	XFTFR16H	IFTFR16H
10. Load Cell Temperature, °C	Record	ALCT16H	XLCT16H	ILCT16H
11. Oil Heater Temperature, °C	205 max	AHEAT16H	XHEAT16H	IHEAT16H
12. Intake Air Pressure, kPa	0.05 ±0.02	AINAP16H	XINAP16H	IINAP16H
13. Fuel to Flowmeter Pressure, kPa	100 min	AFPMM16H	XFPMM16H	IFPMM16H
14. Fuel to Fuel Rail Pressure, kPa	205-310	AFPFR16H	XFPFR16H	IFPFR16H
15. Intake Manifold Pressure, kPa abs.	Record	AINTV16H	XINTV16H	IINTV16H
16. Exhaust Back Pressure, kPa abs.	104 ±0.20	AEXBP16H	XEXBP16H	IEXBP16H
17. Engine Oil Pressure, kPa	Record	AOGP16H	XOGP16H	IOGP16H
18. Coolant Flow, L/min	130 ±4	AMCF16H	XMCF16H	IMCF16H
19. Fuel Flow, kg/h	Record	AFFLO16H	XFFLO16H	IFFLO16H
20. Intake Air Humidity, grains/kg	11.4±0.8	AINAH16H	XINAH16H	IINAH16H
21. Air/Fuel Ratio	Record	AAFR16H	XAFR16H	IAFR16H
22. Crankcase Pressure, kPa	0.00 ±0.25	ACCV16H	XCCV16H	ICCV16H

^A Based on a minimum of one determination per hour

**Sequence VIB
Form 8
General Parameter Listing**

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUT	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

80 Hour Aging

	Spec	Average ^A	Max ^A	Min ^A
1. Speed, r/min	2250 ± 5	ARPM80H	XRPM80H	IRPM80H
2. Torque, N-m	98 ±0.10	ALD80H	XLD80H	ILD80H
3. Oil Gallery Temperature, °C	135±2	AOGT80H	XOGT80H	IOGT80H
4. Coolant Inlet Temperature, °C	105 ±2	ACINT80H	XCINT80H	ICINT80H
5. Oil Circulation Temperature, °C	Record	ASMPT80H	XSMPT80H	ISMPT80H
6. Coolant Out Temperature, °C	Record	ACOT80H	XCOT80H	ICOT80H
7. Intake Air Temperature, °C	27 ±2	AINAT80H	XINAT80H	IINAT80H
8. Fuel to Flowmeter Temperature, °C	20-32	AFTMM80H	XFTMM80H	IFTMM80H
9. Fuel to Fuel Rail Temperature, °C	20 ±2	AFTFR80H	XFTFR80H	IFTFR80H
10. Load Cell Temperature, °C	Record	ALCT80H	XLCT80H	ILCT80H
11. Oil Heater Temperature, °C	205 max	AHEAT80H	XHEAT80H	IHEAT80H
12. Intake Air Pressure, kPa	0.05 ±0.02	AINAP80H	XINAP80H	IINAP80H
13. Fuel to Flowmeter Pressure, kPa	100 min	AFPMM80H	XFPMM80H	IFPMM80H
14. Fuel to Fuel Rail Pressure, kPa	205-310	AFPFR80H	XFPFR80H	IFPFR80H
15. Intake Manifold Pressure, kPa abs.	Record	AINTV80H	XINTV80H	IINTV80H
16. Exhaust Back Pressure, kPa abs.	104 ± 0.20	AEXBP80H	XEXBP80H	IEXBP80H
17. Engine Oil Pressure, kPa	Record	AOGP80H	XOGP80H	IOGP80H
18. Coolant Flow, L/min	130±4	AMCF80H	XMCF80H	IMCF80H
19. Fuel Flow, kg/h	Record	AFFLO80H	XFFLO80H	IFFLO80H
20. Intake Air Humidity, grains/kg	11.4 ±0.8	AINAH80H	XINAH80H	IINAH80H
21. Air/Fuel Ratio	Record	AAFR80H	XAFR80H	IAFR80H
22. Crankcase Pressure, kPa	0.00 ±0.25	ACCV80H	XCCV80H	ICCV80H

^A Based on a minimum of one determination per hour

**Sequence VIB
Form 9
General Parameter Summary**

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUN	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

BC Before Test Oil

General Parameters

	Spec	Stage				
		1	2	3	4	5
1. Oil Circulation Temperature, °C	Record	OCT_RB01	OCT_RB02	OCT_RB03	OCT_RB04	OCT_RB05
2. Coolant Out Temperature, °C	Record	COT_RB01	COT_RB02	COT_RB03	COT_RB04	COT_RB05
3. Fuel to Flowmeter Temperature,	20-32	FFT_RB01	FFT_RB02	FFT_RB03	FFT_RB04	FFT_RB05
4. Delta Fuel to Flowmeter Temp.,	≤4	FFTDRB01	FFTDRB02	FFTDRB03	FFTDRB04	FFTDRB05
5. Test Cell Temperature, °C	Record	TCT_RB01	TCT_RB02	TCT_RB03	TCT_RB04	TCT_RB05
6. Load Cell Temperature, °C	Record	LCT_RB01	LCT_RB02	LCT_RB03	LCT_RB04	LCT_RB05
7. Delta Load Cell Temperature,	≤12	LCTDRB01	LCTDRB02	LCTDRB03	LCTDRB04	LCTDRB05
8. Oil Heater Temperature, °C	205 max	OHT_RB01	OHT_RB02	OHT_RB03	OHT_RB04	OHT_RB05
9. Intake Air Pressure, kPa	0.05 ± .02	IAP_RB01	IAP_RB02	IAP_RB03	IAP_RB04	IAP_RB05
10. Fuel to Flowmeter Pressure,	100 min	FFP_RB01	FFP_RB02	FFP_RB03	FFP_RB04	FFP_RB05
11. Fuel to Fuel Rail Pressure, kPa	205-310	FFRPRB01	FFRPRB02	FFRPRB03	FFRPRB04	FFRPRB05
12. Intake Manifold Pressure, kPa	Record	IMP_RB01	IMP_RB02	IMP_RB03	IMP_RB04	IMP_RB05
13. Engine Oil Pressure, kPa	Record	EOP_RB01	EOP_RB02	EOP_RB03	EOP_RB04	EOP_RB05
14. Coolant Flow, L/min	130 ±4	CFLORB01	CFLORB02	CFLORB03	CFLORB04	CFLORB05
15. Intake Air Humidity, grains/kg	11.4 ±0.8	IAH_RB01	IAH_RB02	IAH_RB03	IAH_RB04	IAH_RB05
16. Crankcase Pressure, kPa	0.00 ±0.25	CCV_RB01	CCV_RB02	CCV_RB03	CCV_RB04	CCV_RB05
17. Blowby, L/min ^B	Record	BLBYB01				
18. Barometric Pressure, kPa	Record	BAP_RB01	BAP_RB02	BAP_RB03	BAP_RB04	BAP_RB05

^A Difference between the maximum stage average reading of the entire test and the individual stage average readings

^B Not required by test procedure

**Sequence VIB
Form 10
General Parameter Summary**

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUN	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

