

# Proposed Amendments to the Gasoline Deposit Control Additive Regulation

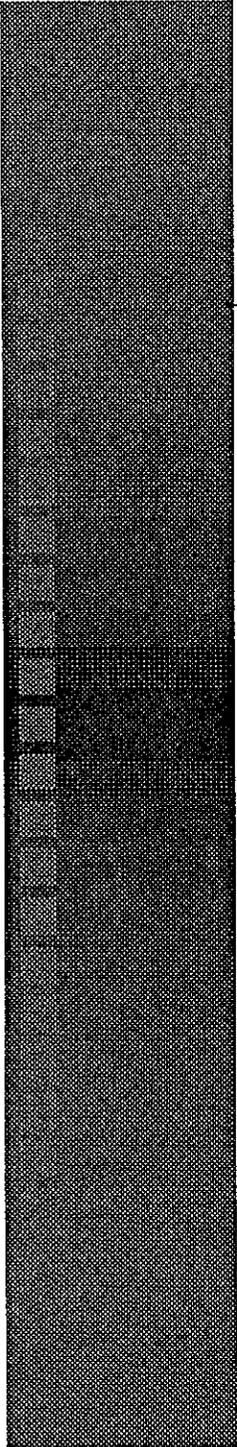
*Public Hearing*  
*November 16, 1995*

California Environmental Protection Agency

---



**Air Resources Board**



# Overview

---

- Background
- Discussion of Proposed Amendments
- Summary

# Background-

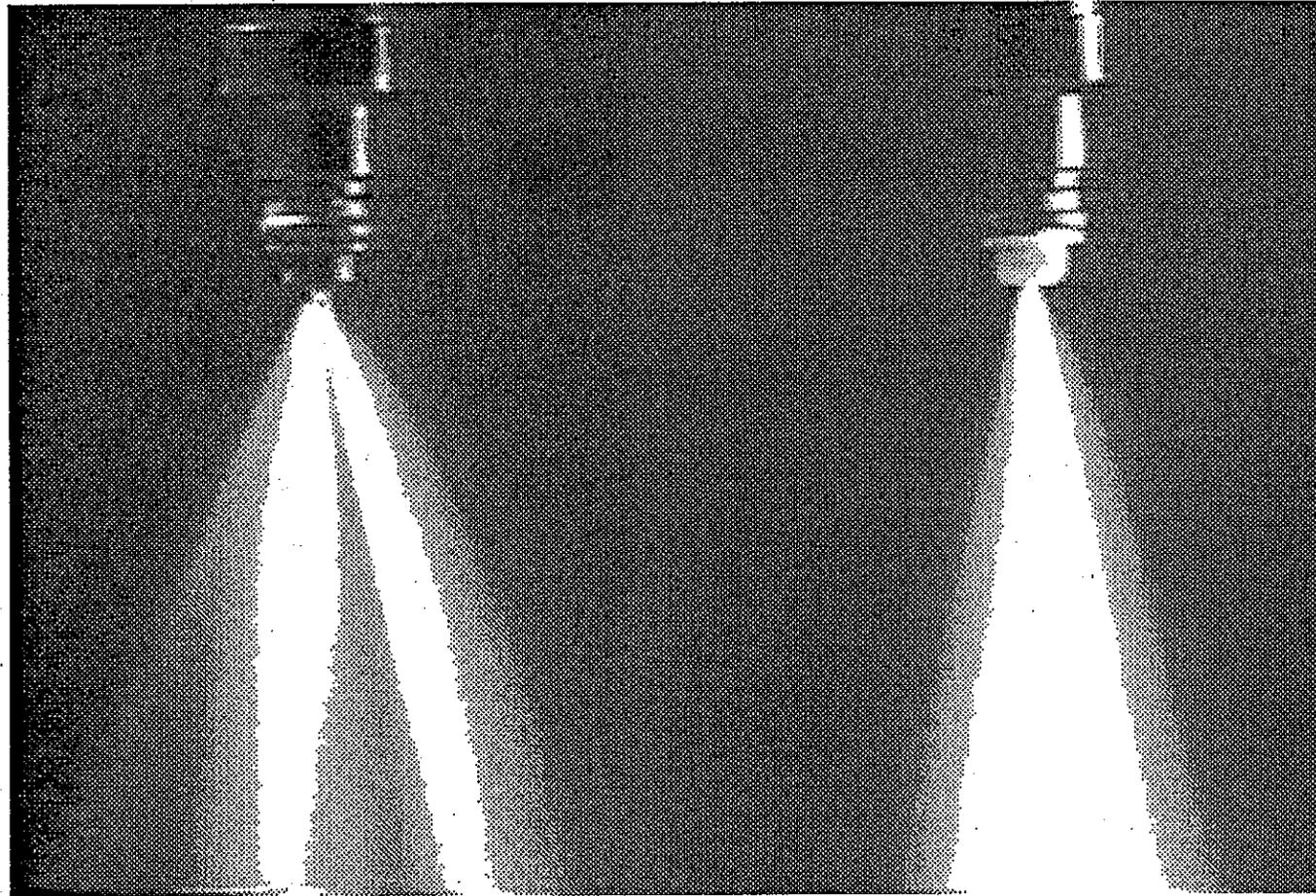
## *Summary*

---

- Deposit control additive regulation adopted by Board in 1990
- Board intended to preclude excess emissions from motor vehicles with dirty fuel systems
- Board established a per gallon standard to assure that all motor vehicle gasoline is effective in cleaning deposits

