



**Caterpillar C-13  
Engine Oil Test**

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**Caterpillar C-13  
Engine Oil Test**

**Form 3  
Summary of Test Method**

The CAT C-13 Engine Oil Test is an engine-dynamometer test which evaluates the ability of an engine oil to protect against ring sticking and oil consumption.

The test engine is a CAT C-13 diesel engine with ACERT technology. It is an in-line six cylinder, four stroke, turbocharged engine with electronically controlled fuel injection.

<b>C-13 Test Conditions</b>	
<b>Parameter</b>	<b>Value</b>
Time, h	500
Speed, r/min	1800
Fuel Flow, g/min	1200
Inlet Manifold Temperature, °C	40
Coolant Out Temperature, °C	88
Fuel In Temperature, °C	40
Oil Gallery Temperature, °C	98
Intake Air Temperature, ° C	25
Tailpipe Exhaust Temperature, °C	Record
Intake Air Restriction, kPa Absolute	95
Intake Manifold Pressure, kPa	280
Exhaust Back Pressure, kPa	6
Humidity, g/kg	Record
Coolant System Pressure, kPa	99 - 107
Power, kW	Record
Torque, Nm	Record
Oil Gallery Pressure, kPa	Record

**Caterpillar C-13  
Engine Oil Test**

**Test Results Summary  
Form 4**

<b>Laboratory:</b> CC	<b>EOT Date:</b> YYYYMMDD	<b>EOT Time:</b> HH:MM
<b>Test Number:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Oil Code:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Formulation / Stand Code:</b> CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC		

<b>Start Date:</b> YYYYMMDD	<b>Start Time:</b> HH:MM	<b>Test Length:</b> S1234
<b>Laboratory Oil Code:</b> CCCCCCCCCCCCCCCCCCCCCC	<b>TMC Oil Code<sup>A</sup>:</b> CCCCCC	
<b>Engine Number:</b> CCCCCC	<b>Engine Hours:</b> CCCCC	<b>Engine Serial No.:</b> CCCCCCCC

Oil Consumption, g/hr		
100 – 150	450 – 500	% Inc.
S123.1	S123.1	S123.1

Piston No.	WD	TGC	TLC	TGF	IGF	IGC	AGF	Loss of Ring Side Clearance		
								Top	Int.	Oil
1	S1234.1	S12.12	S12.12	S12	S123	S12.12	S123	AAAAAAA	AAAAAAA	AAAAAAA
2	S1234.1	S12.12	S12.12	S12	S123	S12.12	S123	AAAAAAA	AAAAAAA	AAAAAAA
3	S1234.1	S12.12	S12.12	S12	S123	S12.12	S123	AAAAAAA	AAAAAAA	AAAAAAA
4	S1234.1	S12.12	S12.12	S12	S123	S12.12	S123	AAAAAAA	AAAAAAA	AAAAAAA
5	S1234.1	S12.12	S12.12	S12	S123	S12.12	S123	AAAAAAA	AAAAAAA	AAAAAAA
6	S1234.1	S12.12	S12.12	S12	S123	S12.12	S123	AAAAAAA	AAAAAAA	AAAAAAA
<b>Average</b>	S1234.1	S12.12	S12.12	S12	S123	S12.12	S123	AAAAAAA	AAAAAAA	AAAAAAA

Piston No.		Top	Int.	Oil	Crown	Skirt	Liner
1	Stuck Ring	CCCCCCCC	CCCCCCCC	CCCCCCCC			
	Scuffed	CCC	CCC	CCC	CCC	CCC	CCC
2	Stuck Ring	CCCCCCCC	CCCCCCCC	CCCCCCCC			
	Scuffed	CCC	CCC	CCC	CCC	CCC	CCC
3	Stuck Ring	CCCCCCCC	CCCCCCCC	CCCCCCCC			
	Scuffed	CCC	CCC	CCC	CCC	CCC	CCC
4	Stuck Ring	CCCCCCCC	CCCCCCCC	CCCCCCCC			
	Scuffed	CCC	CCC	CCC	CCC	CCC	CCC
5	Stuck Ring	CCCCCCCC	CCCCCCCC	CCCCCCCC			
	Scuffed	CCC	CCC	CCC	CCC	CCC	CCC
6	Stuck Ring	CCCCCCCC	CCCCCCCC	CCCCCCCC			
	Scuffed	CCC	CCC	CCC	CCC	CCC	CCC

<sup>A</sup> Reference Oil Tests Only

**Caterpillar C-13  
Engine Oil Test  
Operational Summary  
Form 5**

<b>Laboratory:</b> CC	<b>EOT Date:</b> YYYYMMDD	<b>EOT Time:</b> HH:MM
<b>Test Number:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Oil Code:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Formulation / Stand Code:</b> CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC		

