PPG INDUSTRIES, INC.
Lake Charles, LA

Industrial Hygiene
Monitoring Strategy
July '88 - December '88

Contents:

Introduction and Organization

This document sets forth the minimum acceptable level of monitoring to be conducted during the last half of 1988. Any changes made are to be documented and may be made only after the prior joint approval of the Sr. Safety Engineer/Industrial Hygiene, the Manager of Safety, and the Coordinator, Environmental Systems.

There are five parts to this strategy. Each shall be given equal priority. Each has a separate timetable for determining progress. Each lists the specific accountabilities for completion.

Additional information on the Lake Charles Industrial Hygiene Monitoring regarding program accountabilities, reporting of results, etc., may be found in Safety Bulletin # 26 (copy attached).

I. CORE Program

Purpose

This activity insures that the air monitoring requirements of OSHA 1910.1001 (Asbestos - General Industry), 1926.58 (Asbestos - Construction) and 1910.1017 (Vinyl chloride) are met.

Program Accountability

The Environmental Lab group will be responsible for conducting all day shift sampling, conducting or arranging for all analyses, and entering the data into the A/P system.

The Sr. Safety Engineer/I.H. will be responsible for developing the monitoring strategy. The Safety group will be responsible for conducting all back shift sampling, coordinating any necessary remedial actions, and reporting on progress to the Manager of Safety and the Coordinator, Environmental Systems.

Timetable

All sampling referenced must be completed by December 15. Progress towards completion will be recorded monthly on a Quality chart by the Safety Group. Progress towards completion should be evenly spaced over the period covered.

Follow-up Samples

In the event that any sample taken shows an exposure level in excess of the Action Level (one-half the IPEL), a second, follow-up sample will be collected within 7 days of receipt of the analysis. Such follow-up samples shall not count towards the satisfaction of the required monitoring activity levels. Instead, they shall be considered special investigative samples. If the second sample verifies an exposure problem or potential problem, the respective Area Supervisor will be contacted to implement immediate corrective actions. Exceptions to this are known exposure problem areas where engineering controls are not feasible and use of personnel protective equipment is already mandated.

Samples to be Collected

ASBESTOS (using OSHA Reference Method)

A. Chlor/Alkali-Plant 'A' Operations

1. Personnel monitoring , by jobtitle and task - all to be 8 hour TWA samples

- Cell Renewalman, working in processing room	2
- " " , clng/water blasting old elements	2

- " " , depositing new diaphragms	1
- " " , reassembling cells	1
- Cell Tenders, mixing slurries and "doping cells"	1
- Cell Renewal Foreman, daily tasks	2

2. Area monitoring - High volume samplers, 8 hour sample

- Processing Rooms, between the glove boxes, during use	2
- Processing Rooms, at dust collector return air plenum	2
- Manual wash stations, during element cleaning	1
- Exterior balancing air discharge of dust collectors	1
Total Plant 'A' Operations Samples	15

B. Chlor/Alkali Plant 'A' Maintenance - Cell related

1. Personnel Monitoring - 8 hour TWA samples.

- Machinists, repairing cell elements	3
- Welders, repairing cell elements	2
- Janitors, while cleaning cell maintenance areas	1
- any skill, performing maintenance on processing room or depositing equipment	each work order

2. Area Monitoring - High volume samplers - 8 hour

- General Maintenance Shop areas	3
- any area, during maintenance work on asbestos contaminated equipment	each work order
Total Plant 'A' Maint.- Cell related samples	9+

C. Chlor/Alkali Plant 'C' Operations

1. Personnel monitoring , by jobtitle and task - all to be 8 hour TWA samples

- Cell Renewalman, working in processing room	2
- " " , clng/water blasting old elements	2
- " " , depositing new diaphragms	1
- " " , reassembling cells	1
- Cell Tenders, mixing slurries and "doping cells"	1
- Cell Renewal Foreman, daily tasks	2

2. Area monitoring - High volume samplers, 8 hour sample

- Processing Rooms, between the glove boxes, during use	2
- Processing Rooms, at dust collector return air plenum	2
- Manual wash stations, during element cleaning	1
- Exterior balancing air discharge of dust collectors	1
Total Plant 'C' Operations Samples	15

D. Chlor/Alkali Plant 'C' Maintenance - Cell related

1. Personnel Monitoring - 8 hour TWA samples.

- Machinists, repairing cell elements	3
- Welders, repairing cell elements	2
- Janitors, while cleaning cell maintenance areas	1
- any skill, performing maintenance on processing room or depositing equipment	each work order

2. Area Monitoring - High volume samplers - 8 hour TWAs

- General Maintenance Shop areas	3
- any area, during maintenance work on asbestos contaminated equipment	each work order
Total Plant 'C' Maint.- Cell related samples	9+

E. Maintenance - Insulation Removal, Minor Jobs

Both personnel and area monitoring must be conducted under OSHA 1926.58 (Asbestos-Construction standard). It is reasonable to expect that at least 2 minor jobs per week will occur somewhere within the complex, though that may vary substantially. Each job will require that at least 3 samples are collected (1 personnel and 2 area samples).