**Test Oil Phase I
General Parameters**

	Spec	Stage				
		1	2	3	4	5
1. Oil Circulation Temperature, °C	Record	OCT_RC01	OCT_RC02	OCT_RC03	OCT_RC04	OCT_RC05
2. Coolant Out Temperature, °C	Record	COT_RC01	COT_RC02	COT_RC03	COT_RC04	COT_RC05
3. Fuel to Flowmeter Temperature, °C	20-32	FFT_RC01	FFT_RC02	FFT_RC03	FFT_RC04	FFT_RC05
4. Delta Fuel to Flowmeter Temp., °C ^A	≤ 4	FFTDRC01	FFTDRC02	FFTDRC03	FFTDRC04	FFTDRC05
5. Test Cell Temperature, °C	Record	TCT_RC01	TCT_RC02	TCT_RC03	TCT_RC04	TCT_RC05
6. Load Cell Temperature, °C	Record	LCT_RC01	LCT_RC02	LCT_RC03	LCT_RC04	LCT_RC05
7. Delta Load Cell Temperature, °C ^A	≤ 12	LCTDRC01	LCTDRC02	LCTDRC03	LCTDRC04	LCTDRC05
8. Oil Heater Temperature, °C	205 max	OHT_RC01	OHT_RC02	OHT_RC03	OHT_RC04	OHT_RC05
9. Intake Air Pressure, kPa	0.05 ± .02	IAP_RC01	IAP_RC02	IAP_RC03	IAP_RC04	IAP_RC05
10. Fuel to Flowmeter Pressure, kPa	100 min	FFP_RC01	FFP_RC02	FFP_RC03	FFP_RC04	FFP_RC05
11. Fuel to Fuel Rail Pressure, kPa	205 – 310	FFRPRC01	FFRPRC02	FFRPRC03	FFRPRC04	FFRPRC05
12. Intake Manifold Pressure, kPa abs.	Record	IMP_RC01	IMP_RC02	IMP_RC03	IMP_RC04	IMP_RC05
13. Engine Oil Pressure, kPa	Record	EOP_RC01	EOP_RC02	EOP_RC03	EOP_RC04	EOP_RC05
14. Coolant Flow, L/min	130 ± 4	CFLORC01	CFLORC02	CFLORC03	CFLORC04	CFLORC05
15. Intake Air Humidity, grains/kg	11.4 ± 0.8	IAH_RC01	IAH_RC02	IAH_RC03	IAH_RC04	IAH_RC05
16. Crankcase Pressure, kPa	0.00 ± 0.25	CCV_RC01	CCV_RC02	CCV_RC03	CCV_RC04	CCV_RC05
17. Barometric Pressure, kPa	Record	BAP_RC01	BAP_RC02	BAP_RC03	BAP_RC04	BAP_RC05

^A Difference between the maximum stage average reading of the entire test and the individual stage average readings

**Sequence VIB
Form 11
General Parameter Summary**

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUN	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

**Test Oil Phase II
General Parameters**

	Spec	Stage				
		1	2	3	4	5
1. Oil Circulation Temperature, °C	Record	OCT_RD01	OCT_RD02	OCT_RD03	OCT_RD04	OCT_RD05
2. Coolant Out Temperature, °C	Record	COT_RD01	COT_RD02	COT_RD03	COT_RD04	COT_RD05
3. Fuel to Flowmeter Temperature, °C	20-32	FFT_RD01	FFT_RD02	FFT_RD03	FFT_RD04	FFT_RD05
4. Delta Fuel to Flowmeter Temp., °C ^A	≤ 4	FFTDRD01	FFTDRD02	FFTDRD03	FFTDRD04	FFTDRD05
5. Test Cell Temperature, °C	Record	TCT_RD01	TCT_RD02	TCT_RD03	TCT_RD04	TCT_RD05
6. Load Cell Temperature, °C	Record	LCT_RD01	LCT_RD02	LCT_RD03	LCT_RD04	LCT_RD05
7. Delta Load Cell Temperature, °C ^A	≤ 12	LCTDRD01	LCTDRD02	LCTDRD03	LCTDRD04	LCTDRD05
8. Oil Heater Temperature, °C	205 max	OHT_RD01	OHT_RD02	OHT_RD03	OHT_RD04	OHT_RD05
9. Intake Air Pressure, kPa	0.05 ± .02	IAP_RD01	IAP_RD02	IAP_RD03	IAP_RD04	IAP_RD05
10. Fuel to Flowmeter Pressure, kPa	100 min	FFP_RD01	FFP_RD02	FFP_RD03	FFP_RD04	FFP_RD05
11. Fuel to Fuel Rail Pressure, kPa	205 – 310	FFRPRD01	FFRPRD02	FFRPRD03	FFRPRD04	FFRPRD05
12. Intake Manifold Pressure, kPa abs.	Record	IMP_RD01	IMP_RD02	IMP_RD03	IMP_RD04	IMP_RD05
13. Engine Oil Pressure, kPa	Record	EOP_RD01	EOP_RD02	EOP_RD03	EOP_RD04	EOP_RD05
14. Coolant Flow, L/min	130 ± 4	CFLORD01	CFLORD02	CFLORD03	CFLORD04	CFLORD05
15. Intake Air Humidity, grains/kg	11.4 ± 0.8	IAH_RD01	IAH_RD02	IAH_RD03	IAH_RD04	IAH_RD05
16. Crankcase Pressure, kPa	0.00 ± 0.25	CCV_RD01	CCV_RD02	CCV_RD03	CCV_RD04	CCV_RD05
17. Barometric Pressure, kPa	Record	BAP_RD01	BAP_RD02	BAP_RD03	BAP_RD04	BAP_RD05

^A Difference between the maximum stage average reading of the entire test and the individual stage average readings

**Sequence VIB
Form 12
General Parameter Summary**

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUN	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

**BC After Test Oil
General Parameters**

	Spec	Stage				
		1	2	3	4	5
1. Oil Circulation Temperature, °C	Record	OCT_RA01	OCT_RA02	OCT_RA03	OCT_RA04	OCT_RA05
2. Coolant Out Temperature, °C	Record	COT_RA01	COT_RA02	COT_RA03	COT_RA04	COT_RA05
3. Fuel to Flowmeter Temperature, °C	20-32	FFT_RA01	FFT_RA02	FFT_RA03	FFT_RA04	FFT_RA05
4. Delta Fuel to Flowmeter Temp., °C ^A	≤ 4	FFTDRA01	FFTDRA02	FFTDRA03	FFTDRA04	FFTDRA05
5. Test Cell Temperature, °C	Record	TCT_RA01	TCT_RA02	TCT_RA03	TCT_RA04	TCT_RA05
6. Load Cell Temperature, °C	Record	LCT_RA01	LCT_RA02	LCT_RA03	LCT_RA04	LCT_RA05
7. Delta Load Cell Temperature, °C ^A	≤ 12	LCTDRA01	LCTDRA02	LCTDRA03	LCTDRA04	LCTDRA05
8. Oil Heater Temperature, °C	205 max	OHT_RA01	OHT_RA02	OHT_RA03	OHT_RA04	OHT_RA05
9. Intake Air Pressure, kPa	0.05 ± .02	IAP_RA01	IAP_RA02	IAP_RA03	IAP_RA04	IAP_RA05
10. Fuel to Flowmeter Pressure, kPa	100 min	FFP_RA01	FFP_RA02	FFP_RA03	FFP_RA04	FFP_RA05
11. Fuel to Fuel Rail Pressure, kPa	205 - 310	FFRPRA01	FFRPRA02	FFRPRA03	FFRPRA04	FFRPRA05
12. Intake Manifold Pressure, kPa abs.	Record	IMP_RA01	IMP_RA02	IMP_RA03	IMP_RA04	IMP_RA05
13. Engine Oil Pressure, kPa	Record	EOP_RA01	EOP_RA02	EOP_RA03	EOP_RA04	EOP_RA05
14. Coolant Flow, L/min	130 ± 4	CFLORA01	CFLORA02	CFLORA03	CFLORA04	CFLORA05
15. Intake Air Humidity, grains/kg	11.4 ± 0.8	IAH_RA01	IAH_RA02	IAH_RA03	IAH_RA04	IAH_RA05
16. Crankcase Pressure, kPa	0.00 ± 0.25	CCV_RA01	CCV_RA02	CCV_RA03	CCV_RA04	CCV_RA05
17. Barometric Pressure, kPa	Record	BAP_RA01	BAP_RA02	BAP_RA03	BAP_RA04	BAP_RA05

