October 12, 1992

To: Bill Fultz
cc: T. Bretz
K. Emmerling
R.J. Grahek
G. Higby
L. Larson
M.M. Marshall
E.C. Martinelli/W.F. Patient
C. Mattia
D. O'Keefe

From: Dan Gleghorn

PEDRICKTOWN
1992
INDUSTRIAL HEALTH AUDIT

Enclosed is the final report of the Geon Vinyl Division Industrial Health Audit conducted in your facility by Herm Waltemate and me during the period of October 5 through 9, 1992.

I would like to thank you for the hospitality afforded us during our visit to your facility.

Your people being prepared and Todd Bretz assistance helped me complete the audit in a timely manner.

You are fortunate to have Todd Bretz and Dennis O'Keefe who have been working diligently to formulate and implement your industrial health strategy.

During the audit, we pointed out conditions that violated BFGoodrich or OSHA standards or were inconsistent with good health practices.

The facility was rated with 120"Satisfactory",20 "Needs Attention" and 58 "Does Not Apply" items.

Items to be corrected were developed from the Audit Checklist and the Inspection Tour notes. These documents can serve as a reference as you develop your abatement plan. The report formate is laid out for you to write in your abatement program and indicate the status as **complete, in-complete** or **no action.** A progress report giving the status of the items requiring attention is due in 60 days and on a quarterly basis thereafter until completion of all items. All items are to be resolved within a one (1) year time frame.

A computer disk in Word Perfect format is included for your use in complying with this request.

The report includes the following:

I Favorable Observations
II Items from Corporate Audit
III Items to Be Corrected
IV Industrial Health Program Rating

Dan Gleghorn

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10/12/92
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PEDRICKTOWN
INDUSTRIAL HEALTH AUDIT

October 5-9, 1992

I Favorable Observations

1. As mentioned before, you are fortunate to have Todd Bretz and Dennis O'Keefe to develop and implement your Industrial Health Strategy.

2. Dr. Boyer and Karen Emmerling seem to have a good feel for the health care needs of the facility and are doing a good job.

3. The work you have done on the portable resin transfer units (Yellow Birds) is an excellent example of cost effective noise reduction. Jim Delaney has some very good ideas on other projects, i.e. single screw rotary vane blowers that could further reduce noise while increasing material transfer efficiency. I look forward to further reviewing Jim's ideas, with him, in the future.

4. The First Aid Responders from the Lab appear to be well trained and equipped.

5. The Visual Training/Certification System, in the Lab, uses a magnetic board to indicate who is trained and/or certified on specific procedures. There are employee files to support the program for each employee.

6. The procedures in place and being developed for your Industrial Hygiene program are outstanding. Todd Bretz and Ernie Kidd are to be commended for their efforts on this project.

7. The Hazard Labels (marking) on your storage and process vessels are the best I have found in GVD.

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II. Items from Corporate Audit

Corporate Audit Item 47.b. Although your respirators for the most part appear to be in good condition some respirators are not being stored in bags to assure they are kept in the most sanitary condition according to IH-101 Respiratory Section h.

Response

_____
_____
_____
_____
_____
_____
_____
_____
_____

Status

_____ Complete
_____ Incomplete
_____ No Action

Corporate Audit Item 35.e. I will work with the plant in conducting exposure monitoring to determine if ventilation is needed on the inclined conveyors in compounding.

Response

_____
_____
_____
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_____
_____
_____
_____
_____

Status

_____ Complete
_____ Incomplete
_____ No Action

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III. 1992 Items To Be Corrected

IH-1992-1 Product specific MSDS were not available for each vinyl resin and compound. This is an issue that must be corrected on a divisional level. You will be advised of the necessary response require of the plant.

Response

_____
_____
_____
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_____
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_____
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_____

Status

_____ Complete
_____ Incomplete
_____ No Action

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IH-1992-2 OSHA 29 CFR 1910.1200 (f) (5), Hazard Communication, requires that each container of Hazardous Material be labeled. The following items must be corrected:

1. Bulk storage boxes, intended for storing compound, were found in the Dispersion Poly and Mass buildings and are labeled with Hazardous Waste Labels for Vinyl Chloride containing materials. It is important to note that OSHA 29 CFR 1910.1017 (1)(3) requires "containers of polyvinyl chloride resin waste from reactors or other waste contaminated with vinyl chloride shall be legibly labeled:

   Contaminated with Vinyl Chloride
   Cancer Suspect Agent "

   The OSHA labels were <u>not</u> observed on these boxes. The boxes also retain the Compound Labels. These labels do <u>not</u> indicate the true contents of the containers.