Total Maintenance - Removal samples (estim.)	78

F. Laboratory - Asbestos related

1. Personnel Monitoring - 8 hour TWA samples.

- Lab Analysts, conducting asbestos slurry Q.C.	3
- Lab Analysts, conducting asbestos shipment Q.C. using "shaker" @ Plant A processing room.	as performed

2. Area Monitoring - High volume samplers , 8 hour

- Asbestos Quality Control Lab area (Plant A)	2
Total Laboratory samples	5+
TOTAL ASBESTOS SAMPLES	131+

VINYL CHLORIDE - Personnel monitoring only, by jobtitle and type of sample.

A. Operations - with 50% of samples done on Day shift, 50% Backshifts.

1. Tri-Ethane II

- Auxillary Operator, TWA	2
- " " , STEL, catching/analyzing samples	4
- Furnace Operator, TWA	2

2. VCM II

- Auxillary Operator, TWA	2
- " " , STEL, catching/analyzing samples	4
- Process (Vinyl) Operator, TWA	4
Total Operations samples	18

B. Maintenance - All TWA samples unless otherwise noted. Note: Work order numbers should be entered on data sheets.

1. T.E.II Shop

- Instrument Mech., w/ work order for Furnace area	1
- Machinst, w/ work order for Furnace area	1
- Pipefitter, w/ work order for Furnace area	1
- Welder, w/ work order for Furnace area	1
- Yardcrew, dumping Tar buggy from Furnace area,TWA	1
- " , dumping Tar buggy from Furnace area,STEL	1

2. VCM II Shop

- Instrument Mech., w/ work order for Furnace area	1
- " " , w/ work order for Process area	2
- Machinst, w/ work order for Furnace area	1
- " , w/ work order for Process area	2
- Pipefitter, w/ work order for Furnace area	1
- " , w/ work order for Process area	2
- Welder, w/ work order for Furnace area	1
- " , w/ work order for Process area	2
- Yardcrew, dumping Tar buggy from Furnace area,TWA	1
- " , dumping Tar buggy from Furnace area,STEL	1
- " , w/ work order for Process area	2
Total Maintenance samples	22

C. Shipping

1. Vinyl Loading Rack

- Tankerman, TWA	4
- " , STEL - disconnecting hoses	2
- Tankerman's Helper, TWA	4
- " " , STEL , disconnecting hoses	3

2. Barge Loading Dock

- Tankerman, TWA	as availabl
- " , STEL - disconnecting hoses	as available
- Tankerman Helper, TWA	as available
- " " ,STEL - disconnecting hoses	as available

3. Ship Loading Dock

- Tankerman, TWA	as available
- " , STEL - disconnecting hoses	as available
- Tankerman Helper, TWA	as available
- " " ,STEL - disconnecting hoses	as available
Total Shipping samples	13+

D. Laboratory - All TWA Samples

1. Organics Quality Control Lab

- Lab Analyst performing Q.C. samples	2

2. Vinyl Quality Control Lab

- Lab Analyst performing Q.C. samples	2
Total Laboratory samples	4

TOTAL VINYL CHLORIDE SAMPLES ----------	57+
GRAND TOTAL CORE MONITORING SAMPLES	188+

II. General Monitoring

Purpose

1. Insure that employee exposure profiles remain current.

2. Identify jobs or tasks which require that controls (engineering or PPE) be implemented to prevent or minimize employee exposure.

3. Document, where respiratory protection is required, that the devices used provide the necessary protection factors.

Program Accountabilities

The Environmental Lab group will be responsible for conducting all day shift sampling, conducting or arranging for all analyses, and entering the data into the A/P system.

The Sr. Safety Engineer/I.H. will be responsible for conducting back shift sampling, coordinating any necessary remedial actions, and reporting on progress to the Manager of Safety and the Coordinator, Environmental Systems.

Focus for July through December 1988

The General Monitoring Program will focus primarily on those exposure hazards/jobs which received minimal attention during 1986 & 1987. This is particularly important for Chlorine due to a proposed change in the OSHA PEL.

