



Mining & Quarrying
OCCUPATIONAL HEALTH &
SAFETY COMMITTEE

MAQOHSC Safety Snapshot



Diesel/self-priming pump unit at pond with floating inlet (Allflo)



Integrated self-priming pump unit (Allflo)



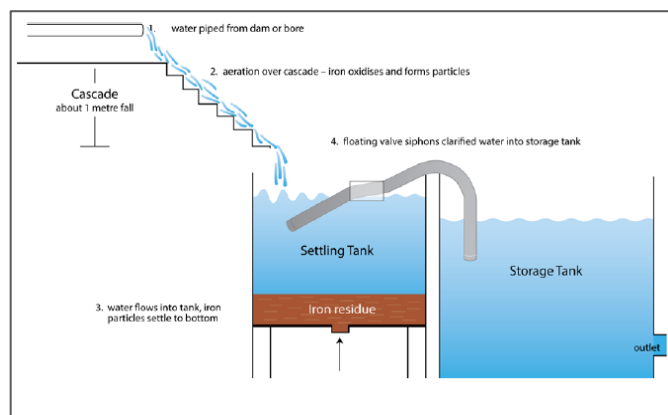
Duplex basket strainers (strainer mesh must be smaller than spray jet orifice) or 'Y' strainer (PSF Equipment)



Diesel standpipe unit for fast water truck re-filling (Allflo)

COMPONENTS FOR DUST PREVENTION AND SUPPRESSION SYSTEMS (smaller quarries)

- ✓ Supply from borehole pump or pit run-off settling pond pump (Floating inlet)
- ✓ Self-contained water delivery systems are desirable
- ✓ Storage tank for overnight settling recommended



2 tank bore/dam water settling setup (NSW Primary Industries)

- ✓ Filtration through duplex basket strainer or 'Y' strainer

Dust prevention nozzles (Low pressure water system)

- ✓ Larger volumes of water at low pressure (below 10 bar)
- ✓ Usually at close range on conveyors at the beginning of the transfer point, perpendicular to travel – overlap 30% of fan width
- ✓ Overlapping entire surface of ore material
- ✓ Wet before & after crushing
 - Droplet size 100µm – 500 µm
 - Standard hydraulic nozzles - S/S or brass
 - Flat spray nozzles – stockpiles
 - Full cone – transfer points

Airborne dust suppression (Lower volumes/higher pressure > 50bar)

- ✓ Minimise air turbulence – install wind shields where possible
- ✓ Nozzles located close enough to ore to prevent air current dispersal
- ✓ Located to allow maximum time to interact with airborne dust
- ✓ Drops less than 200 µm are better at suppressing airborne dust
- ✓ Place nozzles to spray the air above the material at the end of transfer points
 - S/S or brass hydraulic fine spray nozzles that produce drops between 20 and 200 µm
 - Hollow cone nozzles



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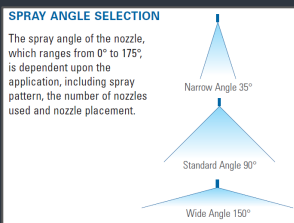
MAQOHSC Safety Snapshot



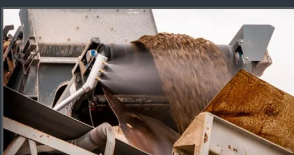
Hydraulic fine spray nozzles – brass (Spraying Systems Co.)



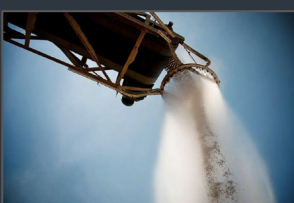
Flat spray hydraulic nozzles (Spraying Systems Co.)



Nozzle spray angle applications (Spraying Systems Co.)



Conveyers drop-point spray manifold



Stacker spray ring

Smallest Drop Size



Largest Drop Size

APPLICATION	AIR ATOMIZING	HYDRAULIC FINE SPRAY	HOLLOW CONE	FLAT SPRAY	FULL CONE
Longwall mining machines, coal shearers continuous miners			•		
Jaw crushers	•	•	•		
Methane gas dispersion	•	•			
Loading terminals		•	•		
Primary dump hoppers	•	•			
Transfer points	•	•	•		•
Transport areas	•		•		
Stockpiles		•		•	
Stackers, reclaimers		•			•

Jet type applications
(Spraying Systems Co.)