



THE MARK OF ENVIRONMENTAL RESPONSIBILITY

# **Green Seal™ Best Practices Guide for Fleet Vehicle Maintenance Operations**

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## **GREEN SEAL™**

Green Seal is a non-profit organization whose mission is to use science-based programs to empower consumers, purchasers, and companies to create a more sustainable world. Green Seal sets leadership standards that aim to reduce, to the extent technologically and economically feasible, the environmental, health, and social impacts throughout the life-cycle of products, services, and companies. The standards may be used for conformity assessment, purchaser specifications, and public education.

Green Seal offers certification of products, services, and companies in conformance with its standards. For additional information on Green Seal or any of its programs, contact:

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**GREEN SEAL™ BEST PRACTICES GUIDE FOR  
FLEET VEHICLE MAINTENANCE OPERATIONS**

**TABLE OF CONTENTS**

**1.0 SCOPE ..... 4**

**2.0 PERFORMANCE REQUIREMENTS ..... 4**

**3.0 SPECIFIC ENVIRONMENTAL REQUIREMENTS..... 4**

**3.1 MOTOR AND MECHANICAL FLUIDS AND FILTERS ..... 4**

**3.2 TIRE REPLACEMENT ..... 5**

**3.3 PARTS CLEANING ..... 5**

**3.4 VEHICLE CLEANING ..... 5**

**ANNEX..... 8**

**APPENDIX 1 ..... 9**

## GREEN SEAL™ BEST PRACTICES GUIDE FOR FLEET VEHICLE MAINTENANCE OPERATIONS

### 1.0 SCOPE

This document establishes best practices for the maintenance of fleets of vehicles, primarily light-duty, used for services. See Appendix 1 for an example list of what is included in this document.

Words and phrases described in the document that appear in italics have a corresponding definition located in the definition section of the document, Annex A.

### 2.0 PERFORMANCE REQUIREMENTS

All maintenance activities, including materials and services, should ensure acceptable vehicle performance for a duration commonly accepted in the industry.

### 3.0 SPECIFIC ENVIRONMENTAL REQUIREMENTS

Maintenance of vehicles shall be performed in accordance with the following requirements.

#### 3.1 Motor and Mechanical Fluids and Filters.

**3.1.1 Engine Oil.** *Re-refined engine oil* is used for all oil changes. The re-refined oil component is at least 40% of the product. The re-refined oil meets appropriate performance specifications of the American Petroleum Institute and Society of Automotive Engineers.

**3.1.2** In lieu of meeting section 3.1.1, engines are equipped and maintained with an oil filter or equivalent system that significantly reduces (by at least 40%) the amount of oil required to be added in routine maintenance.

**3.1.3 Used Oil.** Used oil is returned to an appropriate re-refiner or, if unacceptable for re-use, to a waste energy recovery facility.

**3.1.4 Oil Filters.** Used oil filters are drained of residual oil to the maximum extent practicable and metal parts are recycled. Used oil filters are not disposed of in landfills.

**3.1.5 Engine Coolant (Antifreeze).** Recycled propylene glycol is used for all additions to or replacements of the coolant. Used coolant is recycled for re-use.

**3.1.6 Refrigerant.** Air-conditioned vehicles are serviced regularly to inspect for leaks of refrigerant, which are immediately repaired. Any refrigerant that is removed is recycled for use.

**3.1.7 Windshield Washer Fluid.** Fluid used shall not be required to be labeled as *toxic, highly toxic, extremely flammable, flammable, combustible, corrosive*; contains no *carcinogens* or *reproductively toxic compounds*; contains no phosphorus except as trace; and is biodegradable.

## **3.2 Tire Replacement.**

**3.2.1 Replacements.** Re-treaded tires are used to replace at least 70% of tires.

**3.2.2 Worn or Defective Tires** are sent to retreading facilities or are used for waste to energy or for other rubber products. Used tires are not sent to landfills and are not disposed of improperly.

## **3.3 Parts Cleaning.**

**3.3.1 Cleaning Solution.** Only aqueous detergents or non-chlorinated solvents are used in a liquid-based cleaning system.

**3.3.2 Cleaning System** reduces generation of hazardous waste compared to a static tank containing solvent that is replaced frequently. Systems meeting this criterion include, but are not limited to, recirculating, filtered systems on a strict maintenance schedule; ultrasonic washers; etc.

## **3.4 Vehicle Cleaning.**

### **3.4.1. Washing of Vehicle Exteriors.**

**3.4.1.1** Detergent or cleaning product shall not be required to be labeled as *toxic, highly toxic, extremely flammable, flammable, combustible, corrosive*; contains no *carcinogens* or *reproductively toxic compounds*; contains no phosphorus except as trace; and is biodegradable.