# Effect of Deposits on Port Fuel Injectors

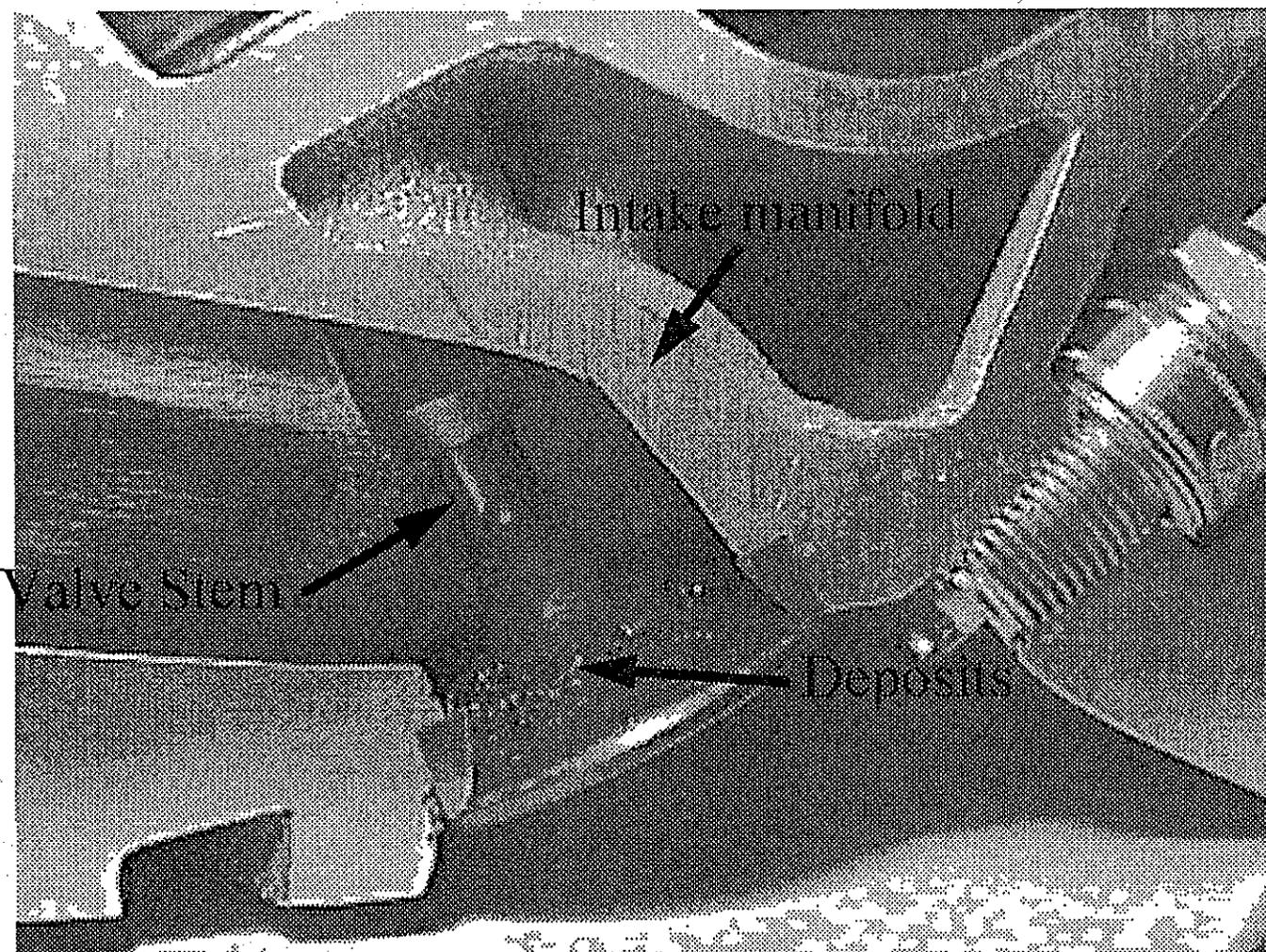
---



Plugged Injector

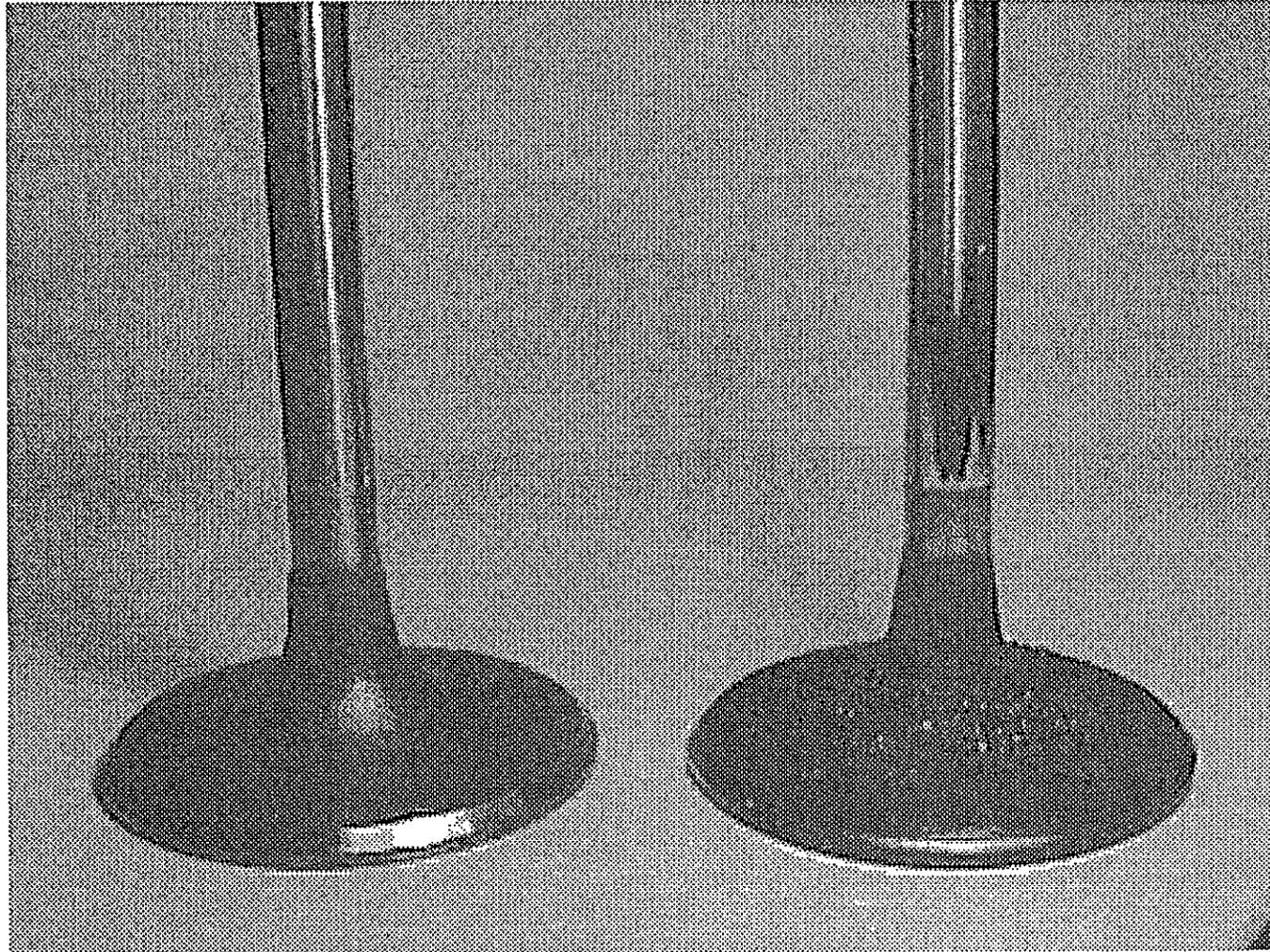
Clean Injector

# Deposit Formation on Intake Valves



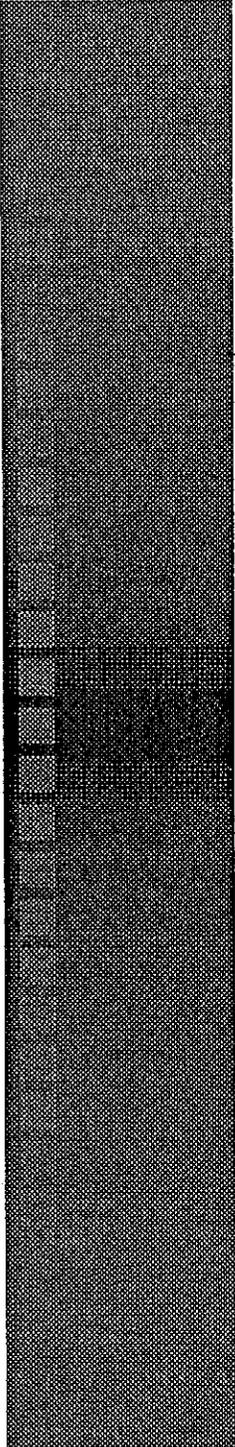
# Deposit Formation on Intake Valves

---



Clean Valve

Dirty Valve



# Background-

## *Air Quality Benefits*

---

HC 3 tpd

CO 30 tpd

