

Off-Road Small and Large Spark-Ignition Engines

Q/A and Update

2009 EMA Certification Workshop

May 5, 2009

California Environmental Protection Agency

 **Air Resources Board**

Small Spark-Ignition Engines (SORE)

California Environmental Protection Agency

 **Air Resources Board**

SORE 2010+ MY Evaporative Requirements (Small Production Volume Tank Exemption)

- Small Production Volume Tank Exemption Manufacturers (SPVTM) must meet:
 - Low Permeation Fuel Hose (CCR Title 13 Section §2754)
 - Carbon Canister (§2754)
 - Fuel Cap Performance Standard (§2756)
- Fuel tank is exempt - permeation data not required to be submitted

2008 SPVTM Exemption

- Some SPVTM may need to submit an annual year-end actual California sales report as specified in SORE FAQ #1-44
- For example, SPVTM with 50-state sales ≥ 4000 units and choose not to limit exemption labels to ≤ 400 units

SORE Exhaust Testing (Haagen-Smit Lab)

- ARB SORE Dynamometer fully operational
- Testing will include:
 - Confirmatory engine testing
 - Title 13 New Engine Compliance testing

Large Spark-Ignition Engines (LSI)

California Environmental Protection Agency

 **Air Resources Board**

LSI > 1 Liter (2010+ MY Requirements)

- Exhaust Emission Standards for 2010+ MY > 1.0 liter
 - HC+NOx: 0.8 g/kW-hr
 - CO: 20.6 g/kW-hr
- Alternate formula listed in §2433(b)(1)(B) no longer applicable to 2010+ MY:
$$(\text{HC}+\text{NOx}) \times \text{CO}^{0.784} \leq 8.57$$

LSI Durability Demonstration (2010+ MY)

- Durability Demonstration:
 - Should be representative of real-world use
 - Accumulation cycle - mixture of Transient and Steady-State operation
 - Minimum of 50% useful life
- Manufacturers have begun submitting 2010 MY durability testing results