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# State of Montana

## State Board of Health

W. F. COGSWELL, EXECUTIVE OFFICER

HELENA, MONTANA

July 31, 1944

### MEMORANDUM

TO: Dr. W. F. Cogswell, Executive Officer

FROM: Division of Industrial Hygiene

SUBJECT: Universal Zonolite Company, Libby, Montana

PERSONS: Mr. John Meyers, General Manager

INTERVIEWED: Mr. R. J. Kujawa, Assistant Manager

DATES OF VISIT: July 21 and 22, 1944

This visit was made to follow up the study of the milling and loading processes made by Mr. Walworth in February of 1942. Since that time, the entire procedure and installations have been remodeled and greatly improved.

The vermiculite is mined by means of a power shovel in an open pit. There is only slight and intermittent exposure of the shovel and tram operators to any considerable quantity of dust. These conditions were not considered to present any undue health hazards and were not further studied.

In the milling process, the mineral is ground, screened, and graded. The material is damp when received at the mill, hence, it is dried in two oil-fired rotary kilns. The duct mentioned in the report of February 1942, is not used; therefore, the carbon monoxide hazard is no longer considered significant. The crushers and screens have been equipped with covers and exhaust ventilation which prevent the dust from these operations from escaping into the workroom atmosphere. The dust is trapped in cyclone separators and reclaimed.

Only a few changes remain to be made to complete the remodeling of the mill. A larger exhaust fan is to be installed in order to increase the exhaust velocity at several critical points. The tailings discharge was creating the greatest quantity of dust at the time of the visit. This is one of the critical points at which control ventilation is to be increased.

Two samples for dust in the general workroom atmosphere were taken by means of the midjet impinger using water as the trapping fluid. The dust counts thus found are reported in the following table:

Dust Counts - 7/21/44

| Sample No. | Location & Remarks                                                          | Million particles per cubic foot |
|------------|-----------------------------------------------------------------------------|----------------------------------|
| 1          | General air sample taken while walking about the first floor for 5 minutes. | 10                               |
| 2          | Same as Sample #1 only taken on the second floor.                           | 20                               |

The dust at this plant is quite low in silica and is considered more of a nuisance dust; therefore, the maximum allowable concentration is considered to be 50 million particles per cubic foot of air. The two samples taken show concentrations well below this limit. When the mill building has been made weather tight and the additional exhaust has been installed, the dust concentrations will be still lower. With reasonable maintenance of these facilities, no dust hazard will exist from the milling operations.

The workman who loads the cable-cars for tramming the bulk product to the truck loading dock is exposed intermittently to excessive concentrations of dust. Adequate protection is provided by a respirator. This respirator is of an approved type.

The loading of bulk material into box-cars was found to be the most hazardous operation in 1942. The method of loading the cars has been drastically changed so that now the loading operator need not expose himself to the dust except on rare occasions. This operation is now considered safe.

There is no dust hazard of significance in the expanding plant.

CONCLUSIONS

Proper and adequate means of controlling the dust have been or are in the process of being installed at all necessary points. Reasonable maintenance and use of these means of control will prevent any health hazard due to excessive dust concentrations from arising.

Respectfully submitted,

Dohrman H. Byers, Director  
Division of Industrial Hygiene

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