



PUGET SOUND
AIR POLLUTION
CONTROL AGENCY

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Subject: Guidelines for Control of Air
Pollution From Rock Processing

Gentlemen:

The enclosed guidelines incorporate reasonable precautions in the available control technology to enable rock crushing installations to comply with Regulation I. Members of the rock crushing industry, the Environmental Protection Agency and the Mid-Willamette Valley Air Pollution Authority helped to formulate them. These conditions will be used by engineers and inspectors of this Agency in evaluating whether such equipment meets the requirements of Regulation I.

Yours truly,

A. R. Dammkoehler
Air Pollution Control Officer

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GUIDELINES FOR CONTROL OF AIR POLLUTION FROM ROCK PROCESSING

Air pollution from rock processing equipment and adjacent roads must be controlled so as to meet the requirements of Regulation I, including Sections 9.03, 9.04, 9.09, 9.11, 9.12 and 9.15. Pursuant to Sections 9.12 and 9.15 of Regulation I the Control Officer has established the following control measures as reasonable requirements and precautions to prevent particulate matter from becoming airborne:

ROCK PROCESSING - CONTROL MEASURES

1. Hooding of dust emission points on belts, transfer points and crushers and ducting the collected air to a baghouse or water scrubber, or
2. Application of a water or chemical mist near emission points, (a pressure above 90 pounds per square inch and special nozzles may be required to produce a mist that is both effective and yet not cause plugging of screens), or
3. A combination of 1 and 2 (as shown in Figure 3), or
4. Other control measures such as enclosure which comply with Regulation I.

Visible dust emissions from rock processing equipment are usually indicative of improper design or operation.

ROADS, PILES, TRUCK LOADING, AND ROCK DRILLS - CONTROL MEASURES

1. Dust coming from in-plant roads shall be controlled by paving, or surfacing treatment which will control both air pollution and mud carry out. A wheel wash system may be required to prevent mud carry out under some conditions.
2. Dust coming from fines piles shall be controlled by the use of a dust suppressant or by providing covering to prevent exposure to wind.
3. Dust coming from rock drills and truck loading shall be controlled by hooding or application of a mist.

NOTICE OF CONSTRUCTION REQUIRED

An approved Notice of Construction is required prior to the installation or alteration of rock processing and/or control equipment. The necessary Notice of Construction forms can be obtained by calling the Plan Review Section (344-7334).

MAINTENANCE AND HOUSEKEEPING

1. The spray system shall be protected from freezing during cold weather by insulation or a change in spray feed formulation.
2. Fugitive dust shall be controlled by good housekeeping, including, but not limited to, the following:
 - a. Sweeping and flushing of paved roads.
 - b. Wetting or chemical coating of unpaved low traffic areas.
 - c. Chemical coating of exposed areas to prevent windblown dust.

CONTROL METHODS

Figure 1 shows the arrangement of atomizing nozzles which develop a flat mist spray pattern. The nozzles are placed on each end of a rubber shield to suppress dust emissions from the bottom of the crusher discharge. Two nozzles which form a cone shape mist spray are often used on the top of a crusher to control dust caused by crushing.

Figure 2 illustrates how a flat mist spray can be applied ahead of a transfer point to eliminate dust. The mist should be applied to the rock before the dust is airborne.

Figure 3 shows a combination mist and baghouse system for crushing plants. The baghouse is believed to be 99% efficient in reducing the emissions from a rock crusher.

Figure 4 shows a mist system for a rock crusher plant. The use of a wetting agent reduces the quantity of liquid required for effective control.

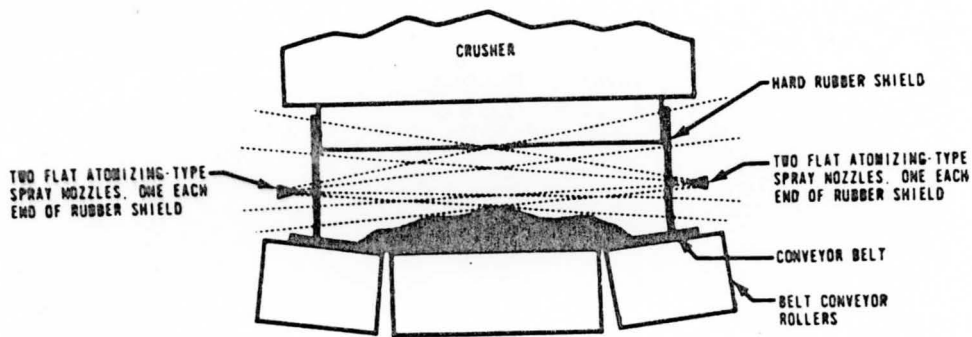


Figure 1. Nozzle arrangement for control of dust emissions upon discharge of crusher.*

