



# USED ON-HIGHWAY VEHICLE ENGINES INSPECTION CERTIFICATION WORKSHEET FOR ENGINES LOCATED WORLDWIDE (excludes Australia and New Zealand)

## Inspection Certification Worksheet - Program Effective Date: July 1, 2013

**INSPECTING DEALER INFORMATION** Dealer Name: \_\_\_\_\_ Inspection Date: \_\_\_\_\_  
4 Digit Cat ® Dealer Code: \_\_\_\_\_ Phone: \_\_\_\_\_ Service Tech: \_\_\_\_\_

**INSPECTED ENGINE INFORMATION** Engine S/N: \_\_\_\_\_ Engine Sales Model: \_\_\_\_\_ HP: \_\_\_\_\_  
ECM Miles/Kms \_\_\_\_\_ Odometer Miles/Kms: \_\_\_\_\_ Total Fuel (Gallons/Liters): \_\_\_\_\_  
Vehicle Make / Model: \_\_\_\_\_ VIN #: \_\_\_\_\_ Application: \_\_\_\_\_

ITEM	DOES ITEM PASS? (BEFORE CORRECTIVE ACTION)	CORRECTIVE ACTION / COMMENTS	DOES ITEM PASS? (AFTER CORRECTIVE ACTION)
<b>PRE-START</b>			
1. Applicable PIP / PSP's Performed?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
2. Download ECM and record active faults and lifetime totals.	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
3. Coolant Level Check - Acceptable?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
4. Level 1 Coolant Analysis			
Glycol Concentration - Within Acceptable Limits?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
Conditioners (SCA, Extender) - Within Acceptable Limits?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
Coolant pH - Within Acceptable Limits?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
Conductivity - Within Acceptable Limits?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
Visual Clarity / Color Check - Acceptable?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
Odor Check - Acceptable?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
5. Fuel System Seal Tamper Check (mechanical engines) - Intact?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
<b>INITIAL OBSERVATIONS</b>			
6. FTS / FLS Settings At Factory Specification?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
7. Check Engine Light On or Active Faults Indicated?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
8. Exhaust Manifold Cracks / Leaks Detected?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
9. Missing / Broken Exhaust Manifold Bolts?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
10. Electronic Timing Advance (3406 only) - Updated?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
<b>WARM ENGINE OBSERVATION</b>			
11. Foam / Corrosion in Oil Fill Tube?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
12. Odor Indicative of Burnt Oil?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
13. Excessive Noise Indications?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
14. Excessive Smoke Indications?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
15. Bottle / Pressure Test Results - Within Acceptable Limits?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
<b>OIL LEAKS</b>			
16a. Head to Block Joint	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
16b. Front / Rear Crank Seals	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
16c. Front Cover / Flywheel Housings	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
16d. Major Castings (head / block / oil pan)	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
16e. Oil Cooler	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
16f. Turbocharger	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
16g. Engine Oil Rail (EOR) Valve	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
<b>COOLANT LEAKS</b>			
17a. Head Gasket	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
17b. Water Pump	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
17c. Thermostat Housing	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
17d. Hoses / Fittings / Plugs / Overflow Tube	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
17e. Major Castings (head / block / water manifold / oil cooler)	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
17f. Coolant Diverter valve or Assembly	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
<b>FUEL LEAKS</b>			
18a. Fuel Transfer Pump	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
18b. Fuel Lines	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
18c. Caterpillar Supply & Return Lines	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
18d. Priming Pump	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
18e. Filter Base	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
<b>POST ENGINE-RUN</b>			
19. Perform S.O.S. Oil Sample Analysis - Results Acceptable?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
20. Perform Used Oil Filter Inspection - Results Acceptable?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes
21. Perform Test After to Validate Inspection?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____	<input type="checkbox"/> Yes

