

CAMBRIDGE

To: J. Ashworth/Phoenix Date: 17 September 1986
From: M. S. Cowan cc: F. W. Eaton
L. K. Park
S. Venuti
T. E. Winkel/Santa Ana
J. W. Wolter
W. R. Wright

Subject: Industrial Hygiene Survey

On 11 August 1986 I conducted an Industrial Hygiene Survey at the Phoenix plant. The results are discussed below.

Air Sampling - Fiber

The air sampling results indicate that employee asbestos exposure is below the OSHA Permissible Exposure Limit (PEL) of 0.2 fibers/cc for an 8-hour Time-Weighted Average (TWA). The exposure of one employee is above the "Action Level" exposure limit of 0.1 fibers/cc for an 8-hour TWA. A visit will be scheduled in the near future to re-test employees for asbestos exposure.

<u>Employee</u>	<u>Job</u>	<u>Ore</u>	<u>8-Hour TWA</u>
Peter Baldenegro	D-18 Bagger	L-3	0.096 f/cc
T. J. Martin	Shift Leader/Forklift Driver	L-3	0.105 f/cc

The results of the engineering samples are also included.

We are now required to inform employees of the results of the fiber samples. Enclosed you will find a letter for you to post in the plant. We suggest that you keep the letter posted for two weeks and then file it for future reference.

Air Sampling - Total Dust

The results of the personnel total dust sampling are below the American Conference of Governmental Industrial Hygienists (ACGIH) recommended Threshold Limit Value (TLV) and Grace Internal Limit (GIL) of 10 mg/m³ for an 8-hour TWA.

<u>Employee</u>	<u>Job</u>	<u>8-Hour TWA</u>
Bruce Vinson	Monokote Mixer/Bagger	4.992 mg/m ³
Chris Vinson	Monokote Bagger/Mixer	3.538 mg/m ³

10001156

Noise Monitoring

Both employee noise dosimetry and area sound level readings were done at Phoenix. The results of the personnel and area noise dosimetry are indicated below and on the attached sheet.

<u>Employee</u>	<u>Job</u>	<u>8-Hour TWA (dBA)</u>
Bruce Vinson	Monokote Mixer	88.7
Chris Vinson	Monokote Bagger	88.4
Peter Baldenegro	D-18 Bagger	87.0

The noise monitoring was done using an 80 dB threshold. An exposure above the 85 dBA "Action Level" with this threshold signals the need for a hearing conservation program to be in effect. All three employees monitored had 8-hour TWA's above the 80 dBA "Action Level"; therefore, the existing hearing conservation program must remain in effect.

Safety Survey

1. All trucks must have wheels chocked during loading and unloading operations.

M.S. Cowan
Michael S. Cowan (TET)

MSC/al

Attachments

C015

10001157

To: All Employees
From: J. W. Ashworth

Date: 17 September 1986

Subject: Air Sampling Results

The results of the air samples for fiber completed on 11 August 1986 by Health, Safety & Environmental Services are listed below. The present OSHA Permissible Exposure Limit is 0.2 fibers/cc of air for an 8-hour Time-Weighted Average (TWA).

<u>Employee</u>	<u>8-hour TWA (f/cc)</u>
1. P. Baldenegro	0.096 f/cc
2. T. J. Martin	0.105 f/cc

J. W. Ashworth
Plant Manager

Dates:

Posted _____

Removed _____

10001158

PHOENIX, ARIZONA

Sound Level Measurements

<u>Location</u>	<u>Distance (ft)</u>	<u>dBA</u>
Monokote mixing station	@ Operator's ear	89 - 90
D-18 bagging station	@ Operator's ear	81
Base of D-18 furnace	3'	90 - 91
D-18 stoner deck	3' - 5'	88
Monokote bagging station	@ Operator's ear	85
Monokote station	area	83
Forklift truck - operating	5'	86