^A Difference between the maximum stage average reading of the entire test and the individual stage average readings

Sequence VIB
Form 13
Critical Parameter Summary - Stage 1

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUN	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

BC Before Test Oil

Step SPEC	BSFC kg/kW-h	Speed r/min	Torque N-m	Oil Gallery Temp. °C	Coolant In Temp, °C	Intake Air Temp, °C	Fuel Rail Temp, °C	EBP kPa 104 ± .17	Fuel Flow kg/h Record	AFR 14.00- 15.00	Delta ^A AFR ≤ .50
1	BFC_RB1	RPM_RB1	LOADRB1	OGT_RB1	CINTRB1	IAT_RB1	FRT_RB1	EBP_RB1	FCR_RB1	AFR_RB1	
2	BFC_RB1	RPM_RB1	LOADRB1	OGT_RB1	CINTRB1	IAT_RB1	FRT_RB1	EBP_RB1	FCR_RB1	AFR_RB1	
3	BFC_RB1	RPM_RB1	LOADRB1	OGT_RB1	CINTRB1	IAT_RB1	FRT_RB1	EBP_RB1	FCR_RB1	AFR_RB1	
4	BFC_RB1	RPM_RB1	LOADRB1	OGT_RB1	CINTRB1	IAT_RB1	FRT_RB1	EBP_RB1	FCR_RB1	AFR_RB1	
5	BFC_RB1	RPM_RB1	LOADRB1	OGT_RB1	CINTRB1	IAT_RB1	FRT_RB1	EBP_RB1	FCR_RB1	AFR_RB1	
6	BFC_RB1	RPM_RB1	LOADRB1	OGT_RB1	CINTRB1	IAT_RB1	FRT_RB1	EBP_RB1	FCR_RB1	AFR_RB1	
AVG.	BFCARB1	RPM_RB1	LOADRB1	OGT_RB1	CINTRB1	IAT_RB1	FRT_RB1	EBP_RB1	FCR_RB1	AFR_RB1	AFRDRB1
SD	BFCSRB1										
C.V.	BFCRB1										

Test Oil Phase I

Step SPEC	BSFC kg/Kw-h	Speed r/min	Torque N-m	Oil Gallery Temp. °C	Coolant In Temp, °C	Intake Air Temp, °C	Fuel Rail Temp, °C	EBP kPa 104 ± .17	Fuel Flow kg/h Record	AFR 14.00- 15.00	Delta ^A AFR ≤ .50
1	BFC_RC1	RPM_RC1	LOADRC1	OGT_RC1	CINTRC1	IAT_RC1	FRT_RC1	EBP_RC1	FCR_RC1	AFR_RC1	
2	BFC_RC1	RPM_RC1	LOADRC1	OGT_RC1	CINTRC1	IAT_RC1	FRT_RC1	EBP_RC1	FCR_RC1	AFR_RC1	
3	BFC_RC1	RPM_RC1	LOADRC1	OGT_RC1	CINTRC1	IAT_RC1	FRT_RC1	EBP_RC1	FCR_RC1	AFR_RC1	
4	BFC_RC1	RPM_RC1	LOADRC1	OGT_RC1	CINTRC1	IAT_RC1	FRT_RC1	EBP_RC1	FCR_RC1	AFR_RC1	
5	BFC_RC1	RPM_RC1	LOADRC1	OGT_RC1	CINTRC1	IAT_RC1	FRT_RC1	EBP_RC1	FCR_RC1	AFR_RC1	
6	BFC_RC1	RPM_RC1	LOADRC1	OGT_RC1	CINTRC1	IAT_RC1	FRT_RC1	EBP_RC1	FCR_RC1	AFR_RC1	
AVG.	BFCARC1	RPM_RC1	LOADRC1	OGT_RC1	CINTRC1	IAT_RC1	FRT_RC1	EBP_RC1	FCR_RC1	AFR_RC1	AFRDRC1
SD	BFCSRC1										
C.V.	BFCRC1										

^A Difference between the maximum stage average reading of the entire test and the individual stage average readings.

Sequence VIB
Form 13A
Critical Parameter Summary - Stage 1

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUN	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

Test Oil Phase II

Step SPEC	BSFC kg/kW-h	Speed r/min	Torque N-m	Oil Gallery Temp. °C	Coolant In Temp, °C	Intake Air Temp, °C	Fuel Rail Temp, °C	EBP kPa	Fuel Flow kg/h	AFR 14.00-15.00	Delta ^A AFR ≤ .50
1	BFC_RD11	RPM_RD11	LOADRD11	IOGT_RD11	CINTRD11	IAT_RD11	FRT_RD11	EBP_RD11	FCR_RD11	AFR_RD11	
2	BFC_RD12	RPM_RD12	LOADRD12	IOGT_RD12	CINTRD12	IAT_RD12	FRT_RD12	EBP_RD12	FCR_RD12	AFR_RD12	
3	BFC_RD13	RPM_RD13	LOADRD13	IOGT_RD13	CINTRD13	IAT_RD13	FRT_RD13	EBP_RD13	FCR_RD13	AFR_RD13	
4	BFC_RD14	RPM_RD14	LOADRD14	IOGT_RD14	CINTRD14	IAT_RD14	FRT_RD14	EBP_RD14	FCR_RD14	AFR_RD14	
5	BFC_RD15	RPM_RD15	LOADRD15	IOGT_RD15	CINTRD15	IAT_RD15	FRT_RD15	EBP_RD15	FCR_RD15	AFR_RD15	
6	BFC_RD16	RPM_RD16	LOADRD16	IOGT_RD16	CINTRD16	IAT_RD16	FRT_RD16	EBP_RD16	FCR_RD16	AFR_RD16	
AVG.	BFCARD1A	RPM_RD1A	LOADRD1A	IOGT_RD1A	CINTRD1A	IAT_RD1A	FRT_RD1A	EBP_RD1A	FCR_RD1A	AFR_RD1A	ARDRD1A
SD	BFCSRD1A										
C.V.	BFCARD1A										