2. Several Fiber Drums, in the Mass Building are not labeled.

3. NFPA markings on the Resin Silos do <u>not</u> correspond to GVD MSDS requirements.

Please advise your time table for correction of this item.

<u>Response</u>

_____
_____
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_____
_____
_____

<u>Status</u>

_____ Complete
_____ Incomplete
_____ No Action

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10/12/92
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IH-1992-3 The monitoring program to support your monitoring priority strategy is progressing well. Several chemicals found in your monitoring priority strategy are due to be monitored in November and December. Please advise me when this monitoring has been completed.

Response

_____
_____
_____
_____
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_____

Status

_____ Complete
_____ In-Complete
_____ No Action

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IH-1992-4

IH-101 "Ventilation Section" deals with ventilation equipment designed for control of health hazards and requires annual ventilation flow and maintenance checks which are documented. Engineering Standard "ST-411" gives engineering and design standards for ventilation equipment. This item could be added to your maintenance PM system. Please advise me your method for handling this matter and the time table for initiation.

Response

_____
_____
_____
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_____
_____
_____
_____
_____

Status

_____ Complete
_____ In-Complete
_____ No Action

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VI.

GEON VINYL DIVISION
SPECIALTY POLYMERS & CHEMICALS DIVISION
INDUSTRIAL HEALTH AUDIT
CHECKLIST

LOCATION Pedricktown DATE 10/5-9/92

S = Satisfactory
NA = Needs Attention
DNA = Does Not Apply

A. INDUSTRIAL HEALTH PROGRAM ADMINISTRATION

1. Industrial Health Coordinator

a.	Named	S
b.	Knowledgeable	S
c.	Walk-throughs	S

2. Periodic Industrial Health Program Reports

a.	Timely	S
b.	Content	S
c.	Quarterly Reports	S
d.	Year-end Report	S
e.	Goals for Next Year	S

3. Medical Services

a.	Physical Examination	S
b.	Medical Equipment Certification Calibration	S
c.	Professional Training	S
d.	Illness and Complaint Investigation	S

4. Job Exposure Surveys

a.	Complete	S
b.	New Exposure Review	S
b.	Annual Review and Update	S

5. Chemical Hazard Review and Use

a.	Committee Established (New Chemical Review)	S
b.	MSDS	
1.	Available (Need GVD PVC MSDS's)	NA
2.	Employees Trained in Use	S

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6. Reply to Industrial Health Audits

a.	Initial	S
b.	Final Report	S

7. PEL's and Fetal Toxicity

		Written Program	Medical Surveillance	Training
a.	Hazard Communication	S	DNA	S
b.	Acrylonitrile	DNA	S	S
c.	Benzene	DNA	DNA	DNA
d.	Carbon Tetrachloride	DNA	DNA	DNA
e.	Chromium VI	DNA	DNA	DNA
f.	Chloroform	DNA	DNA	DNA
g.	Dimethyl Acetamide	DNA	DNA	DNA
h.	Ethylene Thiourea	DNA	DNA	DNA
i.	Lead	S	S	S
j.	Mercury (Vapors)	DNA	DNA	DNA
k.	Methyl Ethyl Ketone	DNA	DNA	DNA
l.	Vinyl Chloride	S	S	S

8. Monitoring for OSHA PEL's and Fetal Toxicity (FT) by Area From (month/year) 1/1/91 to Present

	Number of Samples	% Over PEL	% Over PEL Without Protection
a. Chromium III** PEL 0.5 ppm			
Department Number & Name	NA	DNA	DNA
b. Chromium VI** PEL Not Established - TLV 0.05 mg/m3 Fetal Toxin > 0.05 mg/m3			
Department Number & Name	NA	DNA	DNA

** These chemicals have been included in the Plant's monitoring schedule but have not been monitored yet.

c. Lead PEL 50 $\mu g/m^3$
Fetal Toxin if blood lead level <30ug/100gm blood.