8/12/86 M. S. Cowan
Scott 453A meter

10001159

GRACE

NOISE DOSIMETRY RECORD II

Health, Safety & Toxicology

Plant Location Phoenix, AZ

Date 8-11-86

Measurements by M. Cowan

EMPLOYEE NAME	Bruce Vinson	Chris Vinson	Peter Balderago
SOC. SEC. NO.	340-62-2084	334-52-9452	526-99-4490
JOB DESCRIPTION	Monokote Mixer/Bagger	Monokote Mixer/Bagger	N-18 Bagger
PROTECTIVE EQUIP.	3M 8710	None	3M 8710
DOSIMETER NO.	504985	504746	502280
CALIBRATION	PRE 0.120 POST 0.118	PRE 0.120 POST 0.117	PRE 0.117 POST 0.117
MIN. IN WORKDAY	480	480	480
TOTAL BREAK MIN.	30/30	30/30	30/30
DOSIMETER	ON 13 ³⁰ OFF 18 ³⁰	ON 13 ³⁰ OFF 18 ³⁰	ON 14 ⁵⁰ OFF 18 ³⁰
TOTAL TIME	300 min	300 min	220 min
(1) DOSE %	50.2	47.8	27.9
(1) L avg. (dB)			
(2) DOSE %			
(2) L avg. (dB)			
L max. (dB)			
TIME OF L max.			
PEAK L max. (1/16 sec.)			
PROJ. 8-hr DOSE			
TIME > 115 dB			
(1) 8-hr TWA (dB)	88.7	88.4	87.0
(2) 8-hr TWA (dB)			

GENRAD 1954-9710

Equipment: DuPont MK-2 dosimeter

Settings: (1) (2)

Threshold Level 80

Criterion level 90

Doubling Rate 5

Additional Comments Shift 1pm-9pm

10001160

C O N F I D E N T I A L

CONSTRUCTION

PRODUCTS

DIVISION

Report: 26444

Group: CPD Manufacturing

Date: 8/18/86

Charge No.: 1174

Requestor: [REDACTED]

Marketing or Manufacturing Approvals:

Name: T. E. Hamilton

Approved: TE Hamilton

REQUEST FOR TECHNICAL SERVICE

PROBLEM TITLE: Environmental Evaluation -- Air -- Fibrous Materials.

SIGNIFICANCE: The evaluation of workplace air on a periodic basis is necessary to comply with the air sampling section of the OSHA Asbestos Standard.

SPECIFIC OBJECTIVE: Determine fiber counts for filter media.

SUGGESTED APPROACH: Phase contrast microscopy.

DEADLINE (last day information will be of value): Two (2) weeks.

DETAILS OF PROBLEM: Please evaluate personnel sample numbers PHX-1 through PHX-7 from Phoenix, Az. Products and ores involved: L-3.

ACCEPTED BY RESEARCH DEPT.: Charles J. Anderson, Jr. DATE: 08/28/86

ASSIGNED TO: B. O'Leary, M. Conely

10001161

ADDITIONAL COPIES: Original to Library; J. W. Wolter, R. J. Bettacchi, F. W. Eaton,
W. R. Wright, J. Yang, T. E. Hamilton

PAGE 2

REQUEST FOR TECHNICAL SERVICE

NUMBER: 76444

GROUP: CPD Manufacturing

ACTUAL COST: \$200.-

REPORTING DATE: 8/27/86

Summary & Results:

Seven Personnel samples were received from Phoenix, Arizona, and were evaluated for their fiber content.

The results are as shown on the attached Air Sampling Record Sheet.

Emily C. Onello/poc
Emily C. Onello

10001162

GRACE

AIR SAMPLING RECORD SHEET

HEALTH, SAFETY & TOXICOLOGY DEPT.

Plant Location Localix, AZ
 Division CP
 Sampling by W. W. W. W. Date 8/11/86
 Contaminant Particulates, Fiber

Weather Clear and hot
 Temperature 110°F
 Pressure 30.08" Hg
 Housekeeping Good

Type of Sampling: Personnel ☒ Engineering ☐
 Collection Media 0.5 u.d.t. Filter
 Pump (type & model) Urgest P-2500

Sample No.	Employee Name & Social Security No.	Personal Protective Equipment	Job Location and Description	Pump No.	CLOCK TIME			Flow Rate	Total Volume Sampled	f/ml Lab Evaluation
					On	Off	Total			
PHX-1	Peter Baldeneyre 526-44-4480	3M 8710	0-18 Bagger	46	13 ²⁰	14 ¹⁵	55		110	0.21
PHX-2	T. J. Martin 552-31-2315	None	Shift Leader / Forklift driver	51	13 ¹⁰	15 ¹⁰	20		60	0.15
PHX-3	Pete Baldeneyre	3M 8710	Same as PHX-1	46	14 ¹⁵	15 ¹⁰	55		110	0.07
PHX-4	T. J. Martin	None	Same as PHX-2	51	15 ¹⁰	15 ¹⁵	20		250	0.12
PHX-5	Peter Baldeneyre	3M 8710	Same as PHX-1	46	15 ¹⁰	17 ¹⁵	135		250	0.10
PHX-6	Pete Baldeneyre	3M 8710	Same as PHX-1	46	17 ¹⁰	18 ¹⁰	61	2.0	122	0.06
PHX-7	T. J. Martin	None	Same as PHX-2 (10 min break)	51	19 ¹⁵	18 ⁵⁵	55		106	0.05