BC After Test Oil

Step SPEC	BSFC kg/Kw-h	Speed r/min	Torque N-m	Oil Gallery Temp. °C	Coolant In Temp, °C	Intake Air Temp, °C	Fuel Rail Temp, °C	EBP kPa	Fuel Flow kg/h	AFR 14.00-15.00	Delta ^A AFR ≤ .50
1	BFC_RA11	RPM_RA11	LOADRA11	IOGT_RA11	CINTRA11	IAT_RA11	FRT_RA11	EBP_RA11	FCR_RA11	AFR_RA11	
2	BFC_RA12	RPM_RA12	LOADRA12	IOGT_RA12	CINTRA12	IAT_RA12	FRT_RA12	EBP_RA12	FCR_RA12	AFR_RA12	
3	BFC_RA13	RPM_RA13	LOADRA13	IOGT_RA13	CINTRA13	IAT_RA13	FRT_RA13	EBP_RA13	FCR_RA13	AFR_RA13	
4	BFC_RA14	RPM_RA14	LOADRA14	IOGT_RA14	CINTRA14	IAT_RA14	FRT_RA14	EBP_RA14	FCR_RA14	AFR_RA14	
5	BFC_RA15	RPM_RA15	LOADRA15	IOGT_RA15	CINTRA15	IAT_RA15	FRT_RA15	EBP_RA15	FCR_RA15	AFR_RA15	
6	BFC_RA16	RPM_RA16	LOADRA16	IOGT_RA16	CINTRA16	IAT_RA16	FRT_RA16	EBP_RA16	FCR_RA16	AFR_RA16	
AVG.	BFCARA1A	RPM_RA1A	LOADRA1A	IOGT_RA1A	CINTRA1A	IAT_RA1A	FRT_RA1A	EBP_RA1A	FCR_RA1A	AFR_RA1A	ARDRA1A
D	BFCRA1A										
C.V.	BFCRA1A										

^A Difference between the maximum stage average reading of the entire test and the individual stage average readings.

Sequence VIB
Form 14
Critical Parameter Summary - Stage 2

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRU	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

BC Before 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 ^A AFR ≤ .50
1	BFC_RB21	RPM_RB21	LOADRB21	OGT_RB21	CINTRB21	IAT_RB21	FRT_RB21	EBP_RB21	FCR_RB21	AFR_RB21	
2	BFC_RB22	RPM_RB22	LOADRB22	OGT_RB22	CINTRB22	IAT_RB22	FRT_RB22	EBP_RB22	FCR_RB22	AFR_RB22	
3	BFC_RB23	RPM_RB23	LOADRB23	OGT_RB23	CINTRB23	IAT_RB23	FRT_RB23	EBP_RB23	FCR_RB23	AFR_RB23	
4	BFC_RB24	RPM_RB24	LOADRB24	OGT_RB24	CINTRB24	IAT_RB24	FRT_RB24	EBP_RB24	FCR_RB24	AFR_RB24	
5	BFC_RB25	RPM_RB25	LOADRB25	OGT_RB25	CINTRB25	IAT_RB25	FRT_RB25	EBP_RB25	FCR_RB25	AFR_RB25	
6	BFC_RB26	RPM_RB26	LOADRB26	OGT_RB26	CINTRB26	IAT_RB26	FRT_RB26	EBP_RB26	FCR_RB26	AFR_RB26	
AVG.	BFCARB2A	RPM_RB2A	LOADRB2A	OGT_RB2A	CINTRB2A	IAT_RB2A	FRT_RB2A	EBP_RB2A	FCR_RB2A	AFR_RB2A	AFRDRB2A
SD	BFCSRB2A										
C.V.	BFCORB2A										

Test Oil Phase I

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 ^A AFR ≤ .50
1	BFC_RC21	RPM_RC21	LOADRC21	OGT_RC21	CINTRC21	IAT_RC21	FRT_RC21	EBP_RC21	FCR_RC21	AFR_RC21	
2	BFC_RC22	RPM_RC22	LOADRC22	OGT_RC22	CINTRC22	IAT_RC22	FRT_RC22	EBP_RC22	FCR_RC22	AFR_RC22	
3	BFC_RC23	RPM_RC23	LOADRC23	OGT_RC23	CINTRC23	IAT_RC23	FRT_RC23	EBP_RC23	FCR_RC23	AFR_RC23	
4	BFC_RC24	RPM_RC24	LOADRC24	OGT_RC24	CINTRC24	IAT_RC24	FRT_RC24	EBP_RC24	FCR_RC24	AFR_RC24	
5	BFC_RC25	RPM_RC25	LOADRC25	OGT_RC25	CINTRC25	IAT_RC25	FRT_RC25	EBP_RC25	FCR_RC25	AFR_RC25	
6	BFC_RC26	RPM_RC26	LOADRC26	OGT_RC26	CINTRC26	IAT_RC26	FRT_RC26	EBP_RC26	FCR_RC26	AFR_RC26	
AVG.	BFCARC2A	RPM_RC2A	LOADRC2A	OGT_RC2A	CINTRC2A	IAT_RC2A	FRT_RC2A	EBP_RC2A	FCR_RC2A	AFR_RC2A	AFRDRC2A
SD	BFCSRC2A										
C.V.	BFCORC2A										

^A Difference between the maximum stage average reading of the entire test and the individual stage average readings.

Sequence VIB
Form 14A
Critical Parameter Summary - Stage 2

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUN	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

Test Oil Phase II

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 ^A AFR ≤ .50
1	BFC_RD21	RPM_RD21	LOADRD21	OGT_RD21	CINTRD21	IAT_RD21	FRT_RD21	EBP_RD21	FUR_RD21	AFR_RD21	
2	BFC_RD22	RPM_RD22	LOADRD22	OGT_RD22	CINTRD22	IAT_RD22	FRT_RD22	EBP_RD22	FUR_RD22	AFR_RD22	
3	BFC_RD23	RPM_RD23	LOADRD23	OGT_RD23	CINTRD23	IAT_RD23	FRT_RD23	EBP_RD23	FUR_RD23	AFR_RD23	
4	BFC_RD24	RPM_RD24	LOADRD24	OGT_RD24	CINTRD24	IAT_RD24	FRT_RD24	EBP_RD24	FUR_RD24	AFR_RD24	
5	BFC_RD25	RPM_RD25	LOADRD25	OGT_RD25	CINTRD25	IAT_RD25	FRT_RD25	EBP_RD25	FUR_RD25	AFR_RD25	
6	BFC_RD26	RPM_RD26	LOADRD26	OGT_RD26	CINTRD26	IAT_RD26	FRT_RD26	EBP_RD26	FUR_RD26	AFR_RD26	
AVG.	BFCARD2A	RPM_RD2A	LOADRD2A	OGT_RD2A	CINTRD2A	IAT_RD2A	FRT_RD2A	EBP_RD2A	FUR_RD2A	AFR_RD2A	AFRDRD2A
SD	BFCSRD2A										
C.V.	BFCARD2A										

BC After 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 ^A AFR ≤ .50
1	BFC_RA21	RPM_RA21	LOADRA21	OGT_RA21	CINTRA21	IAT_RA21	FRT_RA21	EBP_RA21	FUR_RA21	AFR_RA21	
2	BFC_RA22	RPM_RA22	LOADRA22	OGT_RA22	CINTRA22	IAT_RA22	FRT_RA22	EBP_RA22	FUR_RA22	AFR_RA22	
3	BFC_RA23	RPM_RA23	LOADRA23	OGT_RA23	CINTRA23	IAT_RA23	FRT_RA23	EBP_RA23	FUR_RA23	AFR_RA23	
4	BFC_RA24	RPM_RA24	LOADRA24	OGT_RA24	CINTRA24	IAT_RA24	FRT_RA24	EBP_RA24	FUR_RA24	AFR_RA24	
5	BFC_RA25	RPM_RA25	LOADRA25	OGT_RA25	CINTRA25	IAT_RA25	FRT_RA25	EBP_RA25	FUR_RA25	AFR_RA25	
6	BFC_RA26	RPM_RA26	LOADRA26	OGT_RA26	CINTRA26	IAT_RA26	FRT_RA26	EBP_RA26	FUR_RA26	AFR_RA26	
AVG.	BFCARA2A	RPM_RA2A	LOADRA2A	OGT_RA2A	CINTRA2A	IAT_RA2A	FRT_RA2A	EBP_RA2A	FUR_RA2A	AFR_RA2A	AFRDRA2A
SD	BFCRA2A										
C.V.	BFCRA2A										

^A Difference between the maximum stage average reading of the entire test and the individual stage average readings.