Department Number & Name			
	4 (S)	0 (S)	0 (S)

	Number of Samples	% Over PEL	% Over PEL Without Protection
d. Vinyl Chloride PEL 1 ppm Fetal Toxin <1 ppm			
Department Number & Name	178(S)	7(S)	2(S)
e. Antimony** PEL 500 $\mu g/m^3$			
Department Number & Name	0 (NA)	DNA	DNA
f. Cadmium** 0.2 mg/m^3			
Department Number & Name	0 (NA)	DNA	DNA
g. Titanium Dioxide** 5 mg/m^3 Respirable Dust 10 mg/m^3 Total Dust			
Department Number & Name	0 (NA)	DNA	DNA
h. Tin** 2 mg/m^3			
Department Number & Name	0 (NA)	DNA	DNA
i. PVC Dust** 15 ppm Total Dust 5 ppm Respirable Fraction			
Department Number & Name	0 (NA)	DNA	DNA

** These chemicals have been included in the Plants monitoring schedule but have not been monitored yet.

	Number of Samples	% Over PEL	% Over PEL Without Protection
j. Barium** 0.5 mg/m^3			
Department Number & Name	0 (NA)	DNA	DNA
k. Zinc** 10 ppm Total Dust 5 ppm Respirable Fraction			
Department Number & Name	0 (NA)	DNA	DNA
l. Carbon Black** 3.5 mg/m^3			
Department Number & Name	0 (NA)	DNA	DNA
m. Methyl Acrylate** 10 ppm			
Department Number & Name	0 (NA)	DNA	DNA
n. Naphtha** 100 ppm			
Department Number & Name	0 (NA)	DNA	DNA
o. Tetrahydrofuran 200 ppm 250 ppm (STEL)			
Department Number & Name	5 (S)	0 (S)	0 (S)
p. Acrylic Acid 10 ppm			
Department Number & Name	3 (S)	0 (S)	0 (S)
q. Acetone 750 ppm 1000 ppm (STEL)			
Department Number & Name	1 (NA)	0 (S)	0 (S)

	Number of Samples	% Over PEL	% Over PEL Without Protection
r. Cyclohexanone 25 ppm			
Department Number & Name	1 (NA)	0 (S)	0 (S)
s. Di-sec-octyl phthalate 5 ppm 10 ppm (STEL)			
Department Number & Name	1 (NA)	0 (S)	0 (S)

A plan has been written to address all Over Exposures without personal protection. S

** These chemicals have been included in the plants monitoring schedule but have not been monitored yet.

B. INDUSTRIAL HEALTH PROCEDURES

1. Respiratory Procedure

a.	Written	S
b.	Selected per Hazard	S
c.	Training	S
d.	Fit Testing	S
e.	Medical Examination	S
f.	Cleaning	S
g.	Storage	NA
h.	Inspection	S
i.	Approvals	S
j.	Usage	S

2. **Asbestos Handling and Disposal**

a.	Sources Identified	S
b.	Monitoring	DNA
c.	Medical Examination	DNA
d.	demolition and Removal	S
e.	Protective Clothing	S
f.	Written	S

3. **Industrial Health Exposure Evaluation and Monitoring**

a. Strategies

1.	OSHA Compliance	S
2.	Exposure Evaluation	S
3.	Special Requests	S

b.	Sample Procedures	S
c.	Analytical Procedures/Cross Check Program	S
d.	Employee Notification, Interview & Documentation (Excellent program)	S

4. **Radiation**

a.	Hazards Identified and Labeled	S
b.	License Requirements	DNA
c.	Records	S
d.	Dosimetry Program	DNA
e.	Periodic Leak Checks	DNA
f.	Radiation Protection Officer	DNA

5. **Ventilation for Health Hazard Control**

a.	Periodic Flow or Maintenance Checks	NA
b.	Laboratory Hoods	
1.	Yearly Flow Checked	S
2.	Rating or Flow-Rate Posted	NA
c.	Modifications Reviewed	S
d.	New Systems Reviewed	S

6. **Leak Detection**

a.	Written	S
b.	Area Monitoring Response	S
c.	Leak Repair Control	S

7.	**I.H. Equipment Calibration**	
	a. Audiodosimeters	
	1. Daily Field Calibration	S
	2. Laboratory Calibration	S
	b. Sound Level Meters	
	1. Daily Field Calibration	S
	2. Laboratory Calibration/Three Years	S
	c. Acoustic Field Calibrators Every Three Years	DNA
	d. Radiation Detection Device - Annually	DNA
	e. Area Monitoring Devices (Self calibrates)	S
	f. Personnel Monitoring Pumps	S
8.	**Laboratory Safety**	
	a. Chemical Hygiene Plan (in use)	S
	b. Chemical Hygiene Officer Named	S
	c. Lab Hoods Adequate for Hazard	S
	d. Personnel Protective Clothing and Equipment	S
9.	**Bloodborne Pathogen**	
	a. Written Exposure Control Plan	S
	b. List of Job Covered by the Plan	S
	c. Training	S
	d. Immunization	S
10.	**Potable Water Safety**	
	a. Written Policy	S
	b. Water Systems Identification	S
	c. Cross Connection Avoidance (All systems are tagged)	S

