



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)**



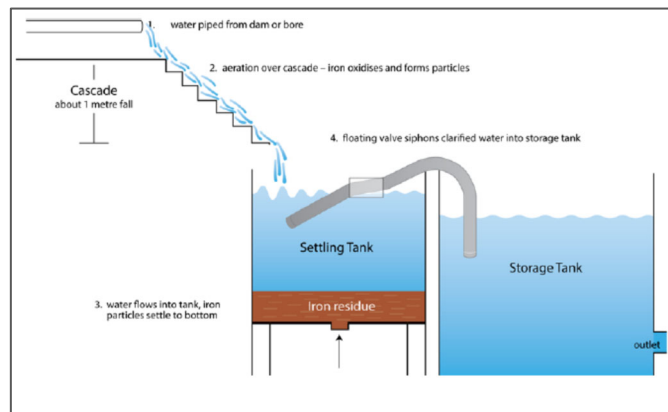
**Duplex basket strainers
(strainer mesh must be smaller
than spray jet orifice) or 'Y'
strainer (PSF Equipment)**



**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

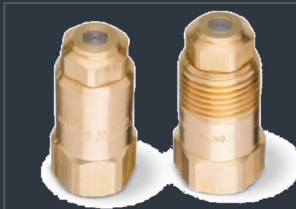
Airborne dust suppression (Lower volumes/higher pressure > 50bar)

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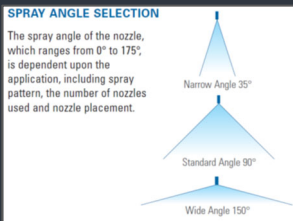
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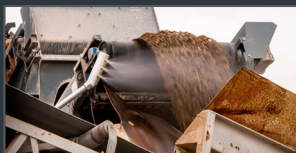
Hydraulic fine spray nozzles – brass (Spraying Systems Co.)



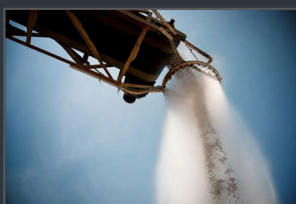
Flat spray hydraulic nozzles (Spraying Systems Co.)



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.)**