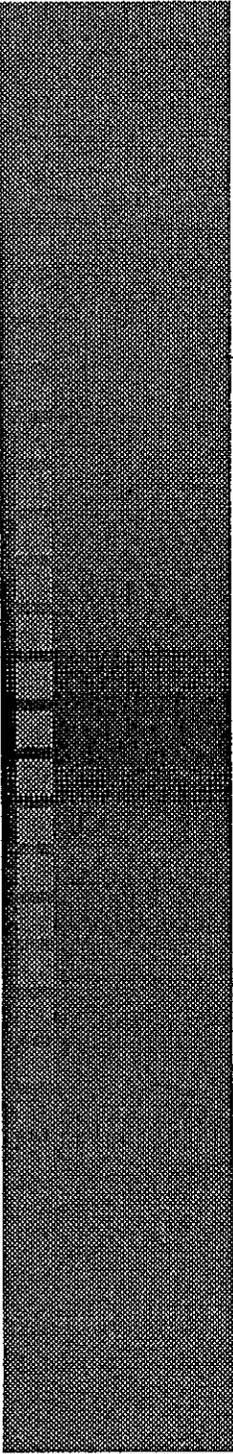
NO<sub>x</sub> 2 tpd

# Background-

## *Regulatory Requirements*

---

- Additization of all commercial gasoline
- Formal application
- Vehicle testing to demonstrate additive effectiveness
  - ◆ Keep Clean: port fuel injectors & intake valves
  - ◆ Clean Up: port fuel injectors
- Recordkeeping



# Background-

## *Program Status*

---

- Over 230 certifications approved to date
- Certification review and enforcement procedures were developed to implement regulatory requirements

# Proposed Amendments

---

- Certification Test Fuel Properties
- Recordkeeping
- Test Methods
- Other

# Proposed Amendments

---

- Provide regulatory “housekeeping”
- Do not represent any fundamental changes to current regulation
- Maintain environmental benefits