Sequence VIB
Form 15
Critical Parameter Summary - Stage 3

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUN	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

BC Before Test Oil

Step SPEC	BSFC kg/kW-h	Speed r/min	Torque N-m	Oil Gallery Temp. °C	Coolant In Temp, °C	Intake Air Temp, °C	Fuel Rail Temp, °C	EBP kPa	Fuel Flow kg/h	AFR 14.00-15.00	Delta ^A AFR ≤ .50
1	BFC_RB31	RPM_RB31	LOADRB31	OGT_RB31	CINTRB31	IAT_RB31	FRT_RB31	EBP_RB31	FCR_RB31	AFR_RB31	
2	BFC_RB32	RPM_RB32	LOADRB32	OGT_RB32	CINTRB32	IAT_RB32	FRT_RB32	EBP_RB32	FCR_RB32	AFR_RB32	
3	BFC_RB33	RPM_RB33	LOADRB33	OGT_RB33	CINTRB33	IAT_RB33	FRT_RB33	EBP_RB33	FCR_RB33	AFR_RB33	
4	BFC_RB34	RPM_RB34	LOADRB34	OGT_RB34	CINTRB34	IAT_RB34	FRT_RB34	EBP_RB34	FCR_RB34	AFR_RB34	
5	BFC_RB35	RPM_RB35	LOADRB35	OGT_RB35	CINTRB35	IAT_RB35	FRT_RB35	EBP_RB35	FCR_RB35	AFR_RB35	
6	BFC_RB36	RPM_RB36	LOADRB36	OGT_RB36	CINTRB36	IAT_RB36	FRT_RB36	EBP_RB36	FCR_RB36	AFR_RB36	
AVG.	BFCARB3A	RPM_RB3A	LOADRB3A	OGT_RB3A	CINTRB3A	IAT_RB3A	FRT_RB3A	EBP_RB3A	FCR_RB3A	AFR_RB3A	AFRDRB3A
SD	BFCSRB3A										
C.V.	BFCRB3A										

Test Oil Phase I

Step SPEC	BSFC kg/Kw-h	Speed r/min	Torque N-m	Oil Gallery Temp. °C	Coolant In Temp, °C	Intake Air Temp, °C	Fuel Rail Temp, °C	EBP kPa	Fuel Flow kg/h	AFR 14.00-15.00	Delta ^A AFR ≤ .50
1	BFC_RC31	RPM_RC31	LOADRC31	OGT_RC31	CINTRC31	IAT_RC31	FRT_RC31	EBP_RC31	FCR_RC31	AFR_RC31	
2	BFC_RC32	RPM_RC32	LOADRC32	OGT_RC32	CINTRC32	IAT_RC32	FRT_RC32	EBP_RC32	FCR_RC32	AFR_RC32	
3	BFC_RC33	RPM_RC33	LOADRC33	OGT_RC33	CINTRC33	IAT_RC33	FRT_RC33	EBP_RC33	FCR_RC33	AFR_RC33	
4	BFC_RC34	RPM_RC34	LOADRC34	OGT_RC34	CINTRC34	IAT_RC34	FRT_RC34	EBP_RC34	FCR_RC34	AFR_RC34	
5	BFC_RC35	RPM_RC35	LOADRC35	OGT_RC35	CINTRC35	IAT_RC35	FRT_RC35	EBP_RC35	FCR_RC35	AFR_RC35	
6	BFC_RC36	RPM_RC36	LOADRC36	OGT_RC36	CINTRC36	IAT_RC36	FRT_RC36	EBP_RC36	FCR_RC36	AFR_RC36	
AVG.	BFCARC3A	RPM_RC3A	LOADRC3A	OGT_RC3A	CINTRC3A	IAT_RC3A	FRT_RC3A	EBP_RC3A	FCR_RC3A	AFR_RC3A	AFRDRC3A
SD	BFCSRC3A										
C.V.	BFCRC3A										

^A Difference between the maximum stage average reading of the entire test and the individual stage average readings.

**Sequence VIB
Form 15A
Critical Parameter Summary - Stage 3**

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUN	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

Test Oil Phase II

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 ^A AFR ≤ .50
1	BFC RD31	RPM_RD31	LOADRD31	OGT_RD31	CINTRD31	IAT_RD31	FRT_RD31	EBP_RD31	FCR_RD31	AFR_RD31	
2	BFC_RD32	RPM_RD32	LOADRD32	OGT_RD32	CINTRD32	IAT_RD32	FRT_RD32	EBP_RD32	FCR_RD32	AFR_RD32	
3	BFC_RD33	RPM_RD33	LOADRD33	OGT_RD33	CINTRD33	IAT_RD33	FRT_RD33	EBP_RD33	FCR_RD33	AFR_RD33	
4	BFC_RD34	RPM_RD34	LOADRD34	OGT_RD34	CINTRD34	IAT_RD34	FRT_RD34	EBP_RD34	FCR_RD34	AFR_RD34	
5	BFC_RD35	RPM_RD35	LOADRD35	OGT_RD35	CINTRD35	IAT_RD35	FRT_RD35	EBP_RD35	FCR_RD35	AFR_RD35	
6	BFC_RD36	RPM_RD36	LOADRD36	OGT_RD36	CINTRD36	IAT_RD36	FRT_RD36	EBP_RD36	FCR_RD36	AFR_RD36	
AVG.	BFCARD3A	RPM_RD3A	LOADRD3A	OGT_RD3A	CINTRD3A	IAT_RD3A	FRT_RD3A	EBP_RD3A	FCR_RD3A	AFR_RD3A	AFRD3A
SD	BFCSRD3A										
C.V.	BFCARD3A										

BC After 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 ^A AFR ≤ .50
1	BFC RA31	RPM_RA31	LOADRA31	OGT_RA31	CINTRA31	IAT_RA31	FRT_RA31	EBP_RA31	FCR_RA31	AFR_RA31	
2	BFC_RA32	RPM_RA32	LOADRA32	OGT_RA32	CINTRA32	IAT_RA32	FRT_RA32	EBP_RA32	FCR_RA32	AFR_RA32	
3	BFC_RA33	RPM_RA33	LOADRA33	OGT_RA33	CINTRA33	IAT_RA33	FRT_RA33	EBP_RA33	FCR_RA33	AFR_RA33	
4	BFC_RA34	RPM_RA34	LOADRA34	OGT_RA34	CINTRA34	IAT_RA34	FRT_RA34	EBP_RA34	FCR_RA34	AFR_RA34	
5	BFC_RA35	RPM_RA35	LOADRA35	OGT_RA35	CINTRA35	IAT_RA35	FRT_RA35	EBP_RA35	FCR_RA35	AFR_RA35	
6	BFC_RA36	RPM_RA36	LOADRA36	OGT_RA36	CINTRA36	IAT_RA36	FRT_RA36	EBP_RA36	FCR_RA36	AFR_RA36	
AVG.	BFCARA3A	RPM_RA3A	LOADRA3A	OGT_RA3A	CINTRA3A	IAT_RA3A	FRT_RA3A	EBP_RA3A	FCR_RA3A	AFR_RA3A	AFRDRA3A
SD	BFCRA3A										
C.V.	BFCRA3A										

^A Difference between the maximum stage average reading of the entire test and the individual stage average readings.

