Environment Management Series

DUST MANAGEMENT & FDR STANDARD

TOOLBOX PRESENTATION

DUST MANAGEMENT & FDR STANDARD

Elevated ambient dust levels can be a source for nuisance dust and potential environmental, safety and health hazards.

WHAT ARE THE IMPACTS?

Dust from our SIMEC Mine sites can contribute to:

- Impacts to vegetation (stress to plants & deaths of some key indicator species)
- Impacts to fauna habitat
- Third party property damage
- Reduced visual amenity due to dust staining
- Regulatory attention (PEPR non-compliance)
- Complaints
- Difficulties and delays in obtaining future mining approvals
- Reduced availability of palatable feed for grazing stock
- Increased conditions imposed by the Mining Regulator

DUST MANAGEMENT & FDR STANDARD

WHAT DUST MONITORING IS DONE?

- ✓ Vegetation impact monitoring (see next 2 slides)
- ✓ Dust Deposit Gauges (measures mass & type)
- ✓ We all need to be conducting Fugitive Dust Rankings (FDR) (explained later in presentation)

DUST MANAGEMENT & FDR STANDARD

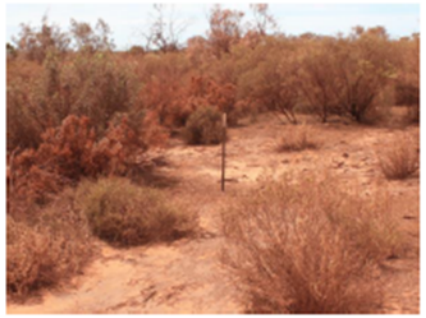
IMPACTS ON SURROUNDING VEGETATION -

- Vegetation health is monitored for impacts of dust.
- Each vegetation monitoring site utilises indicator species selected for their physiological vulnerability to impact from dust deposition.

Iron Knight

Iron Chieftain

Off Site



Iron Baron

Side by side comparison highlights the obvious difference in vegetation colour between impact and control sites.

DUST MANAGEMENT & FDR STANDARD

OUR REGULATORY REQUIREMENTS –

Our **PEPR (Programme for Environmental Protection & Rehabilitation)** requires SIMEC Mining to control dust to prevent impacts on property and to monitor impact.

'No vegetation health impacts to neighbouring properties from dust generated by mining activities'

'No permanent loss of abundance or diversity to native vegetation through clearance, dust on or off the tenements, unless prior approval under legislation is obtained'

'Compliance with the mines FDR Standard'

'Complaints of dust emissions are investigated & all corrective actions are close within 30 days'

General Environmental Duty (Environment Protection Act, 1993)

'A person must not undertake any activity that pollutes, or might pollute, the environment unless the person takes all reasonable and practicable measures to prevent or minimise any resulting environmental harm'

DUST MANAGEMENT & FDR STANDARD

WHAT DO WE NEED?

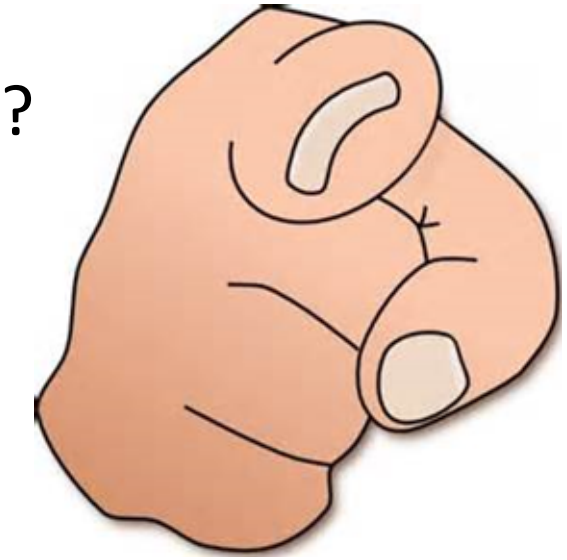
1. Clear understanding of who has responsibility for dust control
2. Clear understanding of what our dust sources are
3. Clear understanding of what controls to use and when
4. Fugitive Dust Ranking Standard-

- Awareness about what is “compliance” and what level of dust control is deemed acceptable by SIMEC, neighbours and the regulators to maintain ongoing licence to operate
- Systematically identify and prioritise fugitive dust activities for improvement (incident reports, complaints)

DUST MANAGEMENT & FDR STANDARD

1. WHO IS RESPONSIBLE FOR DUST MANAGEMENT?

EVERYONE!



