



SCAQMD CEQA Responsibilities, Impact Analysis and Mitigation

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Planning and Rules

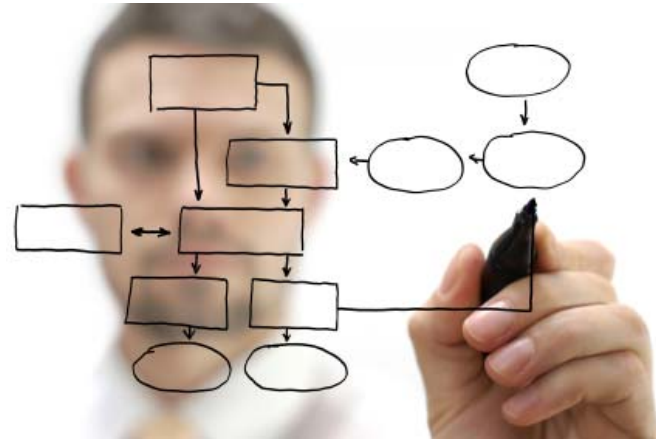
**Assessing and Managing Toxic Risk from
Alternative VOC Compounds**
October 29, 2014

CEQA Applicability



- Purpose of CEQA is to inform decision makers and public about potential environmental effects of proposed activities
- Includes regulatory activities undertaken by a Public Agency [*CEQA Guidelines §15002(b)*]
- Need to evaluate the whole of an action that has direct or reasonably foreseeable indirect physical changes to the environment [*CEQA Guidelines §15378*]
- Our analysis includes a preliminary review of 17 environmental topic areas for potentially significant impacts
- If significant, required to apply all feasible mitigation measures
- Prepare appropriate CEQA document and circulate for a required public comment and review period

Environmental Impact Areas



- Aesthetics
- Agriculture, Biological, and Cultural Resources
- **Air Quality**/Greenhouse Gases
- Energy
- Geology/Soils and Mineral Resources
- **Hazards**
- **Hydrology/Water Quality**
- Land Use, Population/Housing, Public Services, and Recreation
- Noise
- Solid Waste
- Transportation

VOC Rules: Typical Environmental Analysis



- **Air Quality Impacts**

- ❑ Direct criteria pollutant benefit from complying with lower VOC content limits
- ❑ Potential indirect impacts from reformulations or replacements (*with water or VOC exempt solvents*)
 - ✓ Potential adverse toxic impact from VOC-exempt solvents
 - ✓ Potential adverse odor impacts
 - ✓ Corresponding GHG impacts

- **Hazard Impacts**

- ❑ Potential flammability impacts

- **Hydrology/Water Quality Impacts**

- ❑ Potential water demand from new water-based coatings

Toxic Impact Analysis



- **Potential Risk**

- ❑ Acute (short-term exposure) non-cancer risk
- ❑ Chronic (long-term exposure) non-cancer risk
- ❑ Carcinogenic cancer risk

- **Receptors**

- ❑ Offsite exposure (to resident or worker) – *standard R1401 analysis*
- ❑ Onsite worker (“occupational”) exposure (*indoor or outdoor*)

Offsite Exposure



- **Off-site residential or worker receptor**
 - ❑ Short-term exposure
 - ✓ Acute REL
 - ❑ Long-term exposure
 - ✓ Cancer risk
 - ✓ Chronic REL
 - ❑ Factors that affect the concentration at receptor
 - ✓ Weight fraction in formulation
 - ✓ Usage amount
 - ✓ Area coverage
 - ✓ Distance from source

Onsite Worker Exposure



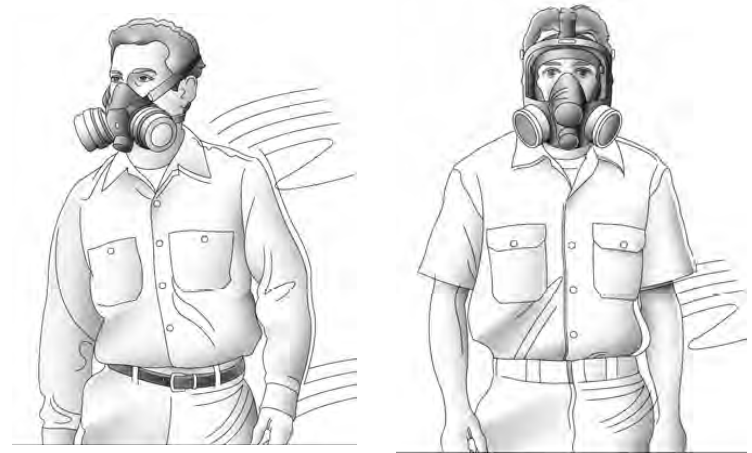
- **Acute and Chronic Non-Cancer Impacts**
 - ❑ OSHA enforceable PEL
 - ❑ OEHHA RELs ??
- **Carcinogenic Impacts**
 - ❑ Potency Value
 - ✓ OSHA PEL is not based on carcinogenic impact
 - ✓ OEHHA published cancer potency
 - ❑ Risk Assessment Methodologies
 - ✓ Exposure Models
 - EPA's AERSCREEN / AERMOD
 - CARB's (or other) "Box" model (*designed for onsite workers*)
 - ✓ Exposure Measurement Studies

Considerations for Onsite Exposure Analysis



- Commercial/Professional Worker
 - ❑ Short-term and long-term exposure
- Consumer User
 - ❑ Affects broader population
 - ❑ Typically low volume use
 - ❑ Generally concerned with short-term (acute) exposure
- Risk Threshold for Significance
 - ❑ No adopted carcinogenic risk threshold for onsite user
 - ❑ OEHHA published three target cancer risk levels for occupational exposure (Dec 2007) but not adopted as a threshold
 - 1/1,000 (translates to 1,000 in one million)
 - 1/10,000 (translates to 100 in one million)
 - 1/100,000 (translates to 10 in one million)

Evaluating Feasibility of Mitigation



- **Personal Protective Equipment (PPE)**
 - ❑ Various types provide different levels of protection
 - ❑ Needs to be applicable to organic vapors (*e.g., not dust mask*)
 - ❑ Exposure reduction based on Assigned Protection Factors (APF)
 - ✓ Half-mask has an APF=10 (*90% control efficiency*)
 - ✓ Full-mask has an APF =50 (*98% control efficiency*)
- **Limits on Usage**
- **Enforcement Considerations**
 - ❑ Appropriate enforcement agency (*with training*)
 - ❑ Accordance with OSHA Respiratory Program (*Guidelines 1910.134(c)*)
 - ❑ Recordkeeping and reporting

CEQA Challenges



- Selection of the onsite risk threshold
- Practicability of limiting usage
 - ❑ Ability and effectiveness to limit use for certain applications only
 - ❑ Enforceable limits on usage or reformulation (*based on appropriate target cancer risk level*)
 - ✓ Any requirement must be fully enforceable (*CEQA Guidelines §15126.4 (a)(2)*)
 - ❑ PPE viability
 - ✓ Any requirement must be fully enforceable (*CEQA Guidelines §15126.4 (a)(2)*)
 - ❑ Recordkeeping and reporting