Sequence VIB
Form 16
Critical Parameter Summary - Stage 4

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRU	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

BC Before Test Oil

Step	BSFC	Speed	Torque	Oil	Coolant	Intake	Fuel Rail	EBP	Fuel	AFR	Delta ^A
SPEC	kg/kW-h	r/min	N-m	Gallery	In	Air	Temp, °C	kPa	Flow	14.00-	AFR
		1500 ± 2	98 ± .07	Temp. °C	Temp, °C	Temp, °C	Temp, °C	104 ±	kg/h	15.00	≤ .50
				70 ± 1	60 ± 1	27 ± 2	20 ± 2	.17	Record		
1	BFC_RB41	RPM_RB41	LOADRB41	OGT_RB41	CINTRB41	IAT_RB41	FRT_RB41	EBP_RB41	FRCR_B41	AFR_RB41	
2	BFC_RB42	RPM_RB42	LOADRB42	OGT_RB42	CINTRB42	IAT_RB42	FRT_RB42	EBP_RB42	FRCR_B42	AFR_RB42	
3	BFC_RB43	RPM_RB43	LOADRB43	OGT_RB43	CINTRB43	IAT_RB43	FRT_RB43	EBP_RB43	FRCR_B43	AFR_RB43	
4	BFC_RB44	RPM_RB44	LOADRB44	OGT_RB44	CINTRB44	IAT_RB44	FRT_RB44	EBP_RB44	FRCR_B44	AFR_RB44	
5	BFC_RB45	RPM_RB45	LOADRB45	OGT_RB45	CINTRB45	IAT_RB45	FRT_RB45	EBP_RB45	FRCR_B45	AFR_RB45	
6	BFC_RB46	RPM_RB46	LOADRB46	OGT_RB46	CINTRB46	IAT_RB46	FRT_RB46	EBP_RB46	FRCR_B46	AFR_RB46	
AVG.	BFCARB4A	RPM_RB4A	LOADRB4A	OGT_RB4A	CINTRB4A	IAT_RB4A	FRT_RB4A	EBP_RB4A	FRCR_B4A	AFR_RB4A	AFRDRB4A
SD	BFCSRB4A										
C.V.	BFCRB4A										

Test Oil Phase I

Step	BSFC	Speed	Torque	Oil	Coolant	Intake	Fuel Rail	EBP	Fuel	AFR	Delta ^A
SPEC	kg/Kw-h	r/min	N-m	Gallery	In	Air	Temp, °C	kPa	Flow	14.00-	AFR
		1500 ± 2	98 ± .07	Temp. °C	Temp, °C	Temp, °C	Temp, °C	104 ±	kg/h	15.00	≤ .50
				70 ± 1	60 ± 1	27 ± 2	20 ± 2	.17	Record		
1	BFC_RC41	RPM_RC41	LOADRC41	OGT_RC41	CINTRC41	IAT_RC41	FRT_RC41	EBP_RC41	FRCR_RC41	AFR_RC41	
2	BFC_RC42	RPM_RC42	LOADRC42	OGT_RC42	CINTRC42	IAT_RC42	FRT_RC42	EBP_RC42	FRCR_RC42	AFR_RC42	
3	BFC_RC43	RPM_RC43	LOADRC43	OGT_RC43	CINTRC43	IAT_RC43	FRT_RC43	EBP_RC43	FRCR_RC43	AFR_RC43	
4	BFC_RC44	RPM_RC44	LOADRC44	OGT_RC44	CINTRC44	IAT_RC44	FRT_RC44	EBP_RC44	FRCR_RC44	AFR_RC44	
5	BFC_RC45	RPM_RC45	LOADRC45	OGT_RC45	CINTRC45	IAT_RC45	FRT_RC45	EBP_RC45	FRCR_RC45	AFR_RC45	
6	BFC_RC46	RPM_RC46	LOADRC46	OGT_RC46	CINTRC46	IAT_RC46	FRT_RC46	EBP_RC46	FRCR_RC46	AFR_RC46	
AVG.	BFCARC4A	RPM_RC4A	LOADRC4A	OGT_RC4A	CINTRC4A	IAT_RC4A	FRT_RC4A	EBP_RC4A	FRCR_RC4A	AFR_RC4A	AFRDRC4A
SD	BFCSRC4A										
C.V.	BFCRC4A										

^A Difference between the maximum stage average reading of the entire test and the individual stage average readings.

Sequence VIB
Form 16A
Critical Parameter Summary - Stage 4

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUN	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

Test Oil Phase II

Step	BSFC	Speed	Torque	Oil	Coolant	Intake	Fuel Rail	EBP	Fuel	AFR	Delta ^A
SPEC	kg/kW-h	r/min	N-m	Gallery	In	Air	Temp, °C	kPa	Flow	14.00-	AFR
		1500 ± 2	98 ± .07	Temp. °C	Temp, °C	Temp, °C	27 ± 2	104 ± .17	kg/h	15.00	≤ .50
1	BFC_RD41	RPM_RD41	LOADRD41	OGT_RD41	CINTRD41	IAT_RD41	FRT_RD41	EBP_RD41	FCD_RD41	AFR_RD41	
2	BFC_RD42	RPM_RD42	LOADRD42	OGT_RD42	CINTRD42	IAT_RD42	FRT_RD42	EBP_RD42	FCD_RD42	AFR_RD42	
3	BFC_RD43	RPM_RD43	LOADRD43	OGT_RD43	CINTRD43	IAT_RD43	FRT_RD43	EBP_RD43	FCD_RD43	AFR_RD43	
4	BFC_RD44	RPM_RD44	LOADRD44	OGT_RD44	CINTRD44	IAT_RD44	FRT_RD44	EBP_RD44	FCD_RD44	AFR_RD44	
5	BFC_RD45	RPM_RD45	LOADRD45	OGT_RD45	CINTRD45	IAT_RD45	FRT_RD45	EBP_RD45	FCD_RD45	AFR_RD45	
6	BFC_RD46	RPM_RD46	LOADRD46	OGT_RD46	CINTRD46	IAT_RD46	FRT_RD46	EBP_RD46	FCD_RD46	AFR_RD46	
AVG.	BFCARD4A	RPM_RD4A	LOADRD4A	OGT_RD4A	CINTRD4A	IAT_RD4A	FRT_RD4A	EBP_RD4A	FCD_RD4A	AFR_RD4A	FCDRD4A
SD	BFCSRD4A										
C.V.	BFCARD4A										