Additional Comments Shift 1pm-9pm 0-18 / L-3 / Bulk Aggregate
 Laboratory Evaluation by Emily C. Onello / JKH
 Date 8/27/86
 10001163

C O N F I D E N T I A L

CONSTRUCTION

PRODUCTS

DIVISION

Report: 76445

Group: CPD Manufacturing

Date: 8/18/86

Charge No.: 1174

Requestor: [REDACTED]

Marketing or Manufacturing Approvals:

Name: T. E. Hamilton

Approved: T. E. Hamilton

REQUEST FOR TECHNICAL SERVICE

PROBLEM TITLE: Environmental Evaluation -- Air -- Fibrous Materials.

SIGNIFICANCE: The evaluation of workplace air on a periodic basis is necessary to comply with the air sampling section of the OSHA Asbestos Standard.

SPECIFIC OBJECTIVE: Determine fiber counts for filter media.

SUGGESTED APPROACH: Phase contrast microscopy.

DEADLINE (last day information will be of value): Two (2) weeks.

DETAILS OF PROBLEM: Please evaluate engineering sample numbers PHX-20 through PHX-23 from Phoenix, AZ.

Products and ores involved: L-3

ACCEPTED BY RESEARCH DEPT.: Charles L. Sanders, Jr. DATE: 08/28/86

ASSIGNED TO: B. O'Leary, M. Canete

10001164

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PAGE 2

REQUEST FOR TECHNICAL SERVICE

NUMBER: 76445
GROUP: CPD Manufacturing
ACTUAL COST: \$125.-
REPORTING DATE: 8/27/86

Summary & Results:

Four engineering samples were received from Phoenix, Arizona, and were evaluated for their fiber content.

The results are as shown on the attached Air Sampling Record Sheet.

Emily C. Onello / *BOC*
Emily C. Onello

10001165

GRACE

AIR SAMPLING RECORD SHEET

HEALTH, SAFETY & TOXICOLOGY DEPT.

Plant Location Phoenix, AZ
 Division CPD
 Sampling by M. Cowan Date 8-11-86
 Contaminant Asbestos Fiber

Weather Clear and Hot
 Temperature 110°F
 Pressure 30.08 Hg
 Housekeeping Good

Type of Sampling: Personnel Engineering
 Collection Media 0.8 µm HPL Membrane
 Pump (type & model) Digit A8500

Sample No.	Employee Name & Social Security No.	Personal Protective Equipment	Job Location and Description	Pump No.	CLOCK TIME			Flow Rate	Total Volume Sampled	g/ml. Lab Evaluation
					on	off	Total			
PHX-20	-----	N/A	Stoner Deck / SAFETY end	43	12 ⁰⁰	12 ⁵⁰	50	2.0	116	0.15
PHX-21	-----	↓	Stoner Deck / Waste end	40	12 ⁰⁰	12 ⁵⁰	50	2.0	116	0.09
PHX-22	-----	↓	Waste Rock Hopper	46	12 ⁰⁴	13 ⁰⁰	56	1.0	112	0.04
PHX-23	-----	↓	Warehouse Drop	51	12 ⁰¹	13 ⁰⁰	59	1.5	15	0.08

Additional Comments Shift 5am-1pm Model A/L-3 / Bulk Aggregate Laboratory Evaluation by Emily C. Ortollo/PHX
 Date 8/27/86 10001166

SEP 5 1986

C O N F I D E N T I A L

CONSTRUCTION

Report: 76446

PRODUCTS

Group: 1174

DIVISION

Date: 8/18/86

Charge No.: 1174

Requestor: [REDACTED]

Marketing or Manufacturing Approvals:

Name: T. E. Hamilton

Approved: T. E. Hamilton

REQUEST FOR TECHNICAL SERVICE

PROBLEM TITLE: Environmental Evaluation -- Air -- Fibrous Materials.

SIGNIFICANCE: The evaluation of workplace air on a periodic basis is necessary to comply with the air sampling section of the OSHA Asbestos Standard.

SPECIFIC OBJECTIVE: Determine fiber counts for filter media.

SUGGESTED APPROACH: Phase contrast microscopy.

DEADLINE (last day information will be of value): Two (2) weeks.