C. Hearing Conservation and Noise Control

1. All jobs with an eight hour TWA exposure of 85 dBA (50% dose), have been identified. S

2. Noise hazardous (BFG > 85 dBA) areas have been posted. S

3. A formal list is available at the plant specifically designating hazardous and non-hazardous noise exposure jobs. S

4. Records are available showing monitoring results for those jobs that were monitored. S
NOTE: A copy of monitoring result must be entered into the Medical Surveillance System in Bath. The plant must retain its records for at least two years (OSHA).

a. Monitoring for OSHA Noise PEL by Area From (month/year) 1/1/91 to Present

Department Number & Name	Number of Samples	% Over 50% Without Hearing Protection	% Over 100%
Hearing Protection Action Level 50% Engineering Control PEL 100%			
113 (S)		6 (S)	13 (NA)

5. When employees working on noise hazardous jobs are monitored, they are informed of the monitoring results (OSHA). S

6. Engineering and/or maintenance efforts are being directed at reducing noise in those areas/jobs with an eight hour TWA of 90 dBA or greater (100% dose)(OSHA). S
NOTE: Details of this effort must be documented.

7. Hearing protection worn in all noise hazardous areas. S

8. Hearing protectors in use are capable of reducing employee noise exposures to below 85 DBA (NOTE: "NRR" or attenuation factor on hearing protector package. Consult with Industrial Health in Cleveland if more information is needed). S

9. Employees are provided a choice of two or more different types/varieties of hearing protection (OSHA). S

10. Personnel working at noise hazardous jobs receive annual training which includes at least the following information (OSHA).

    a. The effect of noise on hearing. S

    b. The purpose of hearing protectors, the advantage and attenuation of various types, and instructions on selection, fitting, use, and care. S

    c. The purpose of audiometric testing and an explanation of the test procedures. S

11. Care is exercised to insure a proper initial fit and correct use of all hearing protectors (OSHA). S
    NOTE: With inset-type hearing protectors (ear plugs), it is important that the ear canal be clear and free of impacted wax. The ears should be examined for impacted wax before plugs are fitted. If impacted wax is found, it should be removed by a nurse or physician. Any employees complaining of an ear problem should be referred to medical personnel for examination.

12. Audiometric examinations are provided for:

    a. All new hires (pre-employment). S
    b. Transfers to noise hazardous jobs. S
    c. Employees working on noise hazardous jobs (annually). S

    NOTE: Details for conducting proper audiometric exams are provided in BFG's OHP Manual, Section 5.05.

13. Audiograms are permanently retained for each employee. S

14. Employees with audiograms showing a standard threshold shift (STS) are notified of this fact in writing within 21 days (OSHA). NOTE: Employees showing a STS are to be retested within 30 days. S

15. Employees exhibiting a STS are refitted with hearing protection and retrained in its use (OSHA). NOTE: Hearing protectors with greater attenuation may be needed. S

16. Employees showing shifts in their hearing are provided follow-up counseling based on the BFG quarterly Audio Action Report and Section 5.0-5 of the OHP manual. S

17. Cases with a confirmed average 25 dB shift from the original baseline in the frequencies 2000, 3000, and 4000 Hz, either ear, are recorded on the OSHA 200 Log. S

18.* The audiometer in use satisfies requirements of the ANSI standard 3.6-1969. S

19.* An acoustical or biological calibration is performed daily on the audiometer before use. NOTE: Results of these tests must be kept on record for at least one year. S

20.* An acoustic check is performed on the audiometer annually, NOTE: Audiometer must meet requirements of ANSI S3.6-1969. S

21.* An exhaustive calibration of the audiometer is performed at least every two years by the manufacturer or his approved agent. NOTE: (#18, #19, #20) Results of all checks and calibrations must be kept on record. S

22. A copy of the OSHA noise standard is posted in the workplace or is available to employees. S

*Numbers 18, 19, 20, 21 - Where an outside audiometric testing service is employed, it must be established that these requirements are satisfied.