BC After Test Oil

Step	BSFC	Speed	Torque	Oil	Coolant	Intake	Fuel Rail	EBP	Fuel	AFR	Delta ^A
SPEC	kg/Kw-h	r/min	N-m	Gallery	In	Air	Temp, °C	kPa	Flow	14.00-	AFR
		1500 ± 2	98 ± .07	Temp. °C	Temp, °C	Temp, °C	27 ± 2	104 ± .17	kg/h	15.00	≤ .50
1	BFC_RA41	RPM_RA41	LOADRA41	OGT_RA41	CINTRA41	IAT_RA41	FRT_RA41	EBP_RA41	FCD_RA41	AFR_RA41	
2	BFC_RA42	RPM_RA42	LOADRA42	OGT_RA42	CINTRA42	IAT_RA42	FRT_RA42	EBP_RA42	FCD_RA42	AFR_RA42	
3	BFC_RA43	RPM_RA43	LOADRA43	OGT_RA43	CINTRA43	IAT_RA43	FRT_RA43	EBP_RA43	FCD_RA43	AFR_RA43	
4	BFC_RA44	RPM_RA44	LOADRA44	OGT_RA44	CINTRA44	IAT_RA44	FRT_RA44	EBP_RA44	FCD_RA44	AFR_RA44	
5	BFC_RA45	RPM_RA45	LOADRA45	OGT_RA45	CINTRA45	IAT_RA45	FRT_RA45	EBP_RA45	FCD_RA45	AFR_RA45	
6	BFC_RA46	RPM_RA46	LOADRA46	OGT_RA46	CINTRA46	IAT_RA46	FRT_RA46	EBP_RA46	FCD_RA46	AFR_RA46	
AVG.	BFCARA4A	RPM_RA4A	LOADRA4A	OGT_RA4A	CINTRA4A	IAT_RA4A	FRT_RA4A	EBP_RA4A	FCD_RA4A	AFR_RA4A	FCDRA4A
SD	BFCRA4A										
C.V.	BFCRA4A										

^A Difference between the maximum stage average reading of the entire test and the individual stage average readings.

Sequence VIB
Form 17
Critical Parameter Summary – Stage 5

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUN	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

BC Before Test Oil

Step SPEC	BSFC kg/kW-h	Speed r/min	Torque N-m	Oil Gallery Temp. °C	Coolant In Temp, °C	Intake Air Temp, °C	Fuel Rail Temp, °C	EBP kPa 104 ± .17	Fuel Flow kg/h Record	AFR 14.00- 15.00	Delta ^A AFR ≤ .50
1	BFC_RB51	RPM_RB51	LOADRB51	OGRB51	CINTRB51	IAT_RB51	FRT_RB51	EBP_RB51	FCR_RB51	AFR_RB51	
2	BFC_RB52	RPM_RB52	LOADRB52	OGRB52	CINTRB52	IAT_RB52	FRT_RB52	EBP_RB52	FCR_RB52	AFR_RB52	
3	BFC_RB53	RPM_RB53	LOADRB53	OGRB53	CINTRB53	IAT_RB53	FRT_RB53	EBP_RB53	FCR_RB53	AFR_RB53	
4	BFC_RB54	RPM_RB54	LOADRB54	OGRB54	CINTRB54	IAT_RB54	FRT_RB54	EBP_RB54	FCR_RB54	AFR_RB54	
5	BFC_RB55	RPM_RB55	LOADRB55	OGRB55	CINTRB55	IAT_RB55	FRT_RB55	EBP_RB55	FCR_RB55	AFR_RB55	
6	BFC_RB56	RPM_RB56	LOADRB56	OGRB56	CINTRB56	IAT_RB56	FRT_RB56	EBP_RB56	FCR_RB56	AFR_RB56	
AVG.	BFCARB5A	RPM_RB5A	LOADRB5A	OGRB5A	CINTRB5A	IAT_RB5A	FRT_RB5A	EBP_RB5A	FCR_RB5A	AFR_RB5A	AFRDRB5A
SD	BFCSRB5A										
C.V.	BFCRB5A										

Test Oil Phase I

Step SPEC	BSFC kg/Kw-h	Speed r/min	Torque N-m	Oil Gallery Temp. °C	Coolant In Temp, °C	Intake Air Temp, °C	Fuel Rail Temp, °C	EBP kPa 104 ± .17	Fuel Flow kg/h Record	AFR 14.00- 15.00	Delta ^A AFR ≤ .50
1	BFC_RC51	RPM_RC51	LOADRC51	OGR_RC51	CINTRC51	IAT_RC51	FRT_RC51	EBP_RC51	FCR_RC51	AFR_RC51	
2	BFC_RC52	RPM_RC52	LOADRC52	OGR_RC52	CINTRC52	IAT_RC52	FRT_RC52	EBP_RC52	FCR_RC52	AFR_RC52	
3	BFC_RC53	RPM_RC53	LOADRC53	OGR_RC53	CINTRC53	IAT_RC53	FRT_RC53	EBP_RC53	FCR_RC53	AFR_RC53	
4	BFC_RC54	RPM_RC54	LOADRC54	OGR_RC54	CINTRC54	IAT_RC54	FRT_RC54	EBP_RC54	FCR_RC54	AFR_RC54	
5	BFC_RC55	RPM_RC55	LOADRC55	OGR_RC55	CINTRC55	IAT_RC55	FRT_RC55	EBP_RC55	FCR_RC55	AFR_RC55	
6	BFC_RC56	RPM_RC56	LOADRC56	OGR_RC56	CINTRC56	IAT_RC56	FRT_RC56	EBP_RC56	FCR_RC56	AFR_RC56	
AVG.	BFCARC5A	RPM_RC5A	LOADRC5A	OGR_RC5A	CINTRC5A	IAT_RC5A	FRT_RC5A	EBP_RC5A	FCR_RC5A	AFR_RC5A	AFRDRC5A
SD	BFCSRC5A										
C.V.	BFCRC5A										

^A Difference between the maximum stage average reading of the entire test and the individual stage average readings.

**Sequence VIB
Form 17A
Critical Parameter Summary - Stage 5**

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUN	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

Test Oil Phase II

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 ^A AFR ≤ .50
1	BFC RD51	RPM RD51	LOADRD51	OGRD RD51	CINTRD51	IAT RD51	FRT RD51	EBP RD51	FCR RD51	AFR RD51	
2	BFC RD52	RPM RD52	LOADRD52	OGRD RD52	CINTRD52	IAT RD52	FRT RD52	EBP RD52	FCR RD52	AFR RD52	
3	BFC RD53	RPM RD53	LOADRD53	OGRD RD53	CINTRD53	IAT RD53	FRT RD53	EBP RD53	FCR RD53	AFR RD53	
4	BFC RD54	RPM RD54	LOADRD54	OGRD RD54	CINTRD54	IAT RD54	FRT RD54	EBP RD54	FCR RD54	AFR RD54	
5	BFC RD55	RPM RD55	LOADRD55	OGRD RD55	CINTRD55	IAT RD55	FRT RD55	EBP RD55	FCR RD55	AFR RD55	
6	BFC RD56	RPM RD56	LOADRD56	OGRD RD56	CINTRD56	IAT RD56	FRT RD56	EBP RD56	FCR RD56	AFR RD56	
AVG.	BFCARD5A	RPM RD5A	LOADRD5A	OGRD RD5A	CINTRD5A	IAT RD5A	FRT RD5A	EBP RD5A	FCR RD5A	AFR RD5A	AFRDRD5A
SD	BFCSRD5A										
C.V.	BFC CRD5A										

