



STANFORD UNIVERSITY MEDICAL CENTER

STANFORD, CALIFORNIA 94305 • (415) 521-1200

JUN 3 1969

May 21, 1969

STANFORD UNIVERSITY SCHOOL OF MEDICINE
Department of Genetics

→ *McC: Fred Singer*

Mr. W. F. Schoen
Sinclair Research Inc.
400 East Sibley Boulevard
Harvey, Illinois 60426

Dear Mr. Schoen,

My own eyeballing on the Ni load. If it behaves quite like Pb, where 750 ppm gasoline engenders 40 mcg/m³, 2.5 ppm Ni will generate 0.13 mcg/m³ in freeway air.

*A conservative figure
see Tech. Env. Health
14: 589-593 1967.*

*the level used.
Ni(CO)₄ would probably
be more persistent.*

*NADCA
Air quality data.**

NYC (1966) reported .118 already; (cf Arizona, .0006). Chemical form?

Lung cancer in rats can be obtained with chronic exposure to 1.9mg/year Ni as carbonyl. 0.13mcg x 365 x 20m³/day comes out to an inhalation level of only .95mg per year; but we have very little data on dose-effect statistics or how to translate quantitatively from rats to man. Other (insoluble) forms of Ni are also known to be carcinogenic. Unlike many other speculative alarms, Ni is an undoubted carcinogen in man.

I agree that very much hangs on the chemical form in which Ni is emitted. Do you doubt that most of it must eventually come out? In what form?

I haven't checked the latest estimates, but recall that about 3.5 x 10¹¹ g Ni is supposed to fall in per year, from meteorites. A year's worth throughout the atmosphere then comes to .08mcg/m³, which must mean that most of this is not finely dispersed, or we would see more in Arizona.

(i.e. residue times (year))

Thank you for the information you communicated over the phone. I hope you can communicate some sense of urgency to your management about the potential scope of this problem. I would not offhand believe that an unnamed consultant without benefit of much wider critical judgements begins to meet the public interest; but I realize we do not have many established norms for appropriate responsibility in this field.

Sincerely yours,

Joshua Lederberg
Professor of Genetics

** See Sunderman*

in Dis. West, 54: 41-48

JL/rr

12/68 for excellent review.

*Fred
what is the
best figure
now?*