DETAILS OF PROBLEM: Please evaluate engineering sample numbers PHX-24 through PHX-27 from Phoenix, Az. Products and ores involved: L-3.

ACCEPTED BY RESEARCH DEPT. Charles R. Sanders, Jr. DATE: 08/28/86

ASSIGNED TO: B. O'Leary, M. Canete

10001167

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PAGE 2

REQUEST FOR TECHNICAL SERVICE

NUMBER: 76446
GROUP: CPD Manufacturing
ACTUAL COST: \$125.-
REPORTING DATE: 8/27/86

Summary & Results:

Four engineering samples were received from Phoenix, Arizona, and were evaluated for their fiber content.

The results are as shown on the attached Air Sampling Record Sheet.

Emily C. Onello/ BCL
Emily C. Onello

10001168

AIR SAMPLING RECORD SHEET

HEALTH, SAFETY & TOXICOLOGY DEPT.

Plant Location	Phoenix, AZ
Division	CCO

Weather Clear and hot
Temperature 103°F

Weather Clear and hot
Temperature 103°F

Type of Sampling: Personnel _____ Engineering K
Collection Media OS in H.A. recorder

Sampling by M. C. W. A. N. Date 8/12/86
Contaminant Phthalates Fiber

Pressure 29.82" Hg
Housekeeping Good

Pump (type & model) *Almond P. 2500*

[illegible]

ACTIVITY	COMMENTS	SHIFT	DATE	TIME	BY
		Shift	Jan-10	0-18/1-3	Bulk M3194 &c

Laboratory Evaluation by Emily C. Onello / JXK

5150 98/EE/8 10001169

T O T A L D U S T

CONSTRUCTION

Report: 76447

PRODUCTS

Group: CPD Manufacturing

DIVISION

Date: 8/18/86

Charge No.: 1174

Requestor: [REDACTED]

Marketing or Manufacturing Approvals:

Name: T. E. Hamilton

Approved: T. E. Hamilton

REQUEST FOR TECHNICAL SERVICE

PROBLEM TITLE: Environmental Evaluation -- Air -- Total Dust.

SIGNIFICANCE: The evaluation of workplace air on a periodic basis is necessary to comply with the air sampling section of the OSHA Air Contaminants Standard.

SPECIFIC OBJECTIVE: Determine the Total Dust on the sample and calculate the rate of deposition in mg/M^3 .

SUGGESTED APPROACH: Analytical Balance -- Filters have been pre-weighed.

DEADLINE (last day information will be of value): Two (2) weeks.

DETAILS OF PROBLEM: Please evaluate personnel sample numbers OW-11, OW-12, OW-6, and OW-17 from Phoenix, AZ. Products and ores involved: L-3.

ACCEPTED BY RESEARCH DEPT.: Charles L. Jones, Jr. DATE: 08/28/86

ASSIGNED TO: B. O'Leary, M. Canete

10001170

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PAGE 2

REQUEST FOR TECHNICAL SERVICE

NUMBER: 76447
GROUP: CPD Manufacturing
ACTUAL COST: \$45.-
REPORTING DATE: 8/27/86

Summary & Results:

Four air samples were received from Phoenix, Arizona, and were evaluated for their total dust content.

The results are as shown on the attached Air Sampling Record Sheet.

Tara K. Nelson / *BOC*
Tara K. Nelson

10001171

AIR SAMPLING RECORD SHEET

Plant Location Phoenix, AZ
 Division CPI
 Sampling by M. Cowan Date 8/11/86
 Continent Total Dust

Weather Clear and hot
 Temperature 110°F
 Pressure 30.08" Hg
 Housekeeping Good

Type of Sampling: Personnel x Engineering _____
 Collection Media Polysorbate Membrane
 Pump (type & model) Depent 1-2500

[illegible]

Additional Comments: Sheet 1 pm - 9 pm D-18, L-3, Bulk Aggregate

10001172

ZONOLITE PLANT - INDUSTRIAL HYGIENE AUDIT

Plant Location: Phoenix, AZ

Date: 8/11/82

Audited By: M. Cowan

AIR SAMPLING LOCATIONS:

ASBESTOS (Personnel):

☒ Vermiculite Baggers } 0-18
☒ Furnace Operators }
☒ Truck Loaders
☐ Maintenance (Clean-up)
☒ Other, (List) Shift leader

TOTAL DUST:

☒ Monokote Mixer
☒ Monokote Bagger
☐ Perlite Bagger
☐ Soil Line Mixer
☐ Soil Line Bagger
☐ Other, (List) _____