# Proposed Amendments-

## *Certification Test Fuel*

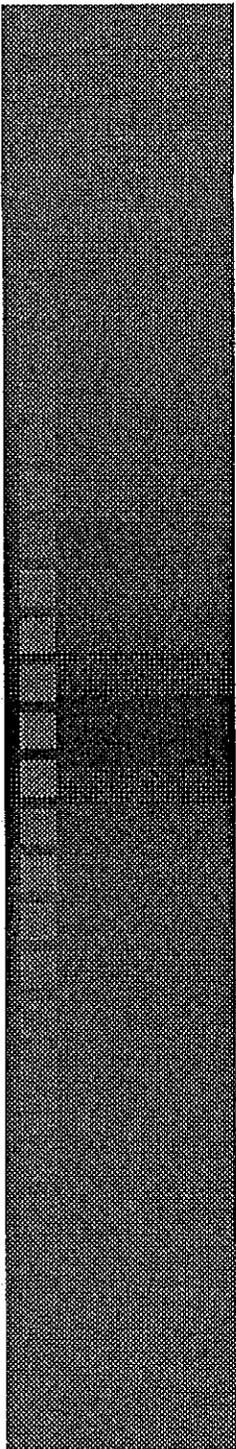
---

- Certification test fuel properties must represent maximum requested gasoline properties
- Certain test fuel properties must be formulated to be at least 80% of requested maximums
- Other test fuel properties must be representative of typical commercial gasoline

# Certification Test Fuel Amendments- *Rationale*

---

- Minimizes test fuel requirement uncertainty
- Minimizes the need for “supplemental” testing
- Provides flexibility to formulate a certification test fuel
- Ensures that certification test fuels are representative of the requested maximum properties



# Proposed Amendments- *Recordkeeping*

---

- Proposed to delay the amendments to the recordkeeping requirements
- Allow consideration of how the final U.S. EPA deposit control additive regulation will apply to California

# Proposed Amendments-

## *Test Methods*

---

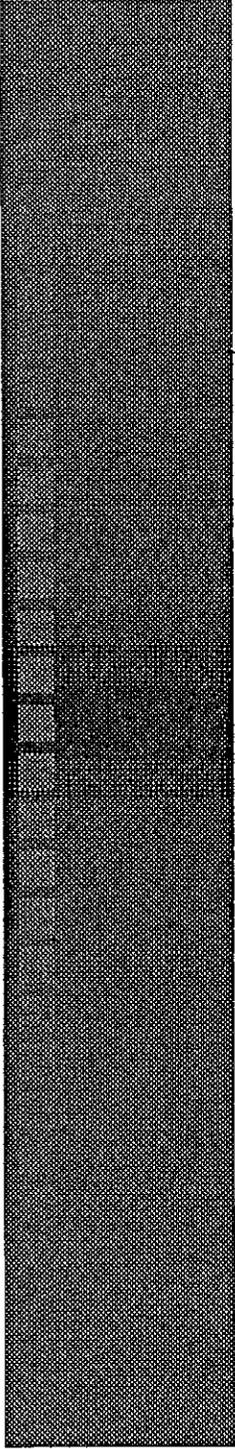
- Update PFI and IVD keep-clean test method with ASTM D 5598 and ASTM D 5500
- Revise ARB clean-up test method to incorporate ASTM D 5598

# Test Method Amendments-

## *Rationale*

---

- Provides consistency with anticipated U.S. EPA vehicle testing requirements under the final regulation
- Provides improved QA/QC and reduce test variability
- May reduce invalid runs



# Proposed Amendments- *Manual Correction*

---

- Allows the practice of manual additive correction
- Requires documentation

# Proposed Amendments-

## *Other*

---

- Clarify definition of “gasoline”
- Clarify definition of “gasoline formulation”
- Require test method reproducibility as part of application package
- Require additive concentration on a volume basis as part of application package

# SUMMARY

---

- Amendments provide clarity, specificity and flexibility to the additive regulation
- Amendments provide consistency with the future U.S EPA additive regulation
- Amendments maintain current air quality benefits