<b>Controlled Parameters</b>					
<b>Parameter</b>	<b>Units</b>	<b>Target</b>	<b>Tolerance</b>	<b>Average</b>	<b>Samples</b>
Engine Speed	r/min	1800	± 5	S12345	S1234
Fuel Flow	g/min	1200	± 6	S12.12	S1234
<b>Temperature</b>					
Inlet Air	°C	25	± 2	S1234	S1234
Intake Manifold Air	°C	40	± 2	S1234	S1234
Fuel Inlet	°C	40	± 1	S1234	S1234
Coolant Outlet	°C	88	± 2	S1234	S1234
Oil Gallery	°C	98	± 2	S1234	S1234
<b>Pressure</b>					
Inlet Air	kPa	95	± 3	S12.12	S1234
Exhaust Stack	kPa	6	± 1	S1.1	S1234
Intake Manifold	kPa	280	± 5	S123	S1234
<b>Non-Controlled Parameters</b>					
<b>Parameter</b>	<b>Units</b>	<b>Target</b>	<b>Tolerance</b>	<b>Average</b>	<b>Samples</b>
Engine Torque	Nm	1800	Record	S1234	S1234
Humidity	g/kg	Record	Record	S123.1	S1234

**Caterpillar C-13  
Engine Oil Test  
Rod Bearing Weight Loss  
Form 6**

<b>Laboratory:</b> CC	<b>EOT Date:</b> YYYYMMDD	<b>EOT Time:</b> HH:MM
<b>Test Number:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Oil Code:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Formulation / Stand Code:</b> CC-CCCCCCCC-C-C-CCCC-CC-CC-CCCC		

Cylinder No.	Location	SOT Weight, g	EOT Weight, g	Weight Change, mg
1	Upper	S12.1234	S12.1234	S123.1
2	Upper	S12.1234	S12.1234	S123.1
3	Upper	S12.1234	S12.1234	S123.1
4	Upper	S12.1234	S12.1234	S123.1
5	Upper	S12.1234	S12.1234	S123.1
6	Upper	S12.1234	S12.1234	S123.1
Upper Bearing Average Weight Loss, mg				S123.1
Upper Bearing Minimum Weight Loss, mg				S123.1
Upper Bearing Maximum Weight Loss, mg				S123.1

Cylinder No.	Location	SOT Weight, g	EOT Weight, g	Weight Change, mg
1	Lower	S12.1234	S12.1234	S123.1
2	Lower	S12.1234	S12.1234	S123.1
3	Lower	S12.1234	S12.1234	S123.1
4	Lower	S12.1234	S12.1234	S123.1
5	Lower	S12.1234	S12.1234	S123.1
6	Lower	S12.1234	S12.1234	S123.1
Lower Bearing Average Weight Loss, mg				S123.1
Lower Bearing Minimum Weight Loss, mg				S123.1
Lower Bearing Maximum Weight Loss, mg				S123.1

**Caterpillar C-13  
Engine Oil Test  
Ring Weight Loss  
Form 7**

<b>Laboratory:</b> CC	<b>EOT Date:</b> YYYYMMDD	<b>EOT Time:</b> HH:MM
<b>Test Number:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Oil Code:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Formulation / Stand Code:</b> CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC		

Cylinder No.	Top Ring SOT Weight, g	Top Ring EOT Weight, g	Weight Loss, mg
1	S12.1234	S12.1234	S123.1
2	S12.1234	S12.1234	S123.1
3	S12.1234	S12.1234	S123.1
4	S12.1234	S12.1234	S123.1
5	S12.1234	S12.1234	S123.1
6	S12.1234	S12.1234	S123.1
	Top Ring Average Weight Loss, mg		S123
	Top Ring Weight Loss Std. Dev., mg		S123.1
	Top Ring Min. Weight Loss, mg		S123.1
	Top Ring Max. Weight Loss, mg		S123.1

Cylinder No.	2 <sup>nd</sup> Ring SOT Weight, g	2 <sup>nd</sup> Ring EOT Weight, g	Weight Loss, mg
1	S12.1234	S12.1234	S123.1
2	S12.1234	S12.1234	S123.1
3	S12.1234	S12.1234	S123.1
4	S12.1234	S12.1234	S123.1
5	S12.1234	S12.1234	S123.1
6	S12.1234	S12.1234	S123.1
	2 <sup>nd</sup> Ring Average Weight Loss, mg		S123.1
	2 <sup>nd</sup> Ring Weight Loss Std. Dev., mg		S123.1
	2 <sup>nd</sup> Ring Min. Weight Loss, mg		S123.1
	2 <sup>nd</sup> Ring Max. Weight Loss, mg		S123.1

Cylinder No.	Oil Ring SOT Weight, g	Oil Ring EOT Weight, g	Weight Loss, mg
1	S12.1234	S12.1234	S123.1
2	S12.1234	S12.1234	S123.1
3	S12.1234	S12.1234	S123.1
4	S12.1234	S12.1234	S123.1
5	S12.1234	S12.1234	S123.1
6	S12.1234	S12.1234	S123.1
	Oil Ring Average Weight Loss, mg		S123.1
	Oil Ring Weight Loss Std. Dev., mg		S123.1
	Oil Ring Min. Weight Loss, mg		S123.1
	Oil Ring Max. Weight Loss, mg		S123.1