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NGC 12734

D. Check List Totals

Satisfactory	120
Needs Attention	20
Does Not Apply	58

NGC 12735

October 16, 1992

To: Bill Fultz
cc Todd Bretz
Bob Grahek
Dennis O'Keefe
Herm Waltemate

From: Dan Gleghorn

Subject: Pedricktown Plant Inspection Tour October 5-9, 1992

During the inspection tour of your physical facility a number of items were observed both positive and of concern. This list will be helpful to you in defining specific locations of the Corrective Action Items, contained in my final audit report.

1. Herm and I were required to complete the Contractor Orientation Program. This is a very positive approach with an excellent program.

2. MSDS for every product manufactured at your plant were not available. This is a divisional problem and we are dealing with it.

Medical

3. I had an extensive visit with Dr Boyer and Karen Emmerling. They appear to be in control of Medical Management in the plant.

Dispersion Drying

4. Harco PVA individual bags are not labeled.

5. Bulk storage bags in the Dryer Labelling Area (partially filled) are not labeled.

6. Noise suppression is being added to the Venturi Dryer Exhaust.

Poly Building

7. A Gaylord which was originally intended for compounds is being used to store waste dispersion resin. The container has a Hazardous Waste Label for Vinyl Chloride but I could not find the Cancer-Suspect Label required by OSHA 29 CFR 1910.1017(1)(3). The container still had the Compound Label which does not represent its true contents.

Industrial Health and Monitoring Offices

8. The Noise Dosimeters are outdated. Their reliability and calibration is questionable. These units are undoubtably difficult to get serviced. Only three of five are usable.

9. A review of your industrial hygiene and monitoring procedures indicate that the ones that have been completed are excellent and the time table for completion of the remaining ones seems appropriate.

10. I recommend the use of the Port-o-count for respirator fit testing. This unit will give a quantitative fit factor and testing could be administered by the nurse during the pulmonary physical. Although there is an initial cost for this unit the efficiency gained may make it worthwhile.

Laboratory

11. Lab hood ventilation has been checked and labeled but the flow rate has not been included on the label as required by IH-103.

12. First Aid Responders from the Lab are well trained and equipped.

13. The Brookhaven BI-90 Particle Sizer needs a laser warning label.

14. The visual Training/Certification System uses a magnetic board to indicate who has been trained and who is certified. Their are employee files to support and verify the training.

Outside

15. The NFPA markings on the Resin Silos do not correspond to GVD MSDS requirements.

16. Two of the five portable transfer units (Yellow Birds) have had noise suppression added to them. The noise has been reduced from 100 dBA+ to approximately 87 dBA. These units still could use mufflers. Jim (Spike) Delaney has been doing an outstanding job on this project. I believe the noise could be further reduced by adding stiffeners to the bottom of the boiler plate to stop cavitation and mounting the blower and motor on Iso Pads to decouple them from the base. Jim has also suggested using a single vane rotory vane blower which should lower the noise and increase efficiency.

This is a good example of what can be done to lower noise exposures economically.

Compounding

17. The Corporate Audit Item 35.e. indicates ventilation is needed over the inclined conveyors from the Farrells to the Mills. It does not appear to me that ventilation is required during the processing of rigid compounds. We were unable to observe flexible compounds being made. Dennis O'Keefe has ask me to assist in determining if ventilation is needed over the conveyors. I will be in touch with Todd Bretz to coordinate this project.

Maintenance

18. One (1) of three (3) welding carts did not have Flashback arrestor on the oxygen and acetylene tanks.

19. Annual surveys and certification of health hazard control process ventilation is required by IH-101. This could be added to your P.M. System.

20. Two small acetylene tanks and one large APE Gas tank were stored with the full oxygen tanks behind the building.

21. You need to review your instrument calibration procedure to assure instruments (HNu, etc.) are calibrated on a timely basis.

Tank Farm

22. The mask for the SCBA in building 516 is not stored in a bag. The quality of this mask should be reviewed. There is a window missing from the storage cabinet.

Mass Building

23. Bulk storage boxes of PVC still have Compound Labels and no **"Cancer-Suspect Agent"** Labels.

24. Twelve (12) fiber drums have no labels.

Dan Gleghorn

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