

Ozone Transport Commission Update

Regulations on Volatile Organic Compound Emissions from Asphalt Emulsions

Presentation of the ITC to AEMA, ISSA, ARRA Meeting

San Jose del Cabo, Mexico, 20 February 2008





Regulations & Volatile Organic Compounds (VOC's)

Regulation goals: improve air quality & human health

- Abundant research has correlated air quality with human health
- Non-attainment zones within the U.S.
- Clean Air Act of 1990 mandated regulatory agencies: OTC, MRPO, CARB, state EPA's, etc.
- Ozone Transport Commission: 14 Mid-Atlantic and New England states



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AQI Range	EPA Color Scale	EPA Descriptor	Clean Air Campaign Health Advisory
0 to 50	Green	Good	The air quality is good and you can engage in outdoor physical activity without health concerns.
51 to 100	Yellow	Moderate	At this level the air is probably safe for most people. However, some people are unusually sensitive and react to ozone in this range, especially at the higher levels (in the 80s and 90s). People with heart and lung diseases such as asthma, and children, are especially susceptible. People in these categories, or people who develop symptoms when they exercise at "yellow" ozone levels, should consider avoiding prolonged outdoor exertion during the late afternoon or early evening when the ozone is at its highest.
101 to 150	Orange	Unhealthy for Sensitive Groups	In this range the outdoor air is more likely to be unhealthy for more people. Children, people who are sensitive to ozone, and people with heart or lung disease should limit prolonged outdoor exertion during the afternoon or early evening when ozone levels are highest.
151 to 200	Red	Unhealthy	In this range even more people will be affected by ozone. Most people should restrict their outdoor exertion to morning or late evening hours when the ozone is low, to avoid high ozone exposures.
201 to 300	Purple	Very Unhealthy	Increasingly more people will be affected by ozone. Most people should restrict their outdoor exertion to morning or late evening hours when the ozone is low, to avoid high ozone exposures.
Over 300	Black	Hazardous	Everyone should avoid all outdoor exertion.



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During 1996 Summer Olympic Games in Atlanta, GA

peak morning traffic decreased 23%

peak ozone levels decreased 28%

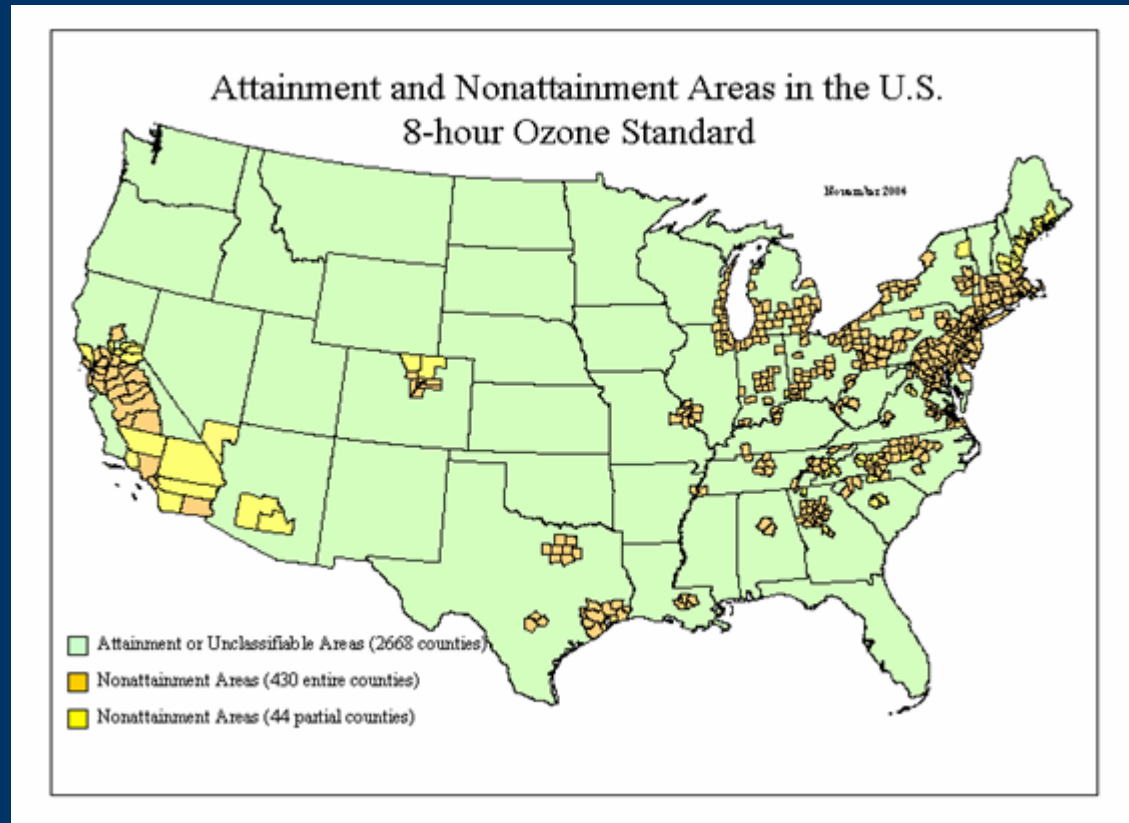
Emergency room visits for asthma events in children decreased 42%. (Rates for other emergency visits did not change.)