*Air Pollution Engineering Manual. AP40, pp. 341

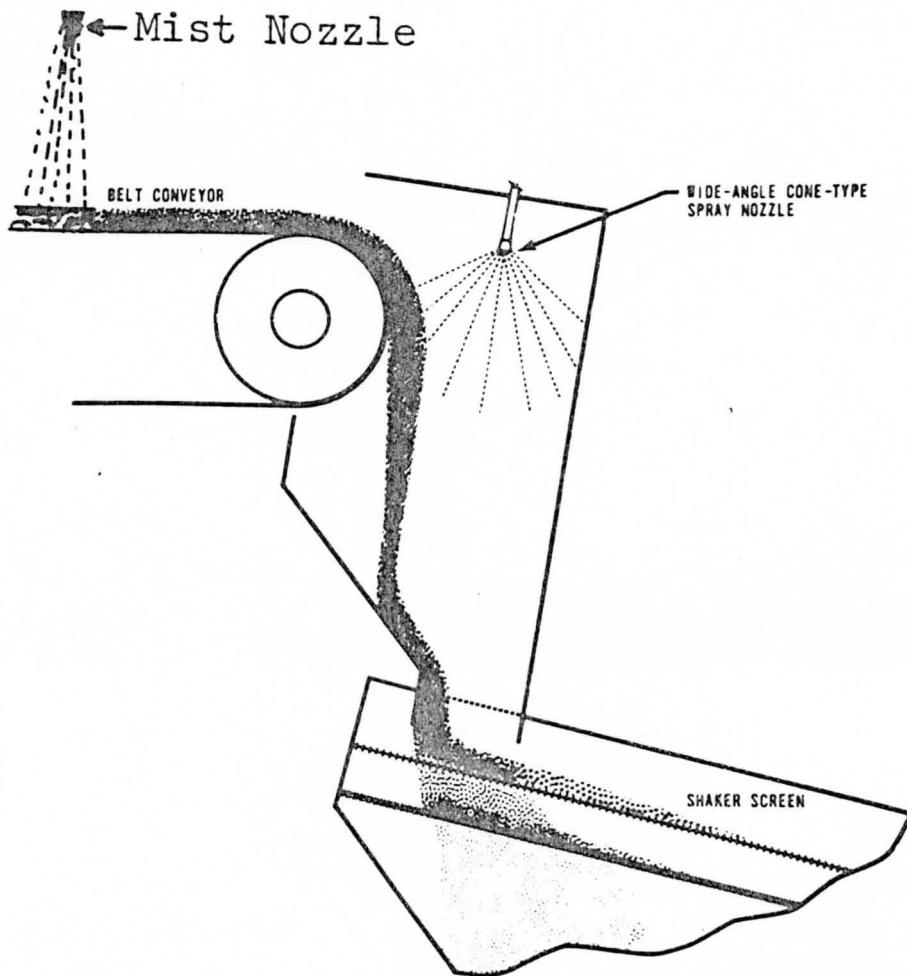
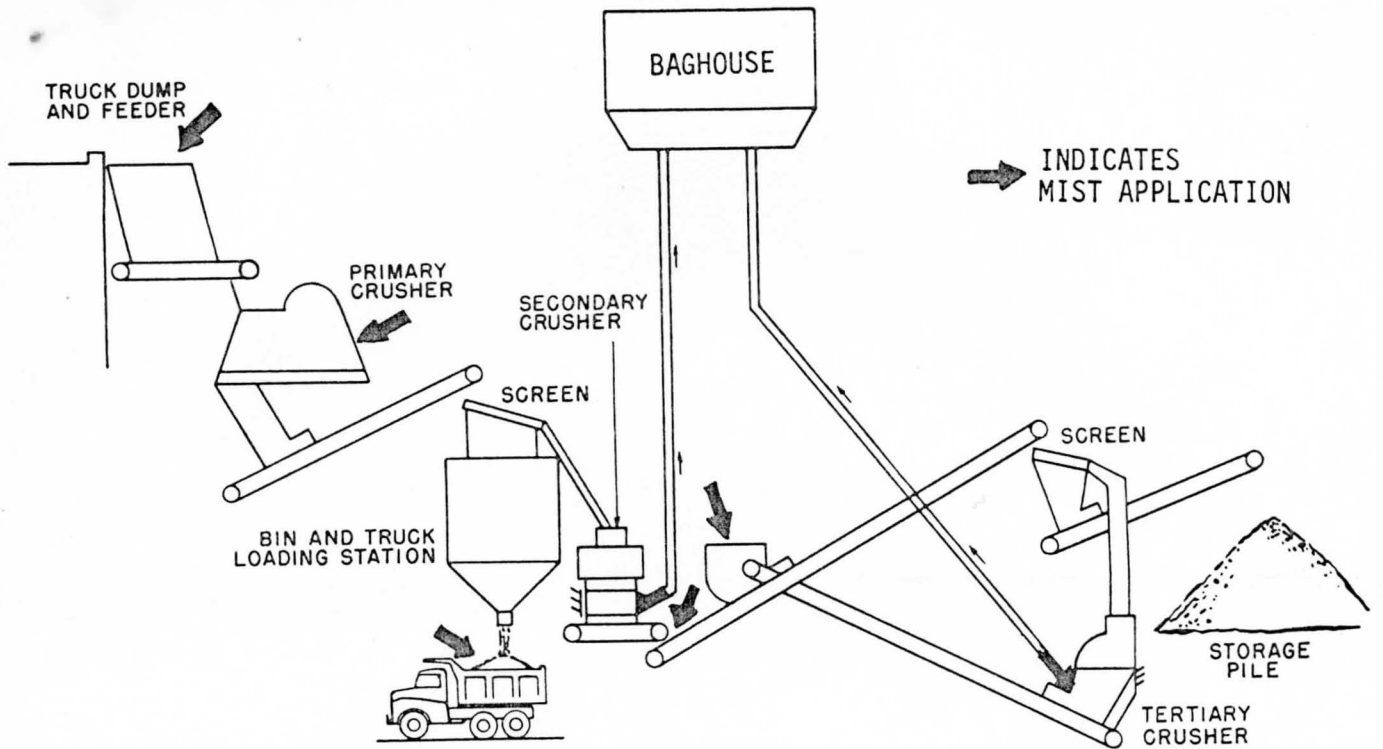


