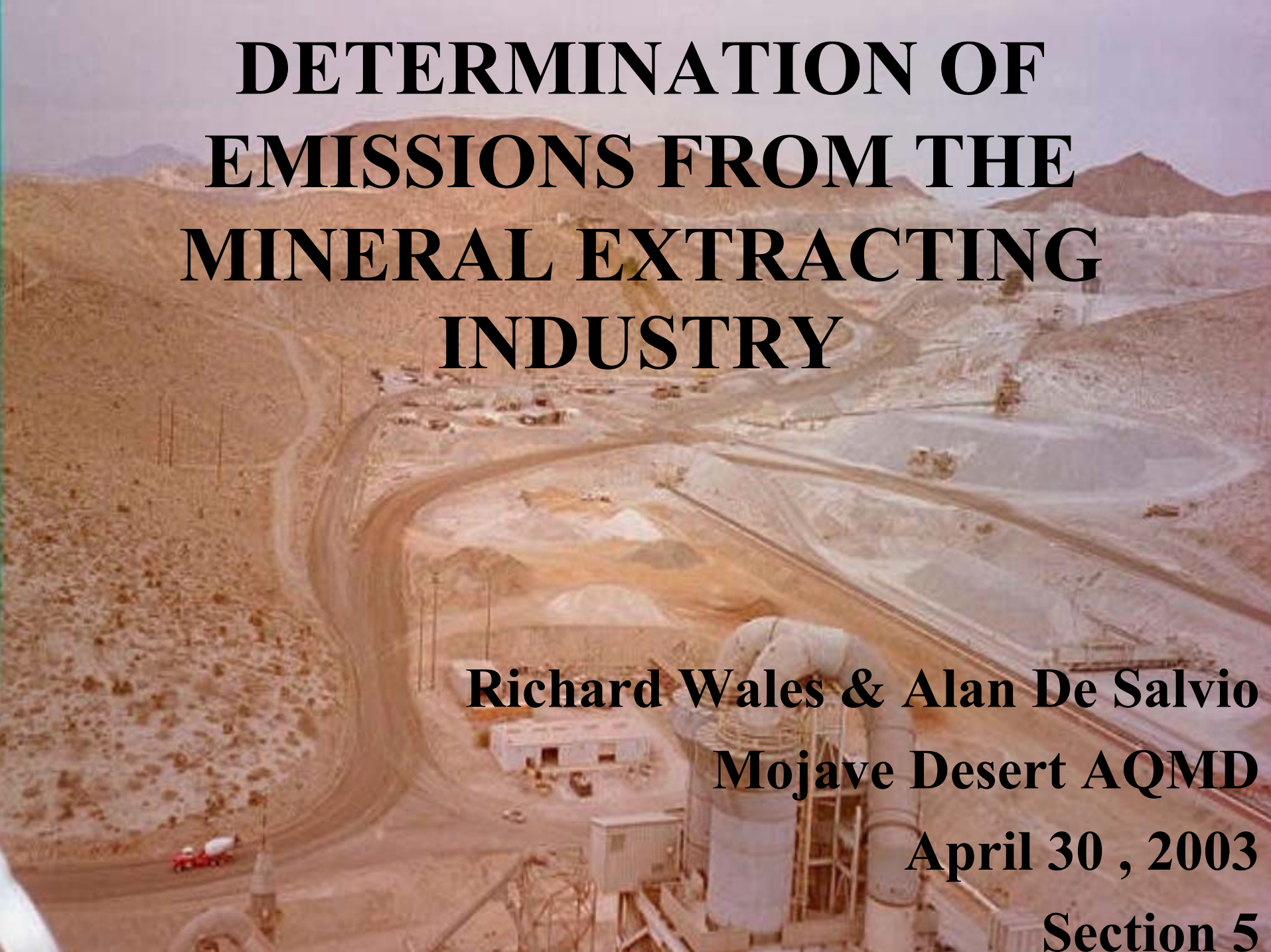
DETERMINATION OF EMISSIONS FROM THE MINERAL EXTRACTING INDUSTRY



Richard Wales & Alan De Salvio

Mojave Desert AQMD

April 30 , 2003

Section 5

Purpose

- Improve Emission Inventory Data
- Uniform Calculation Methodologies
- Documented Methodologies
- Reproducible Methodologies

Why

- How Did I Do It Last Time?
- Emission Inventory Plan
- Simplify Calculations
- Compare Similar Facilities
- Small Facilities Limited Resources
  - Environmental Staff
  - Financial Resources
- Changes to California Clean Air Act Fees

Material Process Industries

- Decorative Rock
- Iron Ore
- Lava
- Limestone
- Sand & Gravel
- Asphalt Plants
- Cement Plants
- Chemical Plants
- Gold Mines
- Rear Earth

Other Users

- Coal Handling
- Construction Sites
- Military Bases

Emission Sources

- Drilling / Blasting
- Explosives
- Material Moving
- Material Loading
- Material Processing
- Stockpiles
- Exhaust Stationary
- Exhaust Mobile
- Paved Roads
- Unpaved Roads
- Wind Erosion

Guidance Document

- Least Complex
  - Default Emission Factor
  - Process Activity Rate
- Intermediate Complexity
  - Modify Emission Factor
  - Process Activity Rate
- Most Complex
  - Develop Emission Factor
  - Process Activity Rate
  - Develop Control Efficiency

Develop Emission Factor

- Material Characteristics
  - Moisture Content
  - Density
  - Silt Content
  - Aerodynamic Factors
  - Truck Mean Weight
  - Traffic Speed
  - Haul Distance
  - Fuel Usage
  - Vegetation Cover

Develop Emission Factor

- Meteorological Data
  - Wind Speed
    - Mean
    - Percent over 12 mph
  - Precipitation
  - Pan Evaporation Rate
- Source Test Data

Develop Control Efficiency

- Water
  - Application Rate
  - Traffic Rate
- Vendors Data

Computer Program

- General Information
  - Facility Information
  - Materials Handled
  - Meteorological Data
- Emission Calculation
  - Worksheet for each Process
- Total Emission

Emission Worksheet

- Information Inputs
  - Default Values

- Data from previous input

- Outputs to Inventory

References

- "*Compilation of Air Pollution Emission Factors*", USEPA, AP-42
- "*Air Pollution Engineering Manual"*, A&WMA
- MDAQMD "*Emission Inventory Guidance*"

Future

- Incorporate
  - Additional Process
  - Revisions to AP-42
  - New Methodologies
- Add Toxic Substances
- Other Emission Sources
  - Gasoline Dispensing
  - Dry Cleaners
  - Surface Coatings & Solvents
  - Reinforced Plastic Composite Manufacturing