**Caterpillar C-13**

**Engine Oil Test**

**Ring Side Clearance - Form 8**

<b>Laboratory:</b> CC	<b>EOT Date:</b> YYYYMMDD	<b>EOT Time:</b> HH:MM
<b>Test Number:</b> CCC		
<b>Oil Code:</b> CCC		
<b>Formulation / Stand Code:</b> CC-CCCCCCCCCCC-C-C-CCCCCCC-CC-CC-CCCC		

Piston No. 1		A	B	C	D	Avg.	Max
<b>Top</b>	Pre-Test	AAAAAAA	AAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
	Post-Test	AAAAAAA	AAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
	LSC	AAAAAAA	AAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
<b>Int.</b>	Pre-Test	AAAAAAA					
	Post-Test	AAAAAAA					
	LSC	AAAAAAA					
<b>Oil</b>	Pre-Test	AAAAAAA					
	Post-Test	AAAAAAA					
	LSC	AAAAAAA					

Piston No. 2		A	B	C	D	Avg.	Max
<b>Top</b>	Pre-Test	AAAAAAA	AAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
	Post-Test	AAAAAAA	AAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
	LSC	AAAAAAA	AAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
<b>Int.</b>	Pre-Test	AAAAAAA					
	Post-Test	AAAAAAA					
	LSC	AAAAAAA					
<b>Oil</b>	Pre-Test	AAAAAAA					
	Post-Test	AAAAAAA					
	LSC	AAAAAAA					

Piston No. 3		A	B	C	D	Avg.	Max
<b>Top</b>	Pre-Test	AAAAAAA	AAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
	Post-Test	AAAAAAA	AAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
	LSC	AAAAAAA	AAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
<b>Int.</b>	Pre-Test	AAAAAAA					
	Post-Test	AAAAAAA					
	LSC	AAAAAAA					
<b>Oil</b>	Pre-Test	AAAAAAA					
	Post-Test	AAAAAAA					
	LSC	AAAAAAA					

Piston No. 4		A	B	C	D	Avg.	Max
<b>Top</b>	Pre-Test	AAAAAAA	AAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
	Post-Test	AAAAAAA	AAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
	LSC	AAAAAAA	AAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
<b>Int.</b>	Pre-Test	AAAAAAA					
	Post-Test	AAAAAAA					
	LSC	AAAAAAA					
<b>Oil</b>	Pre-Test	AAAAAAA					
	Post-Test	AAAAAAA					
	LSC	AAAAAAA					

Piston No. 5		A	B	C	D	Avg.	Max
<b>Top</b>	Pre-Test	AAAAAAA	AAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
	Post-Test	AAAAAAA	AAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
	LSC	AAAAAAA	AAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
<b>Int.</b>	Pre-Test	AAAAAAA					
	Post-Test	AAAAAAA					
	LSC	AAAAAAA					
<b>Oil</b>	Pre-Test	AAAAAAA					
	Post-Test	AAAAAAA					
	LSC	AAAAAAA					

Piston No. 6		A	B	C	D	Avg.	Max
<b>Top</b>	Pre-Test	AAAAAAA	AAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
	Post-Test	AAAAAAA	AAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
	LSC	AAAAAAA	AAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
<b>Int.</b>	Pre-Test	AAAAAAA					
	Post-Test	AAAAAAA					
	LSC	AAAAAAA					
<b>Oil</b>	Pre-Test	AAAAAAA					
	Post-Test	AAAAAAA					
	LSC	AAAAAAA					





**Caterpillar C-13  
Engine Oil Test  
Liner Wear Summary  
Form 10**

<b>Laboratory:</b> CC	<b>EOT Date:</b> YYYYMMDD	<b>EOT Time:</b> HH:MM
<b>Test Number:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Oil Code:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Formulation / Stand Code:</b> CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC		

<b>Position</b>	<b>Wear Step (µm)</b>						
	<b>Cylinder Number</b>						
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>Average</b>
3:00 (Thrust)	S123.1	S123.1	S123.1	S123.1	S123.1	S123.1	S123.1
6:00 (Rear)	S123.1	S123.1	S123.1	S123.1	S123.1	S123.1	S123.1
9:00 (Anti-Thrust)	S123.1	S123.1	S123.1	S123.1	S123.1	S123.1	S123.1
12:00 (Front)	S123.1	S123.1	S123.1	S123.1	S123.1	S123.1	S123.1
<b>Average</b>	S123.1	S123.1	S123.1	S123.1	S123.1	S123.1	S123.1

<b>Summary</b>	<b>As Measured</b>
Average, µm	S123.1
Minimum, µm	S123.1
Maximum, µm	S123.1