http://www.saferoutesinfo.org/guide/introduction/health_risks.cfm



Air Quality Initiatives Strengthen Annually

Non-Attainment Zones in USA





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Air Quality Initiatives Strengthen Annually

State, Regional, & Municipal Air Quality Agencies



Within the California EPA, and the CA Air Resources Board, there are 35 Regional Air Quality Districts



Air Quality Initiatives Strengthen Annually

National Association of Clean Air Agencies (NACAA)

Transl

NACAA



Select State:
Select one

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Outline
CT DEP 2007

Regs & VOCs
ITC Response

AEMA-OTC Interactions
Summary



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Midwest Regional Planning Organization

NACAA

Transl

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Ozone Transport Commission

U.S. Agency Contacts

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Local Agencies

- [Bridgeport](#)
- [Bristol-Burlington](#)
- [Greenwich](#)
- [Milford](#)
- [New Haven](#)



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AEMA-OTC Interactions

History of Interaction & Reactions of the AEMA-ITC

- Sept. 2006: OTC contacted AEMA about “banning” solvent use in cutbacks & asphalt emulsions
- International Technical Committee contacted OTC: education on emulsions & applications, data sharing
- Nov. 2006: OTC recommended 20% across-the-board reduction in solvents for all emulsions
- OTC Board forwarded the recommendation to the 13 member States
- Lesson: proactive initiatives needed to assist regulators in understanding stakeholder issues



CT DEP 2007 Objective: ozone/smog reduction

- CT regulatory legislation targeted cutbacks & asphalt emulsions
- Goal: <0.5 g distillate in 200 mL emulsion (ASTM D 244)
- ITC reaction: 1) membership VOC data, 2) lab eval's, & 3) formal letter of concern to CT DEP
- Naphtha, kerosene, & diesel from emulsion films
- Naphtha, kerosene, & diesel from compacted mixes
- Outcome: CT allows 6 mL distillate via D 244



ITC Reaction to CT DEP Regulation

Membership input on actual VOC usage

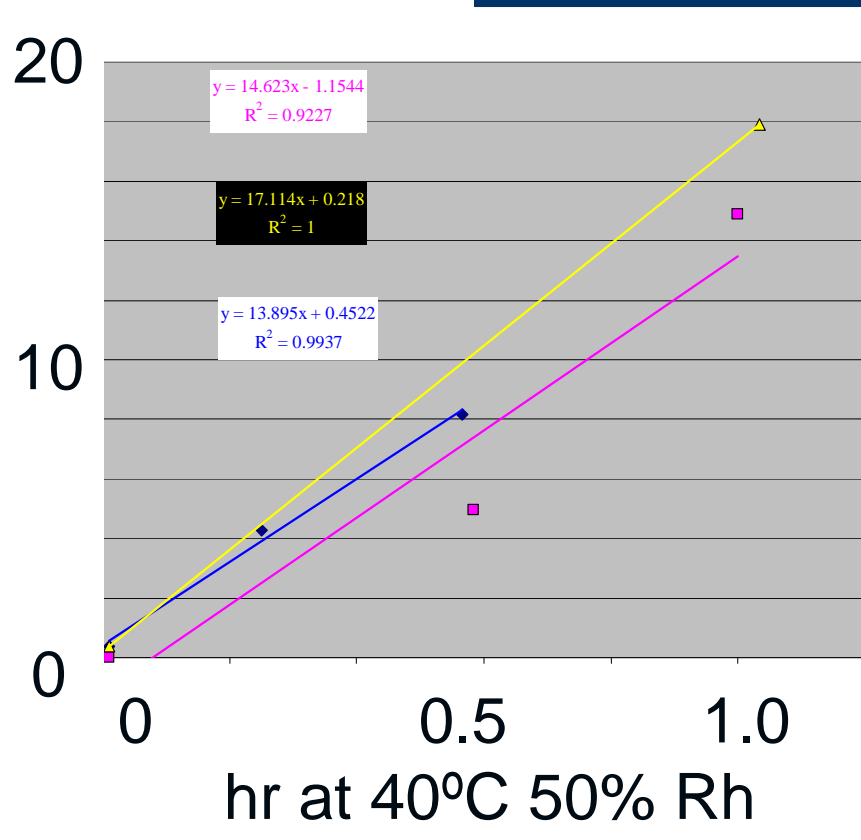
- OTC reported roughly 27 tons VOC in asphalt emulsions per day during the ozone period in the OTC region
- Membership data in CT & bordering states indicated 2.9 tons per day (OTC data not out of line)
- Membership reported primary uses: CRS, CMS, & HFMS applications



