

TO	E.C. Martinelli	FIELD POINT OR DEPT. & BLDG. NO.	Pedricktown	DATE YOUR LETTER
FROM	T.S. Bialke	FIELD POINT OR DEPT. & BLDG. NO.	Akron - D/0020, 5-H	DATE THIS LETTER
SUBJECT				6-29-78

INDUSTRIAL HYGIENE SURVEY

On April 18-20, 1978, an industrial hygiene survey was conducted at the Chemical Division's Pedricktown plant. Attached are recommendations arising out of this survey together with a discussion of the findings.

The plant has developed detailed plans to abate an OSHA noise citation. Close liason must be maintained with other BFG plants who have received similar citations to avoid repetition of errors.

In conjunction with the noise abatement plan, proposals to reduce toxic dust exposures in compounding areas have been developed. Both plans should be implemented as rapidly as possible.

T.S. Bialke
T. S. Bialke

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RECOMMENDATIONS:

1. Compounding Areas

- a. Initiate a program for instructing employees as to the importance of personal hygiene in order to reduce lead exposures.
- b. Prevent employees whose work clothes may be contaminated with lead from wearing such clothing home.
- c. Instruct employees handling toxic pigments regarding proper handling of such materials.
- d. Conduct short-term task monitoring for toxic dust to identify peak exposures and effectiveness of control strategies.
- e. Proceed with plans to control toxic dust exposures as outlined in the April 5, 1978 letter from J.W. Goetsch to E.C. Martinelli as rapidly as possible.

2. Noise

- a. Monitor effectiveness of noise abatement plan implementation by obtaining noise dosimeter readings on affected employees at least every three months, or after the installation of any noise control.
- b. Follow up on Environmental Technology Corporation's reports by asking the Dispensary to review the results with the employee named in the report to ensure that elements of the BFG Hearing Conservation Program are being followed.
- c. Supply the Dispensary with results of audiodosimeter testing so that the audiodosimeter readings can be compared with audiometric exams.

3. Latex Building - Conduct short-term task monitoring for acrylonitrile (AN) to establish ceiling exposures.

4. Respirator Program - Provide for ongoing review of the respirator program by placing one individual to be totally responsible for its maintenance and enforcement. Provide for periodic review of the serviceability and cleanliness of all respirators by the program manager.

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DISCUSSION:

The program the plant has proposed detailing steps to reduce exposure to toxic dust in the compounding areas is thorough and concise. I encourage plant management to proceed with the program as rapidly as possible.

The importance of the individual in maintaining the status of his/her own health and reducing individual exposures to toxic compounds cannot be overemphasized. Employees must be instructed via ongoing training programs of the importance of personal hygiene and proper handling techniques in reducing toxic dust exposures. Plans for such instruction are to be encouraged and implemented as soon as possible.

Table III lists results of air sampling for lead dust during two methods of pigment weighing; however, few conclusions can be drawn from the data as different pigments were weighed. The new weighing method, thought to be less dusty, turned out to produce more lead dust. This is because the pigment weighed during this new method was much more finely divided and thus more easily airborne. One conclusion can still be reached and that is if the method was used for a longer time period, it still would not eliminate the exposure. Further monitoring for toxic dust should be conducted during different weighing tasks.

The plant has a policy which prohibits employees from taking or wearing work clothing home. This policy needs to be strictly enforced. There have been instances of chemical poisoning in family members due to substances carried home on the clothing of the worker. Our policy is designed to prevent this from happening.

Proposals to abate noise in the compounding areas look good. Close communication should be maintained with Avon Lake Chemical as they have the most experience with abatement of similar noise sources. The progress of all noise control installations must not only be monitored by sound level readings, but also by periodic audiodosimeter measurements on affected employees after completion of any segment of the noise abatement project. This is the best way to monitor the effectiveness of noise controls.

Currently the Environmental Technology Corporation's evaluation of audiodosimeter examinations is being followed up by a questionnaire prepared by the plant nurse and administered by the lead technician. This document asks questions concerning the degree of noise exposure, size and fitting of ear plugs and effectiveness of ear plugs. Such questions and others should not be left up to the lead technician on a simple questionnaire. I have no doubt that Pedricktown's lead technicians are competent individuals; however, noise exposure, its effects, selection and proper fitting of protective devices, etc. require the expertise of professional medical or safety personnel.

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DISCUSSION (con't)

All follow-ups to the ETC reports must be conducted by interviewing the affected employee on a one-to-one counseling basis to assure that the individual understands the importance of hearing conservation. To assist in the evaluation of an employee's audiometric test results, dosimeter readings of such results should be supplied to the Dispensary.

