

To: H. Gaffney

Date: May 5, 1982

Location: Chicago

MAY 12 1982

Copy to: J. C. Caporossi - NA

From: N. D. Yin

A. C. Bell - NA

C. A. Petersen - NA

Location: Wayne

Subject: LEAD AND NOISE RESULTS, 1st Quarter, 1982

Reference:

The first quarter lead monitoring was completed. At this time, repeated measuring of noise levels and lead levels in food and noise measurements are being made. Results will be reported separately.

A special test was conducted on April 21, 1982. This was a test of lead levels in food and noise measurements. This was done by measuring the amount of lead retained by a finger after pressing on a workbench.

furthermore, consumed with the food. Additionally, a finger-tip test was also conducted. This was done by measuring the amount of lead retained by a finger after pressing on a workbench.

Discussion and Recommendations

I. Lead Exposure

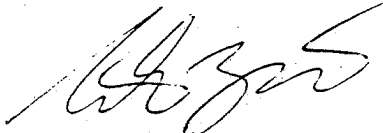
- a. The average of air lead seems to drop considerably as comparing with previous results. (Table A-4 and A-8).
- b. Wipe samples results indicated the lead contamination in the lunchroom reduced significantly. However, following areas are still considered having relative high lead and need to be cleaned thoroughly. These areas are:
 1. Lunchroom - Top of drinking fountain and bench chair.
 2. Office - Mr. Gaffney and Kathy's desk.
- c. On Table A-6, results indicated that, after washing, the amount of lead carried by the employees' hands is minimum. This proves that the personal hygiene practice is a top priority rule to prevent the ingestion of lead. In addition, finger-tip test showed that, with the finger tip skin surface of $\frac{1}{2}$ sq. in., it could retain about 600 ug of lead, which equals to approximately 1.14 ug/dl of blood lead if swallowed by a normal person (Table A-6,7). This means that if an individual accidentally puts his finger into his mouth everyday, by the end of the month he will have 34 ug/dl of additional blood lead in his body.

II. Noise Exposure

Although the average personal noise level was lower than before (my I.H. survey report, September 14, 1981), without hearing protection, 43% of employees' exposures were over the action level of 85 dBA (TWA). By using the Bilsom "soft ear" protector, the employee's exposures should be in compliance with OSHA noise limit.

Implementation of the hearing conservation program is still required, as:

- a. Establish baseline audiogram by August 22, 1982.
- b. Ensure that hearing protectors are worn by affected employees.
- c. Provide noise training, etc.



N. D. Yin

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4/9742M-2

Attach.

CYWI 3-000786

TABLE A-1

Results of Lead Sampling in Chicago Plant
2nd Shift

<u>Name</u>	<u>Job</u>	<u>Date</u>	<u>Time</u>	<u>Air Volume (1)</u>	<u>Results (mg/M³)</u>	<u>8-hr TWA Exposure (mg/M³)</u>
R. Thompson	Foreman	3/16/82	1605-2022	384	0.33	1.53
			2022-2352	315	3.09	
			(466 mins)			
C. Davis	P. O. 800	3/16/82	1615-2035	390	1.72	1.47
			2035-2350	293	1.34	
			(455 mins)			
G. Dabbs	Litharge Opr.	3/16/82	1619-2035	384	1.27	1.37
			2035-2357	303	1.65	
			(458 mins)			

Average 1.46

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TABLE A-2

Results of Lead Sampling in Chicago Plant
3rd Shift

<u>Name</u>	<u>Job</u>	<u>Date</u>	<u>Time</u>	<u>Air Volume (1)</u>	<u>Results (mg/M³)</u>	<u>8-hr TWA Exposure (mg/M³)</u>
E. Gross	Litharge Opr.	3/16/82	0005-0355	345	2.14	2.23
			0355-0756 (471 mins)	362	2.40	
E. Mayes	Foreman	3/16/82	0010-0405	353	1.84	1.47
			0405-0742 (452 mins)	326	1.26	
J. Jones	P. O. 800	3/16/82	0014-0408	351	1.34	0.74
			0408-0740 (446 mins)	318	0.19	