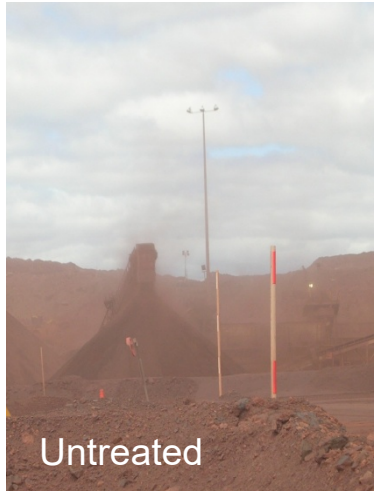
Each plant area is responsible for determining:

- sources of fugitive dust emissions
- their environmental impacts (recorded in the Environment Risk Register)
- control measures
- ensuring dust control measures are effective

DUST MANAGEMENT & FDR STANDARD

Dust Source	Controls
Crushing / Screening	- multi-zone atomising sprays - dust suppressant chemicals - hoods and covers - procedures
Haul Roads / Unsealed Roads	- water carts - dust suppressant chemicals applied to haul roads
Load	- minimise drop height - precondition shot - consider wind direction
Haul	- water carts - dust binding chemicals
Stockpiles	- water cannon - dust binding chemicals
Train Loading	- procedures - dust binding chemicals
Mining and Open Areas	- procedures - water carts - open areas minimised
Top Soil Clearing	- winter - precondition soil - cap with fresh water

2. WHAT ARE OUR SIGNIFICANT DUST SOURCES & ASSOCIATED CONTROLS?



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3. DUST CONTROLS

Use of dust suppressant chemicals & water sprays at transfer points

Train sprays

Stockpile watering

Water tankers are used to apply water/chemical dust suppressants to sites within an area of operations that has the potential to generate dust including unsealed roads, haul roads and dump areas.

Minimise open areas by revegetating

Enclosure of dusty machines & transfer points

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WHAT NEEDS TO BE DONE?

We ALL need to:

- Carry out regular Fugitive Dust Ranking (FDR) observations,
- Immediately respond with EMP controls
- Report incidents as required

Refer to the next few slides on Fugitive Dust Ranking requirements

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4. FUGITIVE DUST RANKING STANDARD: WHAT IS IT?

- An innovative approach designed to empower employees and contractors to “own” dust suppression outcomes. Controls can be adjusted based on ranking or operations stopped completely.
- A simple common site wide standard that utilises an illustrated table (later slide) that all personnel can use to rank dust emission levels from any activity.
- Makes all personnel, (SIMEC and Contractors) responsible for dust control.
- Provides clear instructions for corrective action.
- Provides a mechanism by which non-compliant activities will be risk ranked to prioritise improvement.