Table I contains the results of air monitoring for acrylonitrile and acrylates (ethyl acrylate and methyl methacrylate) obtained during latex manufacturing. All acrylate concentrations were well below current published standards. All AN levels were found to be below the Emergency Temporary Standard (ETS) issued by OSHA. If the time weighted average (TWA) for AN in the permanent standard remains unchanged from the ETS, little further action is necessary on the part of Pedricktown because all determinations are below the 1 ppm action level. The only action that will be necessary is to document that all job classes exposed to AN are below the 1 ppm action level. This can be accomplished by representative sampling. If no TWA's are above the 1 ppm action level, no further sampling or medical surveillance is necessary. If the final standard is lowered, further sampling, medical surveillance and controls will be required.

Many respirators are used in the Pedricktown plant. Some were found to be soiled with parts that needed replacement. Pedricktown has a good written respirator program; however, the program needs to be maintained within the plant. One individual should be assigned the responsibility to assure that the program is implemented as written.

Table II contains the results of air sampling for vinyl chloride in the poly building and mass resin area. As can be seen, one exposure was above 1 ppm. This was due to a leak which the worker was repairing. He was wearing a respirator.

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TABLE I.

ACRYLONITRILE-ACRYLATE PERSONNEL SAMPLING RESULTS
PEDRICKTOWN - APRIL 18-20, 1978

LATEX BUILDING

<u>Name</u>	<u>Operation</u>	<u>Sample time (min.)</u>	<u>Concentration (ppm)</u>	
			<u>Acrylonitrile</u>	<u>Acrylates*</u>
J. Burke	Sock Changing	480	0.9	0.6
A. Jackson	Charge Man	480	0.1	<0.1
H. Hoffman	Mechanic Helper	240	<0.2	<0.1
D. Lawler	Poly Cleaning	480	0.8	1.7
	Sock Changing	480	0.5	0.3
R. Gardenshire	Charge Man	480	<0.2	<0.1
J. Burke	Sock Changing	378	<0.1	<0.1
General Air	Latex Office Bldg.	480	0.1	<0.1

* Lab was unable to separate methyl methacrylates from ethyl acrylates; therefore both reported under "Acrylates".

TLV - Acrylonitrile (ETS) 2 ppm
 Methyl methacrylate 100 ppm
 Ethyl acrylate (skin) 25 ppm

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TABLE II.

VINYL CHLORIDE SAMPLING RESULTS
PEDRICKTOWN - APRIL 18-20, 1978

<u>Name</u>	<u>Location</u>	<u>Sample Time (min.)</u>	<u>Vinyl Chloride (ppm)</u>
C. Coleman *	Poly Bldg.	373	1.3
T. Worrell	Poly Bldg.	370	<0.1
J. Apostoli	Mass Resin	365	<0.1
A. Garlic	Mass Resin	353	0.6

* Respirator worn during valve repair.

TABLE III.

LEAD DUST SAMPLING RESULTS

<u>Name</u>	<u>Location</u>	<u>Sample Time (min.)</u>	<u>Lead Conc. (mg/M³)</u>
L. Fisher *	Compounding - old method	87	0.43
L. Fisher *	Compounding - new method	19	2.8
L. Fisher	PVC Mixing	162	0.08

* Toxic dust respirator worn during operations.

8-hr. TLV = 0.15 mg/M³

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November 22, 1976

TO: A.R. WEBER
PEDRICKTOWN PLANT

Attached is the report of Mr. R.B. Nash's Industrial Hygiene Survey of the Pedricktown plant. I would appreciate being advised of his recommendations.

Air sampling studies for exposure to chromium at quench tanks using treated cooling water have confirmed the presence of the contaminant and raise the possibility of significant employee exposures in terms of compliance with proposed OSHA standards for chromium. The source of chromium is due to the use of Nalco 460 (sodium-potassium chromate) as a corrosion inhibitor in the cooling water. By definition the chromium compound is non-carcinogenic for purposes of regulatory control. Measured exposures on a time weighted average basis, were well below recommended air quality limits (25 ug/M³). Short term exposure limits (15 minutes) are limited to less than 50 ug/M³. Although measured exposures to the operator were below recommended air quality limits the potential for a more significant exposure, especially the short term limit, remains a distinct possibility. Inherent in the OSHA proposal for chromium is the action level concept which is established for one half of the permissible exposure limit. For now it is recommended that an alternative water source be used for the operation that was investigated. If treated, cooling water must be used; steps should be taken to keep the vapors at the tanks away from occupied areas and to prevent employees from being exposed. A replacement of the chromium chemical might also be considered.

Please contact me if you have any questions concerning this report.

E.B. Katzenmeyer, Jr.
E.B. Katzenmeyer, Jr.
Manager, Industrial Hygiene

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cc: E.W. Harrington
W.C. Holbrook/K.J. Kaminski
R.A. Kelley
H. Waltemate

Attachment:

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