**Caterpillar C-13  
Engine Oil Test  
Test Fuel Analysis (Last Batch)  
Form 12**

<b>Laboratory:</b> CC	<b>EOT Date:</b> YYYYMMDD	<b>EOT Time:</b> HH:MM
<b>Test Number:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Oil Code:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Formulation / Stand Code:</b> CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC		
<b>Fuel Supplier:</b> CCCCCCCCCCCCCCCCCC		<b>Fuel Batch ID:</b> CCCCCCCCCCCCCC

Measurement	Specs.	Analysis		Test Method
		New	EOT	
<b>Total Sulfur, ppm</b>	<b>7 - 15</b>	S1.12	S1.12	<b>D 5453</b>
<b>Gravity, °API</b>	<b>34 - 37</b>	S1.1	S1.1	<b>D 4052</b>
<b>Hydrocarbon Composition</b>				
<b>Aromatics, % Weight</b>	<b>26 – 31.5</b>	S1.1		<b>D 5186</b>
<b>Olefins, % Volume</b>	<b>Report</b>	S12.1		<b>D 1319</b>
<b>Cetane Index</b>	<b>Report</b>	S1.1		<b>D 976</b>
<b>Cetane No.</b>	<b>43 – 47</b>	S1.1		<b>D 613</b>
<b>Copper Strip Corrosion</b>	<b>1 Maximum</b>	AAAA		<b>D 130</b>
<b>Flash Point, °C</b>	<b>54 Minimum</b>	S123		<b>D 93</b>
<b>Pour Point, °C</b>	<b>-18 Maximum</b>	S123		<b>D 97</b>
<b>Carbon Residue on 10% Residuum, %</b>	<b>0.35 Maximum</b>	S12.12		<b>D 524 (10% Bottoms)</b>
<b>Water &amp; Sediment, % Volume</b>	<b>0.05 Maximum</b>	AAAAAA		<b>D 2709</b>
<b>Viscosity, cSt @ 40°C</b>	<b>2.0 – 2.6</b>	S12.1		<b>D 445</b>
<b>Total Acid Number</b>	<b>0.05 Maximum</b>	S1.1		<b>D 664</b>
<b>Strong Acid Number</b>	<b>0.00 Maximum</b>	S1.1		<b>D 664</b>
<b>Accelerated Stability</b>	<b>1.5 max</b>	S12.1		<b>D 2274</b>
<b>Ash, % Weight</b>	<b>0.005 Maximum</b>	S123.123		<b>D 482</b>
<b>SLBOCLE, g</b>	<b>3100 min<sup>A</sup></b>	S1234567		<b>D 6078<sup>A</sup></b>
<b>90% Distillation, °C</b>	<b>282 – 338</b>	S1234		<b>D 86</b>

<sup>A</sup> May be altered to be consistent with CARB or ASTM diesel fuel specifications.

**Caterpillar C-13  
Engine Oil Test  
Build-Up and Hardware Information  
Form 13**

<b>Laboratory:</b> CC	<b>EOT Date:</b> YYYYMMDD	<b>EOT Time:</b> HH:MM
<b>Test Number:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Oil Code:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Formulation / Stand Code:</b> CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC		

<b>Hardware</b>	
<b>Part</b>	<b>Part Number</b>
Intake Valve	CCCCCCCCCCCCCCCCCCCC
Exhaust Valve	CCCCCCCCCCCCCCCCCCCC
Cylinder Head	CCCCCCCCCCCCCCCCCCCC
Head Gasket	CCCCCCCCCCCCCCCCCCCC
Pistons	CCCCCCCCCCCCCCCCCCCC
Injectors	CCCCCCCCCCCCCCCCCCCC
Rod Bearings	CCCCCCCCCCCCCCCCCCCC
Liners	CCCCCCCCCCCCCCCCCCCC
Top Ring	CCCCCCCCCCCCCCCCCCCC
2 <sup>nd</sup> Ring	CCCCCCCCCCCCCCCCCCCC
Oil Ring	CCCCCCCCCCCCCCCCCCCC









**Caterpillar C-13  
Engine Oil Test  
Rating Summary: Piston No. 3  
Form 17**

<b>Laboratory:</b> CC	<b>EOT Date:</b> YYYYMMDD	<b>EOT Time:</b> HH:MM	
<b>Test Number:</b> CCC			
<b>Oil Code:</b> CCC			
<b>Formulation / Stand Code:</b> CC-C-CCCCCCCCCCCC-C-C-CCCCCC-CC-CC-CCCC			
<b>Date Rated:</b> YYYYMMDD		<b>Rater Initials:</b> CCC	
		<b>Verified By:</b> CCC	