ADDITIONAL COMPONENTS	INSPECTED	REPLACED	EXCEPTION
22a. Pre-Cooler (turbocharger)	<input type="checkbox"/> Yes <input type="checkbox"/> No	○	○
22b. Pre-Cooler Mounting Bracket (turbocharger)	<input type="checkbox"/> Yes <input type="checkbox"/> No	○	○
22c. Variable valve Actuators (VVA) Mounting Studs ( <i>must be replaced if NOT of the latest design</i> ).	<input type="checkbox"/> Yes	○	

P/M LEVEL 1 SERVICE NOTES	OPTIONAL COMPONENTS	Replaced At Inspection?
23a. Full Level 1 Service Performed? <input type="checkbox"/> Yes <input type="checkbox"/> No	24a. Injectors (full set)	<input type="checkbox"/> Yes <input type="checkbox"/> No
23b. Engine Oil Replaced with Cat-approved Oil? <input type="checkbox"/> Yes <input type="checkbox"/> No	24b. Turbocharger (both if equipped with more than one)	<input type="checkbox"/> Yes <input type="checkbox"/> No
23c. Oil and Fuel Filters Replaced? <input type="checkbox"/> Yes <input type="checkbox"/> No	24c. Water pump	<input type="checkbox"/> Yes <input type="checkbox"/> No
23d. Fuel Separator Replaced? <input type="checkbox"/> Yes <input type="checkbox"/> No	24d. Variable valve Actuators (VVA) Assembly	<input type="checkbox"/> Yes <input type="checkbox"/> No

I hereby certify that the appropriate Engine Certification procedure as specified on pages 1 and 2 have been completed and the engine is eligible for coverage. Only genuine Cat new or remanufactured components were utilized on the repairs listed above.  
Dealer Service Manager Signature: \_\_\_\_\_ Date: \_\_\_\_\_

The dealer has explained pages 1 and 2 of the Inspection Certification Worksheet to me. All problems, as identified by this inspection, have either been corrected or, if not covered, have been explained to me. The dealer has given me a copy of pages 1 and 2 of the Inspection Certification Worksheet.  
Customer Signature: \_\_\_\_\_ Date: \_\_\_\_\_

# Dealer Inspection / Certification Instructions

(If the Engine fails test or Inspection on Page 1, correct problem(s) and repeat test until successfully passed.)

