

ASARCO

PLAINTIFF'S
EXHIBIT

ASA-169

Department of Environmental Sciences

Mr. D. J. Carter

Manager

September 1, 1978

Mr. E. A. Farrell
New York Office

As per our telephone conversation of this date, I am enclosing a copy of an abstract of a paper which Mr. M. Ross will be presenting this fall in Canada. I spent several hours discussing the asbestos situation with Mr. Ross and have found him to be an honest and realistic person. I trust you will find his views enlightening.

I looked through the abstracts and found that Dr. Clark Cooper had also discussed asbestos cement pipe and exposures to workers cutting and machining the pipe. For your information, I am enclosing copies of the abstracts for both Dr. Cooper's and Dr. Enterline's papers.

I appreciate your acquisition of information pertaining to the best available vacuum equipment for cleaning up asbestos fibers.



Lowell D. White, Ph.D.
Environmental Scientists

LDW/ss
Enclosures

cc: KWNelson (w/encl)
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ASBESTOS HEALTH RISKS TO THE
MINING COMMUNITIES OF NORTH AMERICA

by

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ABSTRACT

Mesothelioma, a cancer of the pleura and peritoneum, occurs, with few exceptions, only in asbestos "trades" workers (shipyard insulation, textiles, construction, etc.) and in South African crocidolite miners. Lung cancer is seldom found in non-smoking asbestos "trades" workers. The percent mortality for lung cancer and mesothelioma is plotted for 11 groups of "trades" workers. Regression analysis of these data points shows a linear relationship between lung cancer and mesothelioma incidence; 79% of the variance ($\bar{r}^2$) of lung cancer is accounted for by mesothelioma. A large part of the remaining 21% variance can be accounted for by intergroup differences in smoking statistics. Cancer mortalities are also plotted for adult male populations of six nations and for 6 "asbestos" mining/factory populations not exposed to crocidolite. The very low incidence of mesothelioma in these groups shows that they do not have the cancer risk experienced by those in the "trades"; their lung cancer incidence is generally accounted for by smoking habits alone. Cancer risk to those in the "trades" is attributed to exposure to both smoke and crocidolite. There is no evidence that the mineral dust levels presently maintained in responsibly operated mines of North America cause increased incidence of lung cancer or mesothelioma, including those mines that process rock containing the commercial forms of asbestos: anthophyllite, tremolite, actinolite, cummingtonite, grunerite, and chrysotile.

* Approved by the Director, U.S. Geological Survey. For presentation at the annual meeting of the Geological Society of America, Toronto, Canada, October 23-26, 1978.

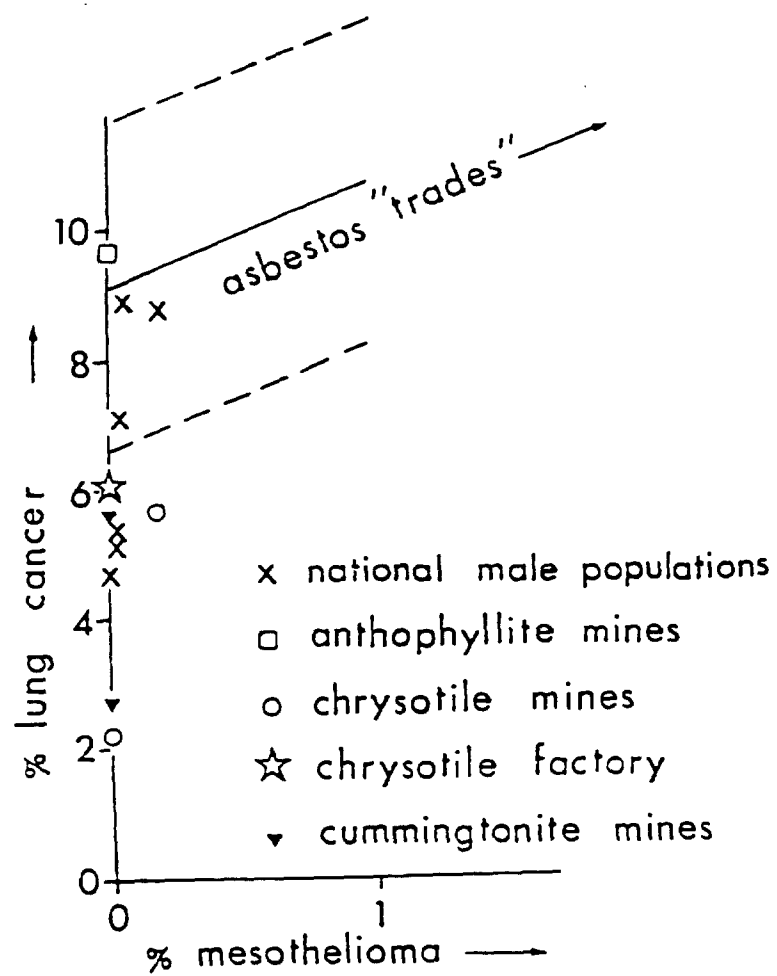


Table 3. Cancer mortality for men working in five mines and one chrysotile processing factory.

Ref.	Mineral	Operation	Locality	No. men	No. deaths	% lung cancer	% mesothelioma
9.	chrysotile	mining-milling	Italy	1098	270	2.2 (6)	0
10.	chrysotile	mining-milling	Quebec	10,951	3538	5.7 (224)	0.18 (7)
11.	anthophyllite	mining-milling	Finland	900	216	9.7 (21)	0
12.	cummingtonite	gold mining	S. Dakota	1321	631	2.7 (17)	0
13.	cummingtonite	iron mining	Minnesota	-	177	5.6 (10)	0
14.	chrysotile	factory	U.S.A.	264	66	6.1 (4)	0

Totals 14,534 5298 5.3 (282) 0.13(7)

Table 4. Cancer mortality for men over 20 years of age from 1961 to 1976 in the general population of the Zürich region of Switzerland (Ref. 15).

Deaths	% lung cancer	% mesothelioma
28110	8.8 (2466)	0.18 (51)

10. McDonald, J.C., and Becklake, M.R. Asbestos-related disease in Canada. Hefte z. Unfallheilkunde, 126, 2. Deutsch-Österreichisch-Schweizerische, Unfalltagung in Berlin 1975, Springer-Verlag, Berlin, 521-535 (1976).
11. Meurman, L.O., Kiviluoto, R., and Hakama, M. Mortality and morbidity among the working population of anthophyllite asbestos miners in Finland. Brit. J. Ind. Med. 31, 105-112 (1974).
12. McDonald, J.C., Gibbs, G.W., Liddell, F.D.K., and McDonald, A.D. Mortality after long exposure to cummingtonite-grunerite (abs.), Am. Rev. Resp. Disease, Supp., 115, no. 4, p. 230 (1977).
13. In comments by Ian Higgins, M.D., F.R.C.P. on the Proposed Rules on: Identification, classification and regulation of toxic substances posing a potential occupational carcinogenic risk by the Occupational Safety and Health Administration, Department of Labor, February 24, 1978.

To: OSHA Division of Consumer Affairs, Docket No. H-090, Room N1635,
U.S. Department of Labor, Third Street and Constitution Avenue
NW, Washington, D.C. 20210.
14. Weiss, William. Mortality of a cohort exposed to chrysotile asbestos. J. Occup. Med., 19, 737-740 (1977).
15. Rüttner, J.R., in Proceedings of Asbestos Symposium, Johannesburg, South Africa, October 3-7, 1977, Dept. of Mines, S. Africa, p. 86-89 (1977).