Total Piston Ratings Summary																						
	Grooves				Lands				Deposit Factor	Groove				Lands		Oil Cooling Gallery		Under Crown				
	No. 1 A, %	DEM.	No. 2 A, %	DEM.	No. 1 A, %	DEM.	No. 2 A, %	DEM.		No. 3 A, %	DEM.	No. 3 A, %	DEM.	No. 4 A, %	DEM.	No. 3 A, %	DEM.	No. 3 A, %	DEM.	No. 4 A, %	DEM.	
C																						
A	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	
R	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	
B	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	
O																						
N	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	
8 - 9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	
7 - 7.9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	
6 - 6.9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	
5 - 5.9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	
4 - 4.9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	
3 - 3.9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	
2 - 2.9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	
1 - 1.9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	
>0 - 0.9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	
H Clean	S123	0	S123	0	S123	0	S123	0	S123	0	S123	0	S123	0	S123	0	S123	0	S123	0	S123	0
Total	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	
Rating	S123.12				S123.12					S123.12				S123.12		S123.12		S123.12		S123.12		
Location Factor	2				3					1				3		60		1		S123.12		
Ind. Rating	S123.12				S123.12					S123.12				S123.12		S123.12		S123.12		S123.12		
<b>WDP</b>														<b>Unweighted Deposits</b>		<b>Top Land Flaked Carbon %</b>						
S1234.1										S1234.1				S1234.1		S1234.1		S1234.1		S123456		
<b>TGF</b>														<b>Acc. Groove Fill %</b>								
S12										S123				S123		S123		S123		S123		



**Caterpillar C-13  
Engine Oil Test  
Rating Summary: Piston No. 5  
Form 19**

<b>Laboratory:</b> CC	<b>EOT Date:</b> YYYYMMDD	<b>EOT Time:</b> HH:MM
<b>Test Number:</b> CCC		
<b>Oil Code:</b> CCC		
<b>Formulation / Stand Code:</b> CC-C-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC		
<b>Date Rated:</b> YYYYMMDD	<b>Rater Initials:</b> CCC	<b>Verified By:</b> CCC

Total Piston Ratings Summary																		
	Deposit Factor	Grooves			Lands			Deposit Factor	Groove			Lands			Oil Cooling Gallery		Under Crown	
		No. 1 A, <sub>3</sub> % DEM.	No. 2 A, <sub>3</sub> % DEM.	No. 1 A, <sub>3</sub> % DEM.	No. 2 A, <sub>3</sub> % DEM.	No. 1 A, <sub>3</sub> % DEM.	No. 2 A, <sub>3</sub> % DEM.		No. 1 A, <sub>3</sub> % DEM.	No. 2 A, <sub>3</sub> % DEM.	No. 3 A, <sub>3</sub> % DEM.	No. 4 A, <sub>3</sub> % DEM.	No. 3 A, <sub>3</sub> % DEM.	No. 4 A, <sub>3</sub> % DEM.	Cooling Gallery	A, <sub>3</sub> %	DEM.	
C																		
A	HC - 1.0	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12			
R	MC - 0.5	S123	S123.12															
B	LC - .25	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12			S123.12
O																		
N	Total	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12			S123.12
	8 - 9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12					
	7 - 7.9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12					S123.12
	6 - 6.9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12					
V	5 - 5.9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12					
A	4 - 4.9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12					S123.12
R	3 - 3.9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12					S123.12
N	2 - 2.9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12					
I	1 - 1.9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12					S123.12
S	>0 - 0.9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12					S123.12
H	Clean	S123	0	S123	0	S123	0	S123	0	S123	0	S123	0	S123	0			0
	Total	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12					S123.12
Rating		S123.12	S123.12	S123.12	S123.12	S123.12	S123.12	S123.12	S123.12	S123.12	S123.12	S123.12	S123.12					S123.12
Location Factor		2	3	1	3	1	3	1	3	1	3	1	3					1
Ind. Rating		S123.12	S123.12	S123.12	S123.12	S123.12	S123.12	S123.12	S123.12	S123.12	S123.12	S123.12	S123.12					S123.12
<b>WDP</b>		<b>TGC</b>			<b>TLC</b>			<b>Unweighted Deposits</b>			<b>Top Land Flaked Carbon %</b>							
S1234.1		S12.12	S12.12	S123.12	S123.12	S123.12	S123.12	S123.12	S123.12	S1234.1	S1234.1	S1234.1	S1234.56					
<b>TGF</b>		<b>IGF %</b>			<b>TLHC %</b>			<b>Acc. Groove Fill %</b>										
S12		S123	S123	S12	S12	S12	S12	S12	S12	S123	S123	S123	S123					

**Caterpillar C-13  
Engine Oil Test  
Rating Summary: Piston No. 6  
Form 20**

<b>Laboratory:</b> CC	<b>EOT Date:</b> YYYYMMDD	<b>EOT Time:</b> HH:MM
<b>Test Number:</b> CCC		
<b>Oil Code:</b> CCC		
<b>Formulation / Stand Code:</b> CC-C-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC		
<b>Date Rated:</b> YYYYMMDD	<b>Rater Initials:</b> CCC	<b>Verified By:</b> CCC