ENGINEERING SAMPLES:

Matl A; 0-18 Stoner (Product End)

☒ Stoner (Waste End)

☒ Waste Rock Hopper

☒ Bag House Waste Drop

☐ Other, (List) _____

NOISE MONITORING: (list job descriptions)

1. Bruce Vinson - Monokote Mixer/Bagger
2. Chris Vinson - Monokote Mixer/Bagger
3. Peter Balanegro - 0-18 Bagger
4. _____
5. _____

10001173

(✓) = Satisfactory Condition

HEALTH SURVEILLANCE PROGRAM

Pre-Employment Physicals

Annual Surveillance: Chest X-ray

Lung-Function Test

Audiogram

Health Questionnaire

	Status (list)
✓	
✓	
✓	
✓	
✓	

PROGRAMS, PROCEDURES AND RECORDKEEPING

Copy of OSHA Regulations (29CFR1910)

General Safety Rules

Formal Inspection Program

Incident Investigation

Safety Meetings

First Aid Training & Equipment

Written Respirator Program

Respirator Training & Fitting Records

Copy of Hearing Conservation Std.

Hearing Conservation Training Records

OSHA 200 Log (6 day up-to-date)

Lockout and Tag Procedures

Baghouse Entry Procedure

Employee Hazard Communication

Forklift Driver Training Program

Asbestos Training - "Picture Perfect"

Other Programs

	Status (list)
✓	
✓	
✓	
✓	
✓	
✓	
	will be sent
✓	
✓	
✓	
✓	
✓	
✓	
✓	

10001174

PLANT WALK-THROUGH SURVEY:

(✓) = Satisfactory Condition

ENGINEERING CONTROLS

Waste Rock Hoppers
Stoner Flaps
Baghouse Waste Drop
Bag Waste Compactor
Monokote Mixing Ventilation
General & Miscellaneous Ventilation

	Status (list)
✓	
✓	
✓	
✓	
✓	
✓	

GENERAL CONDITIONS

Employee Work Practices
Proper Respirator Use
Personal Protective Equipment Use
Plant Housekeeping
Forklift Trucks
Truck Wheel Chocks & Dock Plates
Machine Guards and Railings
Ladders
Fire Extinguishers
Battery Charging Stations
Electrical Cords
Labeled Electrical Panels
Storage & Handling of Flammables
Warehouse Storage (Pallets)
Stoner Deck Conditions
Secured Compressed Gas Cylinders

	Status (list)
✓	
✓	
✓	
✓	
✓	
	No wheel chocks
✓	
✓	
✓	
	N/A
✓	
✓	
✓	
✓	
✓	
✓	

Comments:

Signature: _____

Plant Manager

10001175

HAZARD COMMUNICATION PROGRAM:

Right-To-Know

1. Does the Health, Safety and Environmental Response Manual contain the procedures needed to implement the Right-To-Know Training Program, i.e. 005-A "In-House Labelling", 006-A "Material Safety Data Sheets" and 007-A "Written Hazard Communications Program"?
2. Has the Labelling Program been implemented?
Are labels easily visible and in satisfactory condition?
3. Is the "Workplace Notebook" containing the Chemical Inventory Lists, Material Safety Data Sheets and HITS Training Information Sheets available in a location "readily accessible during each work shift to employees when they are in their work areas"?

Do employees know where it is?
4. Do individual employee files contain records of Right-To-Know Training, including training dates, identity of specific information and individual chemicals covered and the person completing the training?
5. Some states require the use of state prepared Right-To-Know posters. Has the plant manager identified this requirement and posted where applicable?

Status (list)	
Yes	No *
✓	
✓	
✓	
✓	
✓	
✓	
N/A	

Comments *:

Figure 7

SAMPLE

RESPIRATOR TRAINING RECORD

<u>Name</u>	<u>Date</u>	<u>Department or Work Area</u>
<u>Dean Bailey</u>	<u>8/12/86</u>	<u>Forklift driver</u>
<u>Chuck Chavez</u>	<u>8/12/86</u>	<u>QC</u>
<u>Pat Mariana</u>	<u>8/12/86</u>	<u>Maintenance</u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
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<u> </u>	<u> </u>	<u> </u>

Training Instructor: _____

10001177

FIT TESTING RECORD

*Irritant smoke, isoamyl acetate, sodium saccharin, quantitative

**Pass or fail

X must shave beard before entering baggage 10001178

****Pass or fail**

10001178