ITEM	ACTION REQUIRED
Check SIMS & Perform Applicable for PIP / PSP'S	All outstanding PIP / PSP'S must be performed.
Coolant Level	Check coolant level.
Perform Level I Coolant Analysis (SOS) • Glycol concentration for freeze protection and boil protection • Ability to protect from erosion and corrosion  • pH • Conductivity  • Visual Analysis  • Odor Analysis	All coolant items must be within Level I Coolant Analysis (SOS) limit. • Freeze protection 30 - 60 degrees below zero. Boil protection 223-226 degrees F. Adjust concentration of coolant if not within these limits. • Heavy Duty Engine Coolant - SCA (Supplemental Coolant Additive) should be 3 - 6% (1200 - 2400 ppm). Adjust concentration if SCA below 3% (1200 ppm). ELC (Extended Life Coolant) Check nitrite concentration, ideal 550 ppm, if below 400 ppm, add extender. • Check coolant pH. Acceptable Heavy Duty Engine Coolant range is 8.5 - 10.5, for ELC 7.5 - 9.5. • Look for contamination from dissolved salts. Value for conductivity is <6000 us/cm. Flush system and replace with new coolant. • Check clarity and any unusual color. Determine source of problem, repair, flush system and replace with new coolant. • Check for any unusual odor (fuel, ammonia, burnt, etc). If odor present, determine source of problem, repair, flush system and replace with new coolant.  <p style="text-align: center;"><b>Important - Attach copy of coolant analysis to inspection form.</b></p>
Check for Fuel System Settings and Rack Settings Tampering	<b>Mechanical Engines Only</b> Are fuel system seals / wire intact? (Governor housing, AFRC, Governor Adjusting Screw Cover)
Use Service Tool to Check FTS / FLS settings	FTS / FLS settings must compare to specification on the engine unless the change was authorized and documented via the Service information System (SIMS). Engines must meet factory approved settings in order to qualify for coverage.
<b>Active Faults &amp; Lifetime Totals Download</b>	Monitor / check engine light in cab or check for active faults with the applicable Caterpillar service tool. Download lifetime totals from the ECM ( <b>copy must be attached to inspection report before engine qualifies for coverage</b> ).
Exhaust Manifold Cracks / or Leaks	Replace cracked component or gaskets as needed .
Missing / Broken Exhaust Manifold Bolts	Replace as needed.
Update Electronic Timing Advance (3406 Only)	Check if latest components and improvements are included (use Truck Engine News January, 1995 to determine what upgrades apply to specific serial numbers). All upgrades must be made.
Oil Condition	Check for accumulation of foam and corrosion in fill tube. Indicates coolant in oil.
Oil Odor	Check for smell of burnt oil. Indicates bearing failure.
Excessive Noises	Check for knocking noise from within cylinder block, excessive turbo whine and excessive front gear train noise.
Excessive Smoke	Check for excessive smoke from breather lube. Check for excessive smoke from exhaust on snap back acceleration test.
Bottle Test	Perform appropriate bottle test or pressure test. Reference procedures SEHS9564-3406, SEHS9565-3306 and SEHS9540-3176. Volume / minute must be less than the following:  3176 & 3306 = 500 Milliliter-Minute. 3406 = 750 Milliliter - Minute. If greater than allowance then correct problem.
Check for Oil Leaks	Following oil leaks must be corrected or engine <b>DOES NOT QUALIFY</b> : A. Head to Block Joint      C. Front Cover and Flywheel Housing      F. Turbocharger B. Front / Rear Crank Seals      D. Major Castings (head, block, oil pan)      G. Engine Oil Rail (EOR) Valve E. Oil Cooler
Check for Coolant Leaks	Following coolant leaks must be corrected or engine <b>DOES NOT QUALIFY</b> : A. Head Gasket B. Water Pump C. Thermostat Housing D. Hoses / Fittings / Plugs / Overflow Tube E. Major Castings (head / block / water manifold / oil cooler) F. Coolant Diverter Valve Assembly
Check for Fuel Leaks	A general inspection should take place for fuel leaks at the following locations: A. Fuel Transfer Pump      C. Caterpillar Supply and Return Lines      E. Filter Base B. Fuel Lines      D. Priming Pump
Perform Oil Sample (S.O.S.). Oil Sample Must Be Analyzed Before Enrolling the Engine for Coverage	Perform SOS. If sodium > 300 PPM, determine coolant leak, correct problem. If fuel dilution > 3-4%, fix fuel leak. If abnormal wear metal readings are present determine the source of metal and correct.  <p style="text-align: center;"><b>Important - Attach copy of SOS report to inspection form.</b></p>
Cut Open Oil Filter and Inspect for Debris	Cut open filter, check for metal. If significant, determine source of metal and correct; if slight, put on second oil filter and run. If no metal present - OK.
Complete P / M Level 1 Service	Replace oil filter, fuel filters and fuel separator filters. Replace engine oil with Cat approved oil.
Injectors, Turbocharger(s), Water Pump, Variable Valve Actuator	Indicate whether these components are replaced at time of Inspection.
Variable Valve Actuator Mounting Studs	Variable Valve Actuator Mounting Studs must be replaced if not of the latest design
Pre-cooler Mounting Bracket (turbocharger)	Component must be of the latest design in order for the Pre-cooler to be covered. Dealers must confirm the latest design or replace at the time of the inspection to receive coverage under the program.

Dealer Service Manager Signature: \_\_\_\_\_ Date: \_\_\_\_\_ Customer Signature \_\_\_\_\_ Date: \_\_\_\_\_