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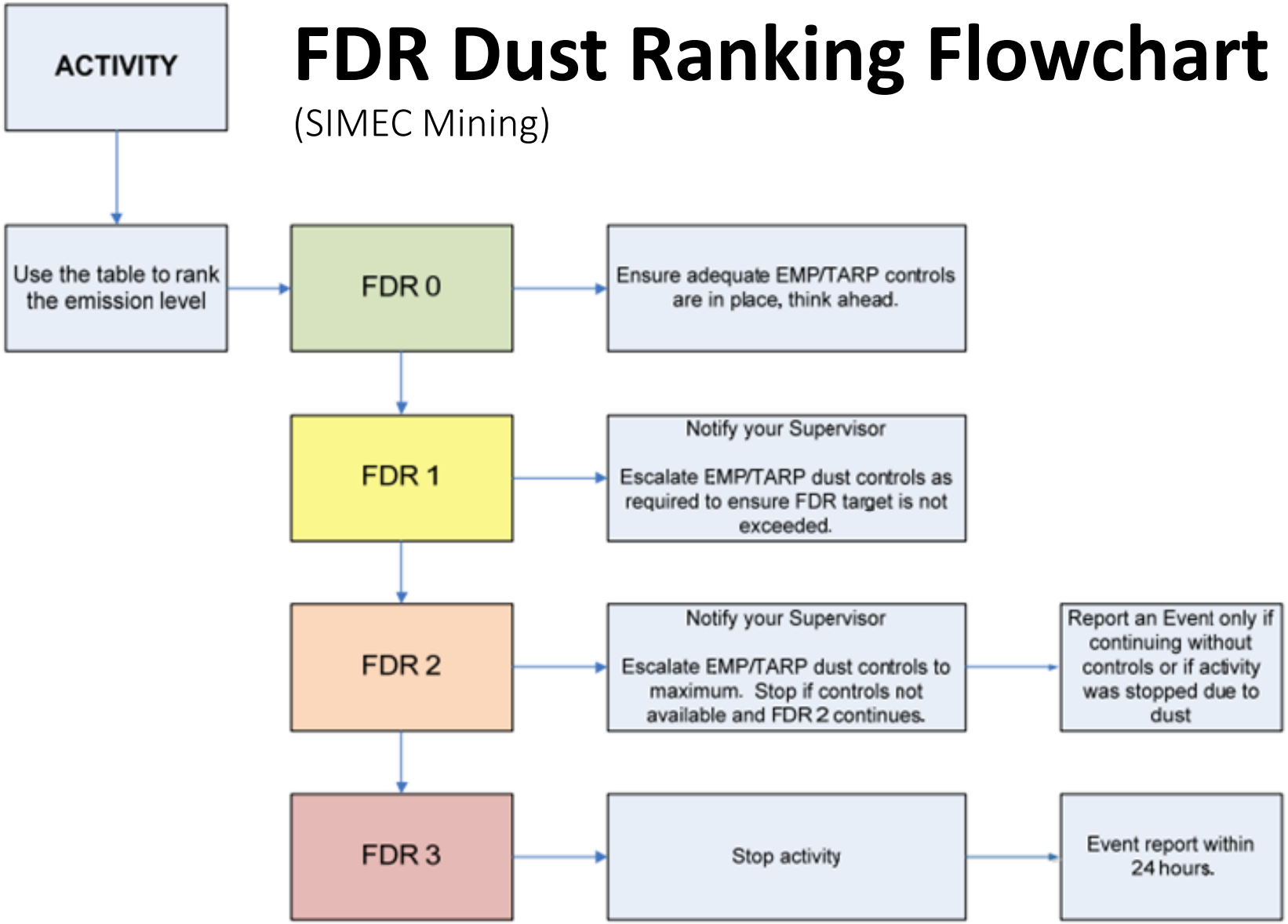
DUST CONTROL IS EVERYONE'S RESPONSIBILITY

- Every dust generating activity must have an Environment Management Plan (EMP)
- Dust control in the mining contractor exclusive areas is the responsibility of the contractor
- The targeted emission ranking level for mining sites is **FDR1 or lower**
- Non-compliant (incident report required) emission ranking level is **≥ FDR2**

FDR Dust Ranking Flowchart

(SIMEC Mining)



FDR Ranking Table
(SIMEC Mining)

QP50.68 Att A

FDR	Assessment			Controls	Reporting
	Impact	Roads/Vehicle Movement	Material Processing (Crushing & Screening/Mobile Plant)	Note: Refer to the site EMP	Environment Incident Reports.
FDR 0	**Acceptable emissions** Dust is 90% transparent 50m from the dust source			**Ensure adequate EMP controls are in place, think ahead**	*None required*
FDR 1	**Localised impacts that warrants control measures** Dust is 50% transparent 50m from the dust source Dust plume remains within the work area			**Notify your supervisor.** **Escalate EMP dust controls as required to ensure FDR target is not exceeded**	*Record Actions in Shift Log*
FDR 2	**Potential safety hazard/environmental impacts** Dust is 25% transparent 50m from the dust source Vision partially obscured Discomfort to operators Visible plume leaves the work area and moves toward the tenement boundaries			**Notify your Supervisor.** **Escalate EMP dust controls to maximum. Stop if controls not available.**	*Report an Incident only if continuing without controls*
FDR 3	**Definite safety hazard/Environmental Harm** Very low transparency 50m from the dust source Vision obscured High level discomfort to operators Visible dust plume is seen to leave the mining tenements and moves towards residences or sensitive receptors			**Stop activity**	*Incident report within 24 hours*