Average 1.48

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TABLE A-3

Results of Lead Sampling in Chicago Plant
1st Shift

<u>Name</u>	<u>Job</u>	<u>Date</u>	<u>Time</u>	<u>Air Volume (1)</u>	<u>Results (mg/M³)</u>	<u>8-hr TWA Exposure (mg/M³)</u>
S. Tate	Blender/ Packer	3/18/82	0915-1205	252	0.58	0.52
			1205-1540 (385 mins)	318	0.72	
F. Powers	Warehouseman	3/18/82	0922-1200	233	0.37	0.20
			1200-1601 (399 mins)	357	0.15	
J. Hodge	Litharge Opr.	3/18/82	0924-1202	234	1.84	1.05
			1202-1549 (385 mins)	336	0.93	
G. Burton	Janitor	3/18/82	0929-1156	215	0.21	0.34
			1156-1559 (388 mins)	360	0.55	
W. Bell	P. O. 800	3/18/82	0937-1210	226	0.39	1.24
			1210-1555 (378 mins)	333	2.39	
C. Hopkins	Maintenance Opr.	3/18/82	0940-1154	198	2.01	0.87
			1154-1547 (367 mins)	348	0.64	
W. Lee	Maintenance	3/18/82	0947-1155	189	1.31	0.62
			1155-1545 (358 mins)	340	0.56	
A. Howard	Foreman	3/18/82	1017-1215	175	1.62	0.89
			1215-1552 (335 mins)	321	1.08	
L. Maye	Day Super- visor	3/18/82	1030-1158	130	0.20	0.16
			1158-1504 (274 mins)	275	0.31	

Average 0.654

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TABLE A-4

Summary of Lead Exposures by Job
(1st Quarter 1982)

<u>Job</u>	<u>Name/Work Shift</u>	<u>8-hr TWA Exposure (mg/M³)</u>
Process Opr.	W. Bell (1st Shift)	1.24
	J. Jones (2nd ")	0.74
	C. Davis (3rd ")	1.47
	Average	1.15
Litharge Opr.	J. Hodge (1st Shift)	1.05
	G. Dabbs (2nd ")	1.37
	E. Cross (3rd ")	2.23
	Average	1.55
Foreman	L. Maye (1st Shift)	0.16
	A. Howard (1st ")	0.89
	R. Thompson (2nd ")	1.53
	E. Maye (3rd ")	1.47
	Average	1.01
Maintenance	C. Hopkins (1st Shift)	0.87
	W. Lee (1st ")	0.62
	Average	0.75
Warehouseman	F. Powers (1st Shift)	0.20
Janitor	G. Burton (1st Shift)	0.34
Blender/Packer	S. Tate (1st Shift)	0.52
Plant Employees' Overall Average		0.789

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TABLE A-5

Wipe Sample Results

<u>Location</u>	<u>Lead (Micrograms)</u>	
	<u>Present</u>	<u>Past</u>
A. LUNCHROOM - March 18, 1982		
1. On the corner of the eating table, facing the entrance	2.7	39.5
2. On top of drinking fountain	115	312.3
3. Handle of refrigerator	37.7	95.2
4. On top of bench chair	185	381.8
5. Handle of the door	15.5	
6. Handle of oven	12.6	
7. Press-button of fountain	19.3	
8. On top of First Aid kit	80	219.9
9. Blank control (with D.I. H2O on filter)	0.1	
10. Blank control filter	0.1	
B. OFFICE AREA - March 19, 1982		
1. General office desk (vacant)	23.8	
2. On top of Jackie's desk	6.1	
3. On top of Kathy's desk	40.2	
4. On top of Mr. Gaffney's desk	59.5	

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TABLE A-6

Personal Wipe Sample ResultsApril 15, 1982. 11:30 a.m.Lead (Micrograms)

1. BEFORE WASHING

a.	C. Davis	Right Hand	152
		Left Hand	181
b.	J. Boyce	Right Hand	151
		Left Hand	152

2. AFTER WASHING

a.	C. Davis	Right Hand	6.0
		Left Hand	3.2
b.	J. Boyce	Right Hand	1.8
		Left Hand	4.6

3. FINGER-TIP TEST*

a.	Wrapped with filter	252
b.	Wiped by filter	687

* A finger was either wrapped with wet filter when pressing on the workbench or wiped by the wet filter after the pressing.

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TABLE A-7

For 600 ug of lead, assume 10/100 will be transferred into the blood, that is 60 ug.

Normal human with 70 kg weight has average of 5 kg blood,
which equals to 52.6 dl.

$$\text{dl} \times 0.95 = 100 \text{ g.}$$

Lead absorbed in the blood:

$$60 \text{ ug} / 52.6 \text{ dl} = 1.14 \text{ ug/dl}$$

Monthly absorption:

$$1.14 \text{ ug/dl} \times 30 \text{ days} = 34.2 \text{ ug/dl - month.}$$

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