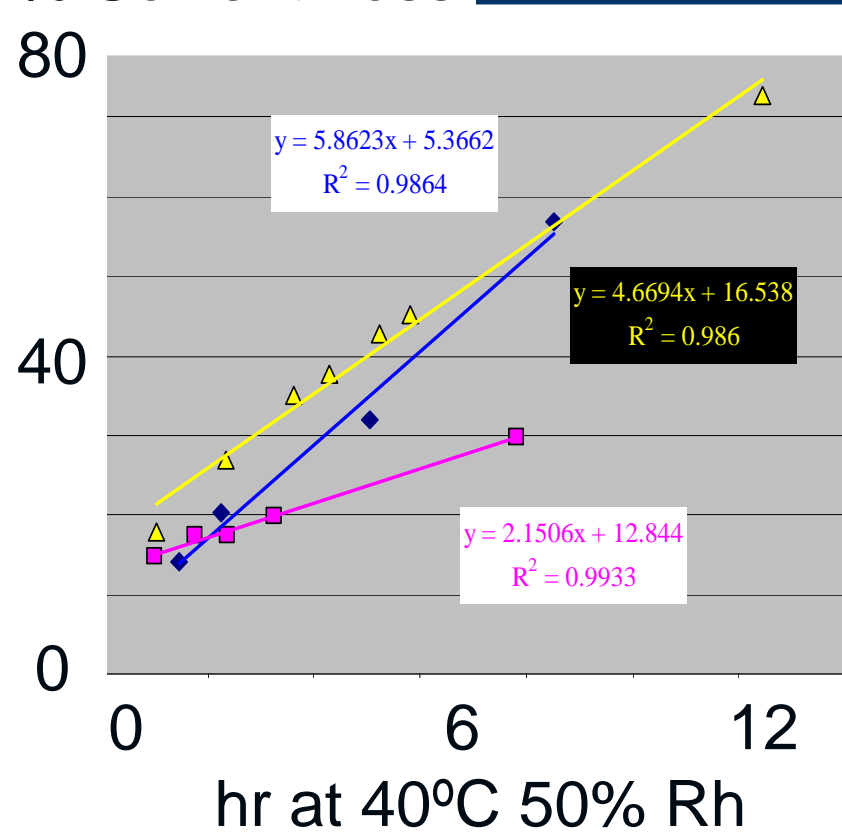
ITC Reaction to CT DEP Regulation

Laboratory Data on VOC Emissions: Thin Films

% Solvent Loss



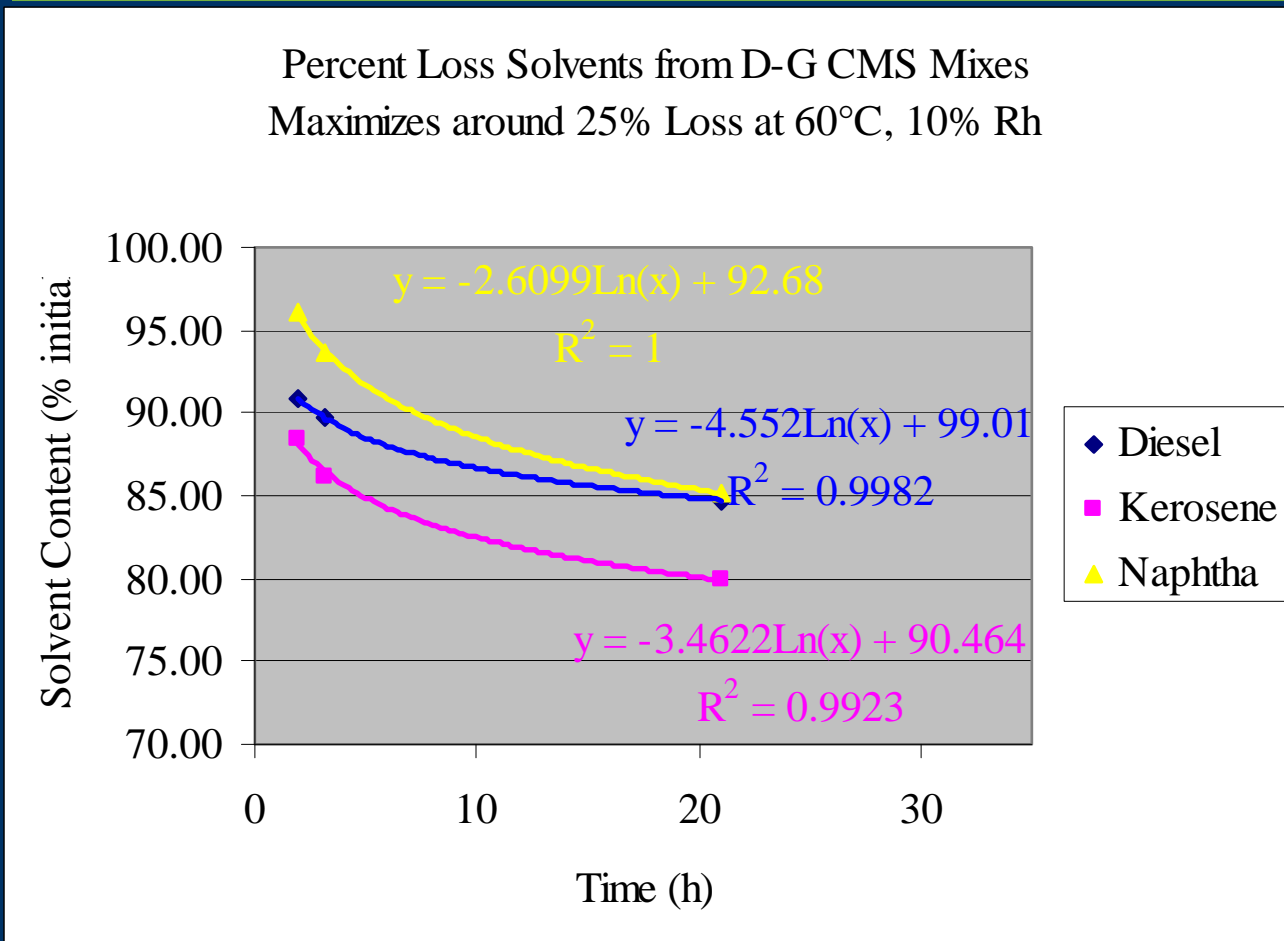
% Solvent Loss





ITC Reaction to CT DEP Regulation

Laboratory Data on VOC Emissions: Dense Mixes





ITC Reaction to CT DEP Regulation

AEMA Issues Letter to CT DEP & Meeting Attendance

- AEMA summarized results in formal letter to CT DEP
- Membership attended open meetings of CT DEP to address the pending changes in VOC emissions regulations
- Outcome: CT DEP granted allowance for 6 mL of distillate in 200 mL of asphalt emulsion via ASTM D 244 (500°F distillation)



Summary

Next Steps for the Asphalt Emulsion Industry

- Facts: regulatory restrictions will increase
- Facts: some phase out of current technologies is likely
- Facts: regulatory agencies are interested in finding sustainable solutions
- Balancing economic growth & EHS issues is achievable via membership interaction with agencies
- View regulations as a business opportunity rather than business burden



Summary

Next Steps for the Asphalt Emulsion Industry

□ A case of preparedness

Shortly after this presentation was given Feb. 20, '08, So. California Air Quality District contacted AEMA about implementing AASHTO T78 for solvent emissions from emulsions & cutbacks under a new mandate, #2007-FUG 03.

The asphalt emulsion producers in that region have been preparing for many years now for solvent eliminations. So this was not an issue.

□ Sustainability, balancing business growth strategies with environmental stewardship programs, requires foresight