Total Piston Ratings Summary														
	Grooves						Deposit Factor	Lands						
	No. 1	No. 2	No. 1	No. 2	No. 1	No. 2		No. 1	No. 2	No. 1	No. 2	No. 1	No. 2	
	A,%	DEM.	A,%	DEM.	A,%	DEM.	A,%	DEM.	A,%	DEM.	A,%	DEM.	A,%	DEM.
C	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12
A	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12
R	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12
B	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12
O	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12
N	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12
Total														
8 - 9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12
7 - 7.9	S123	S123.12	S123	S123.12	S123	S123.12	7.5	S123	S123.12	S123	S123.12	S123	S123.12	S123
6 - 6.9	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12	S123	S123.12
5 - 5.9	S123	S123.12	S123	S123.12	S123	S123.12	4.5	S123	S123.12	S123	S123.12	S123	S123.12	S123
4 - 4.9	S123	S123.12	S123	S123.12	S123	S123.12	1.5	S123	S123.12	S123	S123.12	S123	S123.12	S123
3 - 3.9	S123	S123.12	S123	S123.12	S123	S123.12		S123	S123.12	S123	S123.12	S123	S123.12	S123
2 - 2.9	S123	S123.12	S123	S123.12	S123	S123.12		S123	S123.12	S123	S123.12	S123	S123.12	S123
1 - 1.9	S123	S123.12	S123	S123.12	S123	S123.12		S123	S123.12	S123	S123.12	S123	S123.12	S123
>0 - 0.9	S123	S123.12	S123	S123.12	S123	S123.12		S123	S123.12	S123	S123.12	S123	S123.12	S123
Clean	S123	0	S123	0	S123	0		S123	0	S123	0	S123	0	S123
Total														
	S123	S123.12	S123	S123.12	S123	S123.12		S123	S123.12	S123	S123.12	S123	S123.12	S123
Rating	S123.12		S123.12		S123.12			S123.12		S123.12		S123.12		S123.12
Location Factor	2		3		1			3		1		60		1
Ind. Rating	S123.12		S123.12		S123.12			S123.12		S123.12		S123.12		S123.12
<b>WDP</b>	<b>Unweighted Deposits</b>						<b>Top Land Flaked Carbon %</b>							
S1234.1	S1234.1						S123456							
<b>TGF</b>	<b>IGF %</b>						<b>TLHC %</b>						<b>Acc. Groove Fill %</b>	
S12	S123						S12						S123	

**Caterpillar C-13  
Engine Oil Test  
Supplemental Rating Summary: Piston No. 1  
Form 21**

<b>Laboratory:</b> CC	<b>EOT Date:</b> YYYYMMDD	<b>EOT Time:</b> HH:MM
<b>Test Number:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Oil Code:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Formulation / Stand Code:</b> CC-CCCCCCCC-C-C-CCCC-CC-CC-CCCC		

Deposit		Carbon				Varnish									
		HC	MC	LC	9.0-8	7.9-7	6.9-6	5.9-5	4.9-4	3.9-3	2.9-2	1.9-1	0.9-0	Clean	
Groove Top And Bottom	1	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
	2	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
	3	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
Top Bottom And Back Of Rings	1	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		BK	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
	2	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		BK	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
	3	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		BK	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
Top Ring Stuck			CCCCCCC	S123	%										
Top Ring Scuffed			CCC	S123	%										
Second Ring Stuck			CCCCCCC	S123	%										
Second Ring Scuffed			CCC	S123	%										
Oil Ring Stuck			CCCCCCC	S123	%										
Oil Ring Scuffed			CCC	S123	%										
Crown Scuffed			CCC	S123	%										
Skirt Scuffed			CCC	S123	%										
Liner Scuffed			CCC	S123	%										

**Caterpillar C-13  
Engine Oil Test  
Supplemental Rating Summary: Piston No. 2  
Form 22**

<b>Laboratory:</b> CC	<b>EOT Date:</b> YYYYMMDD	<b>EOT Time:</b> HH:MM
<b>Test Number:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Oil Code:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Formulation / Stand Code:</b> CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC		

Deposit		Carbon				Varnish									
		HC	MC	LC	9.0-8	7.9-7	6.9-6	5.9-5	4.9-4	3.9-3	2.9-2	1.9-1	0.9-0	Clean	
Groove Top And Bottom	1	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
	2	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
	3	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
Top Bottom And Back Of Rings	1	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		BK	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
	2	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		BK	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
	3	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		BK	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
Top Ring Stuck			CCCCCCC	S123	%										
Top Ring Scuffed			CCC	S123	%										
Second Ring Stuck			CCCCCCC	S123	%										
Second Ring Scuffed			CCC	S123	%										
Oil Ring Stuck			CCCCCCC	S123	%										
Oil Ring Scuffed			CCC	S123	%										
Crown Scuffed			CCC	S123	%										
Skirt Scuffed			CCC	S123	%										
Liner Scuffed			CCC	S123	%										