**3.4.1.2** Wastewater is contained and treated to separate out pollutants (e.g., oil, solvents, heavy metals, tar). Pollutants and remaining wastewater are properly disposed of.

**3.4.2 Waxes, Polishes, Other Cleaners.** Product shall not be required to be labeled as *toxic, highly toxic, extremely flammable, flammable, combustible, corrosive*; contains no *carcinogens* or *reproductively toxic compounds*; contains no phosphorus except as trace.

### **3.4.3 Bulk Vehicle Painting.**

**3.4.3.1 Application.** Only equipment with low overspray and high transfer efficiency is used, such as HVLP (high-volume, low-pressure) or LVLP (low-volume, low-pressure) applicators. Paint is applied in sealed booths with filters. Paint applicators are cleaned in an enclosure or other system designed to minimize air releases.

**3.4.3.2 Paint.** Paint contains no *carcinogens* or *reproductively toxic compounds*. [Reserved: *Volatile Organic Compound* limits]

**3.4.3.3 Waste Paint** is recycled or properly disposed of.

### **3.4.4 Site Machinery.**

**3.4.4.1 Hydraulic Lifts.** Existing in-ground lifts are inspected frequently for fluid spillage and put on a schedule for rebuilding with an encasement or containment system or for replacement with new lifts built above ground.

### **3.4.5 Preventative Maintenance.**

**3.4.5.1** Tires are checked routinely for wear and to maintain proper inflation.

**3.4.5.2** Engine is checked routinely for tuning; filters, fluids, and other functioning parts are changed as required by standard maintenance schedules.

**3.4.5.3** Exhaust Emissions are checked and corrected at least twice a year.

**3.4.5.4** Used Parts are recycled, remanufactured, or reused if practicable.

### **3.4.6 Grounds and Good Housekeeping.**

**3.4.6.1 General.** Facility is operated and maintained overall in a way that encourages clean operations, minimizes waste and pollution, and facilitates pollution prevention practices.

**3.4.6.2** Used Oil is stored in clearly marked tanks or drums that are properly maintained, have secondary or spill containment structures, and are kept free of contamination from other wastes such as solvents.

**3.4.6.3 Drum Management.** Drums are clearly marked; hazardous and non-hazardous drums are separated; drums are checked frequently for damage; spill containment devices (e.g., containment pallets) are used. Drums are kept tightly capped; stored under cover from the elements; and protected from impacts.

**3.4.6.4 Floor Drains.** Wastewater is directed into an oil/water separator or equivalent. Oil and sludge are separated from water. Pollutants and remaining wastewater are properly disposed of.

**3.4.6.5 Uniforms and Rags.** Rags are stored in closed containers after free/excess liquid is removed; uniforms and rags are re-used wherever possible.

**3.4.6.6 Packaging.** Cardboard, plastic, and other recyclable packaging is collected and recycled.

**3.4.6.7** Chemicals used in shop in small quantities (smaller than drums) are kept in discrete, controlled locations with a clear system identifying them; any on-floor storage of chemicals for immediate access has limited amounts of clearly identified products. Efforts are made to use bulk dispensers and to substitute reusable pump sprays for aerosol cans.

**3.4.6.8 Recordkeeping.** Facility maintains accurate, complete, and up-to-date records of chemicals and materials received, used, and disposed of.

## ANNEX A – Normative

### Definitions of Terms

(note that the defined terms are italicized throughout the document)

**Carcinogen.** Compound listed in the latest edition of the Annual Report on Carcinogens, U.S. Department of Health and Human Services, National Toxicology Program as known or reasonably anticipated to be carcinogenic.

**Reproductively Toxic Compound.** Compound listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986, excluding ethanol (Cal. Code of Regulations, Title 22, Division 2, Subdivision 1, Chapter 3, Sections 12000 et seq.).

**Re-refined Engine Oil.** Used petroleum-based lubricating oil which has been refined to remove physical and chemical impurities as well as spent and unspent additives.

**Toxic, Highly Toxic, Extremely Flammable, Flammable, Combustible, Corrosive.** Product exhibiting potentially harmful characteristics as defined by Consumer Product Safety Commission regulations found at 16 Code of Federal Regulations Chapter II, Subchapter C, Part 1500, and required to be labeled accordingly.

**Volatile Organic Compound.** A compound as defined by U.S. Environmental Protection Agency at 40 Code of Federal Regulations Section 51.100(s),(s)(1).



**APPENDIX 1 - Informative**

Examples of products included and excluded in the scope of the document:

**Products Included**

- Light-duty fleet vehicle maintenance program
- Commercial fleet vehicle maintenance program

**Products Excluded**

- Airplane maintenance program
- Boat maintenance program
- Heavy-duty fleet vehicle maintenance program
- Residential fleet vehicle maintenance program
- Single vehicle maintenance program