BC After 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 ^A AFR ≤ .50
1	BFC RA51	RPM RA51	LOADRA51	OGRD RA51	CINTRA51	IAT RA51	FRT RA51	EBP RA51	FCR RA51	AFR RA51	
2	BFC RA52	RPM RA52	LOADRA52	OGRD RA52	CINTRA52	IAT RA52	FRT RA52	EBP RA52	FCR RA52	AFR RA52	
3	BFC RA53	RPM RA53	LOADRA53	OGRD RA53	CINTRA53	IAT RA53	FRT RA53	EBP RA53	FCR RA53	AFR RA53	
4	BFC RA54	RPM RA54	LOADRA54	OGRD RA54	CINTRA54	IAT RA54	FRT RA54	EBP RA54	FCR RA54	AFR RA54	
5	BFC RA55	RPM RA55	LOADRA55	OGRD RA55	CINTRA55	IAT RA55	FRT RA55	EBP RA55	FCR RA55	AFR RA55	
6	BFC RA56	RPM RA56	LOADRA56	OGRD RA56	CINTRA56	IAT RA56	FRT RA56	EBP RA56	FCR RA56	AFR RA56	
AVG.	BFCARA5A	RPM RA5A	LOADRA5A	OGRD RA5A	CINTRA5A	IAT RA5A	FRT RA5A	EBP RA5A	FCR RA5A	AFR RA5A	AFRDRA5A
SD	BFCSRA5A										
C.V.	BFC CRA5A										

^A Difference between the maximum stage average reading of the entire test and the individual stage average readings.

**Sequence VIB
Form 18
Downtime And Other Comments**

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRU	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

Number of Downtime Occurrences			DWNOCR
Test Hours	Date	Downtime	Reasons
DOWNR001	DDATR001	DTIMR001	DREAR001
DOWNR002	DDATR002	DTIMR002	DREAR002
DOWNR003	DDATR003	DTIMR003	DREAR003
DOWNR004	DDATR004	DTIMR004	DREAR004
DOWNR005	DDATR005	DTIMR005	DREAR005
DOWNR006	DDATR006	DTIMR006	DREAR006
DOWNR007	DDATR007	DTIMR007	DREAR007
DOWNR008	DDATR008	DTIMR008	DREAR008
DOWNR009	DDATR009	DTIMR009	DREAR009
DOWNR010	DDATR010	DTIMR010	DREAR010
DOWNR011	DDATR011	DTIMR011	DREAR011
DOWNR012	DDATR012	DTIMR012	DREAR012
DOWNR013	DDATR013	DTIMR013	DREAR013
DOWNR014	DDATR014	DTIMR014	DREAR014
DOWNR015	DDATR015	DTIMR015	DREAR015
Total Downtime		TOTLDOWN	

Other Comments		TOTCOM
Number of Comment Lines		
OCOMR001		
OCOMR002		
OCOMR003		
OCOMR004		
OCOMR005		
OCOMR006		
OCOMR007		
OCOMR008		
OCOMR009		
OCOMR010		
OCOMR011		
OCOMR012		
OCOMR013		
OCOMR014		
OCOMR015		

**Sequence VIB
Form 18A
Downtime And Other Comments**

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUN	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

Number of Downtime Occurrences			DWNOCR
Test Hours	Date	Downtime	Reasons
DOWNR016	DDATR016	DTIMR016	DREAR016
DOWNR017	DDATR017	DTIMR017	DREAR017
DOWNR018	DDATR018	DTIMR018	DREAR018
DOWNR019	DDATR019	DTIMR019	DREAR019
DOWNR020	DDATR020	DTIMR020	DREAR020
DOWNR021	DDATR021	DTIMR021	DREAR021
DOWNR022	DDATR022	DTIMR022	DREAR022
DOWNR023	DDATR023	DTIMR023	DREAR023
DOWNR024	DDATR024	DTIMR024	DREAR024
DOWNR025	DDATR025	DTIMR025	DREAR025
DOWNR026	DDATR026	DTIMR026	DREAR026
DOWNR027	DDATR027	DTIMR027	DREAR027
DOWNR028	DDATR028	DTIMR028	DREAR028
DOWNR029	DDATR029	DTIMR029	DREAR029
DOWNR030	DDATR030	DTIMR030	DREAR030
Total Downtime		TOTLDOWN	

Other Comments		
Number of Comment Lines	TOTCOM	
OCOMR016		
OCOMR017		
OCOMR018		
OCOMR019		
OCOMR020		
OCOMR021		
OCOMR022		
OCOMR023		
OCOMR024		
OCOMR025		
OCOMR026		
OCOMR027		
OCOMR028		
OCOMR029		
OCOMR030		

**Sequence VIB
Form 18B
Downtime And Other Comments**

Lab: LAB	Date Completed: DTCOMP	Time Completed: EOTTIME
Test Number		
Test Stand: STAND	Runs On The Stand: STRUN	Engine No. ENGNO
Runs on Engine: ENRUN		
Oil Code: OILCODE		
Formulation/Stand Code: FORM		

Number of Downtime Occurrences			DWNOCR
Test Hours	Date	Downtime	Reasons
DOWNR031	DDATR031	DTIMR031	DREAR031
DOWNR032	DDATR032	DTIMR032	DREAR032
DOWNR033	DDATR033	DTIMR033	DREAR033
DOWNR034	DDATR034	DTIMR034	DREAR034
DOWNR035	DDATR035	DTIMR035	DREAR035
DOWNR036	DDATR036	DTIMR036	DREAR036
DOWNR037	DDATR037	DTIMR037	DREAR037
DOWNR038	DDATR038	DTIMR038	DREAR038
DOWNR039	DDATR039	DTIMR039	DREAR039
DOWNR040	DDATR040	DTIMR040	DREAR040
DOWNR041	DDATR041	DTIMR041	DREAR041
DOWNR042	DDATR042	DTIMR042	DREAR042
DOWNR043	DDATR043	DTIMR043	DREAR043
DOWNR044	DDATR044	DTIMR044	DREAR044
DOWNR045	DDATR045	DTIMR045	DREAR045
Total Downtime		TOTLDOWN	

Other Comments	
Number of Comment Lines	TOTCOM
OCOMR031	
OCOMR032	
OCOMR033	
OCOMR034	
OCOMR035	
OCOMR036	
OCOMR037	
OCOMR038	
OCOMR039	
OCOMR040	
OCOMR041	
OCOMR042	
OCOMR043	
OCOMR044	
OCOMR045	

**Sequence VIB
Form 19
American Chemistry Council Code of Practice
Test Laboratory Conformance Statement**

Test Laboratory		SUBLAB			
Test Sponsor		TSTSPON1			
Formulation / Stand Code		FORM			
Test Number		TESTNUM			
Start Date	DTSTRT	Start Time	STRTIME	Time Zone	TZONE

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 ESRQME No ORQME *

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 YESFULL No NOFULL *

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 ESNODE* No NONODEC

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 YESDEV* No NODEV
(This currently applies only to specific deviations identified in the ASTM Information Letter System)

Check The Appropriate Conclusion

INCLUDE	Operational review of this test indicates that the results should be included in the Multiple Test Acceptance Criteria calculations.
DONOTINC	*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
ACCCOMM1
ACCCOMM2
ACCCOMM3
ACCCOMM4

SUBSIGIM

Signature

SUBNAME

Typed Name

SUBDATE

Date

SUBTITLE

Title