**Caterpillar C-13  
Engine Oil Test  
Supplemental Rating Summary: Piston No. 3  
Form 23**

<b>Laboratory:</b> CC	<b>EOT Date:</b> YYYYMMDD	<b>EOT Time:</b> HH:MM
<b>Test Number:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Oil Code:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Formulation / Stand Code:</b> CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC		

Carbon						Varnish									
Deposit		HC	MC	LC	9.0-8	7.9-7	6.9-6	5.9-5	4.9-4	3.9-3	2.9-2	1.9-1	0.9-0	Clean	
Groove Top And Bottom	1	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
	2	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
	3	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
Top Bottom And Back Of Rings	1	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		BK	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
	2	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		BK	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
	3	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		BK	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
Top Ring Stuck			CCCCCCC	S123	%										
Top Ring Scuffed			CCC	S123	%										
Second Ring Stuck			CCCCCCC	S123	%										
Second Ring Scuffed			CCC	S123	%										
Oil Ring Stuck			CCCCCCC	S123	%										
Oil Ring Scuffed			CCC	S123	%										
Crown Scuffed			CCC	S123	%										
Skirt Scuffed			CCC	S123	%										
Liner Scuffed			CCC	S123	%										

**Caterpillar C-13  
Engine Oil Test  
Supplemental Rating Summary: Piston No. 4  
Form 24**

<b>Laboratory:</b> CC	<b>EOT Date:</b> YYYYMMDD	<b>EOT Time:</b> HH:MM
<b>Test Number:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Oil Code:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Formulation / Stand Code:</b> CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC		

Deposit		Carbon				Varnish									
		HC	MC	LC	9.0-8	7.9-7	6.9-6	5.9-5	4.9-4	3.9-3	2.9-2	1.9-1	0.9-0	Clean	
Groove Top And Bottom	1	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
	2	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
	3	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
Top Bottom And Back Of Rings	1	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		BK	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
	2	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		BK	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
	3	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		BK	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
Top Ring Stuck		CCCCCCC			S123	%									
Top Ring Scuffed		CCC			S123	%									
Second Ring Stuck		CCCCCCC			S123	%									
Second Ring Scuffed		CCC			S123	%									
Oil Ring Stuck		CCCCCCC			S123	%									
Oil Ring Scuffed		CCC			S123	%									
Crown Scuffed		CCC			S123	%									
Skirt Scuffed		CCC			S123	%									
Liner Scuffed		CCC			S123	%									

**Caterpillar C-13  
Engine Oil Test  
Supplemental Rating Summary: Piston No. 5  
Form 25**

<b>Laboratory:</b> CC	<b>EOT Date:</b> YYYYMMDD	<b>EOT Time:</b> HH:MM
<b>Test Number:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Oil Code:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Formulation / Stand Code:</b> CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC		

Deposit		Carbon				Varnish									
		HC	MC	LC	9.0-8	7.9-7	6.9-6	5.9-5	4.9-4	3.9-3	2.9-2	1.9-1	0.9-0	Clean	
Groove Top And Bottom	1	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
	2	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
	3	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
Top Bottom And Back Of Rings	1	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		BK	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
	2	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		BK	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
	3	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		BK	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
Top Ring Stuck			CCCCCCC	S123	%										
Top Ring Scuffed			CCC	S123	%										
Second Ring Stuck			CCCCCCC	S123	%										
Second Ring Scuffed			CCC	S123	%										
Oil Ring Stuck			CCCCCCC	S123	%										
Oil Ring Scuffed			CCC	S123	%										
Crown Scuffed			CCC	S123	%										
Skirt Scuffed			CCC	S123	%										
Liner Scuffed			CCC	S123	%										