Figure 2. Nozzle arrangement for control of dust emissions from the inlet to the shaker screens.



TYPICAL COMBINATION MIST & BAGHOUSE SYSTEM FOR CRUSHING PLANTS

Figure 3

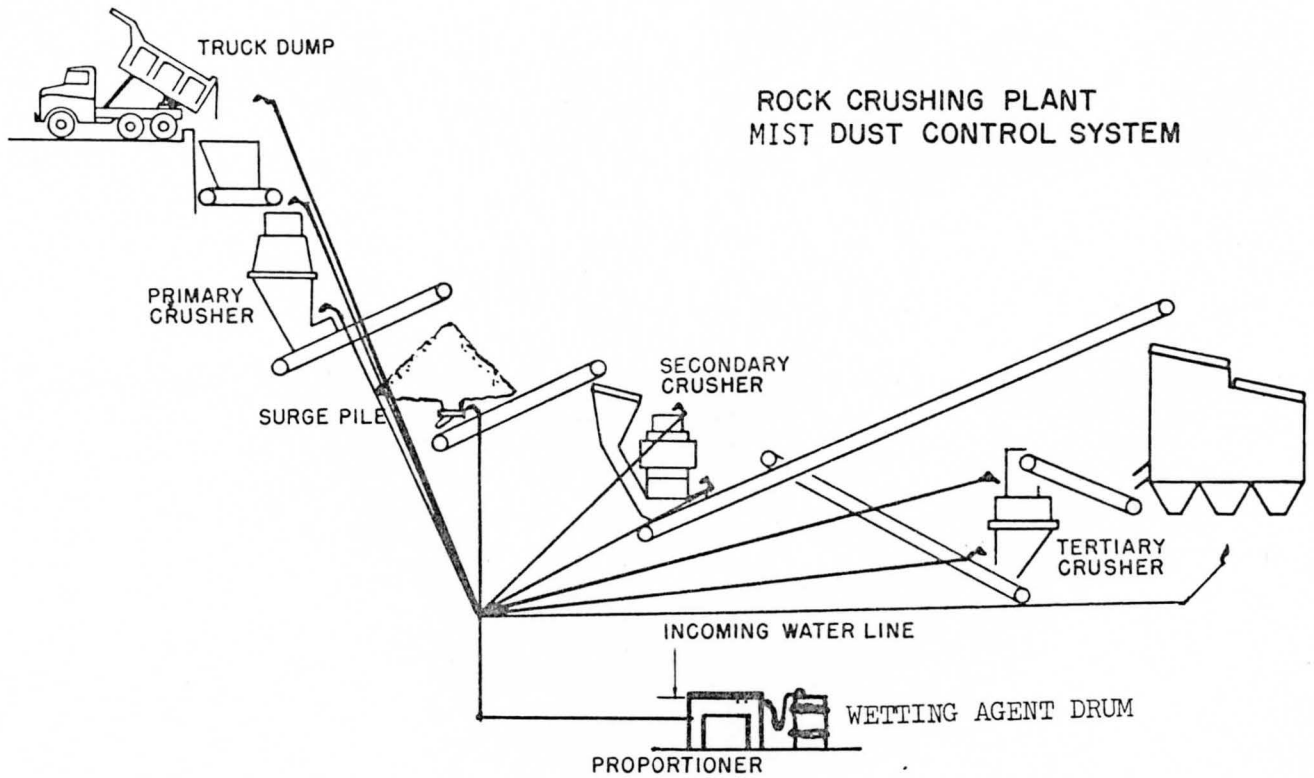


Figure 4