

RECLAMATION

Managing Water in the West

Potential Mitigation Methods for Dust Control

Salton Sea Air Quality Working
Group
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Presentation Purpose

- Pros & Cons of Chemical Dust Suppressants
- Cost Estimates for Dust Suppressants

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General Chemical Dust Suppressant Categories

- Water Attracting Chemicals
- Organic, Non-Bituminous Chemicals
- Petroleum-Based Binders and Waste Oil
- Electro-Chemical Stabilizers
- Polymers

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Water-Attracting Chemicals

Chlorides – Salts – Brine

PRO

Best Combination of application ease, durability, cost and dust control in most climates

Inexpensive

CON

Limited effectiveness, corrosive, annual application

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Organic Non-Bituminous Chemicals

Sulphite Liquors, Pine Tar, Vegetable Oil, Molasses

PRO

Inexpensive

CON

Soil Discoloration & Odour

Long Curing Time

Annual Application

Diminished Effectiveness in Humid Climates

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Petroleum Based Products

Bitumin Emulsions, Asphalt Emulsions & Waste Oil

PRO

Effective in a wide variety of climates

Long-Lasting

CON

Toxic Materials

Odorous

Expensive

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Electro-Chemical Stabilizers

Sulphonated Petroleum, Ionic Stabilizers, Bentonite

PRO

Effective in a wide range of climates
Effective in high traffic situation

CON

Performance unpredictable

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POLYMERS

- Polyvinyl Acrylics, Acetates and Acrylimides

PRO

Effective on heavily trafficked areas
Environmentally friendly

CON

Polyacrylimides are short lived and photo-sensitive
Wetting required to maximize effectiveness

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Evaluating the Cost of Dust Suppression

- Product \$ / Acre
- Application Frequency
- Application Cost
- Project Life
- Water \$
- Regulatory Approval

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Water-Attracting Chemicals

Magnesium Chloride

Aerial (1 - 2.5 year application cycle for 40 years)

\$20,800 - \$25,000 per acre

Aerial (10 applications for 40 years)

\$ 4,250 – \$6,330 per acre

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POLYMERS

Polyvinyl Acetate

Water Truck (3-4 year application cycle for 40 years)

\$5,000 - \$8,000 per acre

Polyacrylimide

Water Truck (3-4 week application cycle for 40 years)

\$ 26,000 – \$34,600 per acre

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Organic Non-Bituminous Chemicals

Lignen Emulsion

Water Truck (1 year application cycle for 40 years)

\$32,000 - \$40,000 per acre

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Revegetation

Desert Grass and Forb Seed Mix (2 application cycles over 40 years – no irrigation)

\$2000 - \$4000 per acre

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Microbiological Binders

Cyanobacteria – Cryptogamic Soils

Hose and Water Truck Application (1-3 applications over 40 years)

\$3,642 – \$10,926 per acre

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Questions and Comments

Potential Mitigation Methods
for
Dust Control