**Caterpillar C-13  
Engine Oil Test  
Supplemental Rating Summary: Piston No. 6  
Form 26**

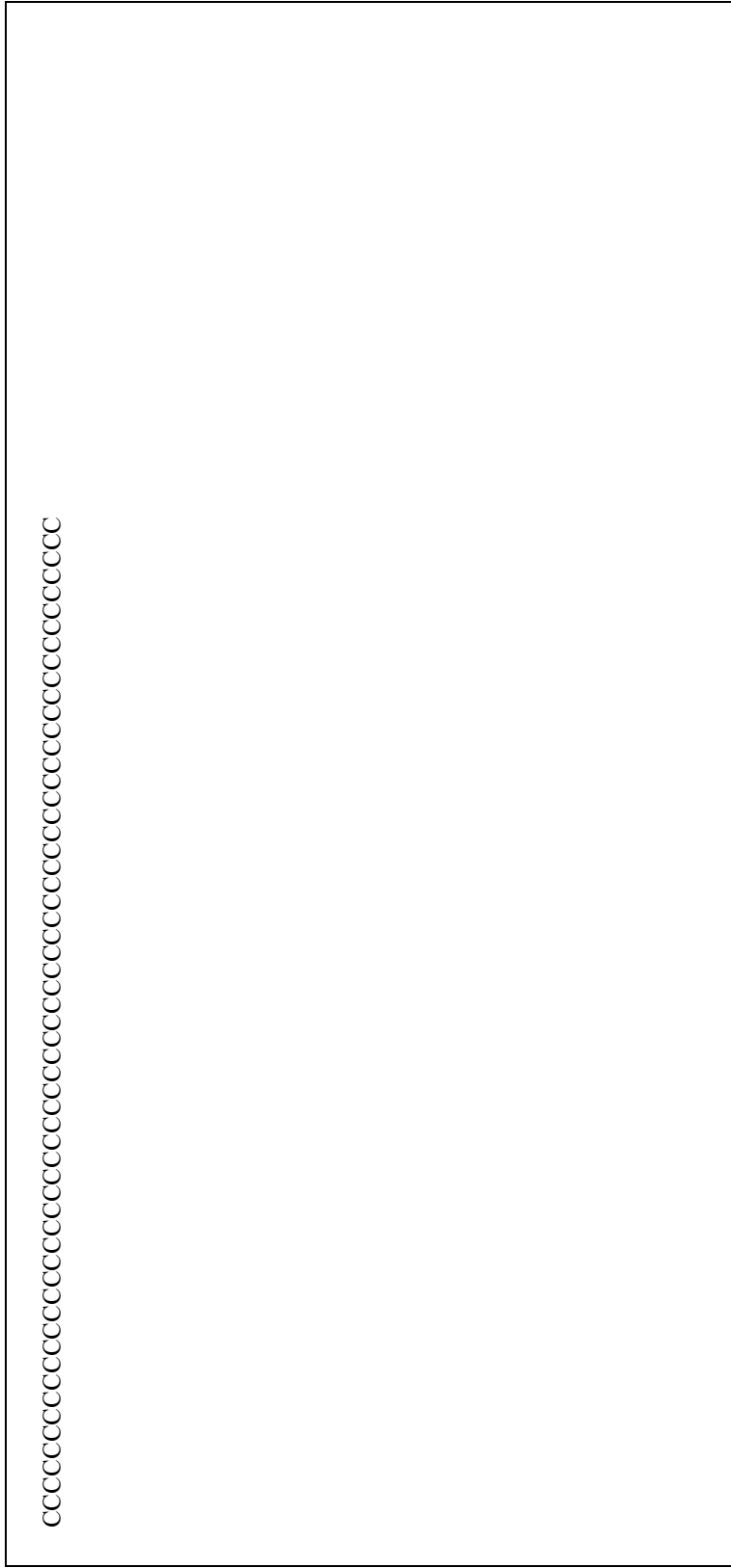
<b>Laboratory:</b> CC	<b>EOT Date:</b> YYYYMMDD	<b>EOT Time:</b> HH:MM
<b>Test Number:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Oil Code:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Formulation / Stand Code:</b> CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC		

Deposit		Carbon				Varnish									
		HC	MC	LC	9.0-8	7.9-7	6.9-6	5.9-5	4.9-4	3.9-3	2.9-2	1.9-1	0.9-0	Clean	
Groove Top And Bottom	1	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
	2	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
	3	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123
Top Bottom And Back Of Rings	1	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123		
		BK	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123		
	2	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		BK	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
	3	T	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		B	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
		BK	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	S123	
Top Ring Stuck			CCCCCCC	S123	%										
Top Ring Scuffed			CCC	S123	%										
Second Ring Stuck			CCCCCCC	S123	%										
Second Ring Scuffed			CCC	S123	%										
Oil Ring Stuck			CCCCCCC	S123	%										
Oil Ring Scuffed			CCC	S123	%										
Crown Scuffed			CCC	S123	%										
Skirt Scuffed			CCC	S123	%										
Liner Scuffed			CCC	S123	%										

**Caterpillar C-13  
Engine Oil Test  
Oil Consumption Plot  
Form 27**

<b>Laboratory:</b> CC	<b>EOT Date:</b> YYYYMMDD	<b>EOT Time:</b> HH:MM
<b>Test Number:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Oil Code:</b> CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
<b>Formulation / Stand Code:</b> CC-CCCCCCCCCC-C-C-CCCCCC-CC-CC-CCCC		

Test Hours	50	100	150	200	250	300	350	400	450	500
<b>Oil Consumption, g/h</b>	S123.1	S123.1	S123.1	S123.1	S123.1	S123.1	S123.1	S123.1	S123.1	S123.1
<b>R<sup>2</sup></b>	S1.12	S1.12	S1.12	S1.12	S1.12	S1.12	S1.12	S1.12	S1.12	S1.12



**100 – 150 h  
Oil  
Consumption:**  
S123.1

**450 – 500 h  
Oil  
Consumption:**  
S123.1

**% Increase:**  
S123.1

Test Hours