Derivatives area sampling, other than the Core Program and monitoring for Medical Approval, will receive only that amount of sampling needed to verify and keep current the employee exposure profile.

This approach will enable future monitoring strategies (beginning in 1989) to balance sampling efforts between inorganic and organic hazards.

Timetable

The sampling "year" will end on December 15, 1988. Each targeted chemical (i.e., chlorine, mercury, etc.) must have all sampling completed (& resultant data entered) by that date. Progress towards completion will be entered monthly on a Quality chart by the Safety Group.

Follow-up Samples

In the event that any sample taken shows an exposure level in excess of Action Level (one-half the IPEL), a second, follow-up sample will be collected within 7 days of receipt of the analysis. Such follow-up samples will not count towards satisfaction of the required monitoring

activity levels. Instead, they will be considered special investigative samples. If the second sample verifies an exposure problem or potential problems, the respective Area Supervisor will be contacted to implement immediate corrective actions. Exceptions to this are known exposure problem areas where engineering controls are not feasible and use of personnel protective equipment is already mandated.

Samples to be Collected

Note: For any job title listed that works shift - at least 50% of sampling must be done on back-shifts.

A. Chlorine (all STEL)

1. Chlor/Alkali (Note: Liquefaction (North & South) has sufficient data on hand.)

Electrolyzers

- Cell Tenders - during sampling rounds	4
- Cell Operator (days) - sampling	2
- Renewalman - during all cut-out	4
- Renewal Helper	4
Total Electrolyzer Samples	14

Mercury Cells

- Cell Tenders - during sampling & adjustments	4
- Cell Room Operator - during rounds	2
- Cell Renewer, during all cut-out	2
- Cell Cut-out Helper, during all cut-out	2
Total Mercury Cell Samples	10

Chlorine "C"

- Glanor Auxillary Operator, during sampling rounds	4
- Glanor Renewal Man, during cut-out	2
- Glanor Renewal Man, during cut-out	2
Total "C" Chlorine Samples	8

2. Shipping

- Tankerman, disconnecting rail cars	4
- Tankerman, disconnecting Barges	4
- Tankerman Helper, disconnecting rail cars	4
- Tankerman Helper, disconnecting barges	4
Total Shipping Samples	16

3. Laboratory

- Lab Analysts, catching Cl2 samples	2
- Lab Analysts, analyzing Cl2 samples	2
Total Lab Samples	4

TOTAL CHLORINE SAMPLES ---------- 52

B. CPC - (When Unit is Operating)
Analyze all samples for CPC, DCPC & PvCl.

1. CPC Unit

- CPC Operator, TWA sample	3
- CPC Operator, conducting rounds, STEL	3
- CPC Operator, unloading PvCl Shipments, STEL	3
Total CPC Unit Samples	9

2. Laboratory

- Lab Analysts doing Q.C., TWA	3
- Lab Analysts doing Q.C., STEL	3
Total Lab Samples	6

3. Maintenance

- Instrument Mechanic, working in Unit, TWA	3
- Machinist, working in Unit, TWA	3
- Pipefitter, working in Unit, TWA	3
- Welder, working in Unit, TWA	3
- Yard Crew, working in Unit, TWA	3
Total Maintenance Samples	15

4. Shipping

- Tankerman, loading CPC, TWA	3
- Tankerman, disconnecting loading hoses, STEL	4
- Tankerman Helper, loading CPC, TWA	3
- Tankerman Helper, disconnecting loading hoses, STEL	4
Total Shipping Samples	14
TOTAL CPC SAMPLES	44

C. Chlorinated Hydrocarbons (C_1 & C_2 compounds)

All listed job titles to be sampled twice, 1 on Days, and 1 on either Evenings or Graveyards. All samples to be TWAs.

Note: This list does not include job titles covered under the CORE Program. Additionally, samples caught for Medical Approval Follow-up Monitoring may be counted for covering a given job title.

1. Derivatives - General

- Shift Supervisor
- Environmental Foreman

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2. EC/HCl

- EC/HCl Operator
- Lead Operator

3. EDC/VDC

- EDC/VDC Operator
- Lead Operator

4. Per/Tri

- Auxillary Operator
- Lead Operator
- Reactor Operator
- Still Operator

5. Shipping at Solvents Loading Rack

- Tankerman
- Tankerman Helper

6. Tri-Ethane II

- Lead Operator
- MC-DCE Operator
- OHC Operator

7. VCM II

- EDC Operator
- EDC Lead Operator
- OHC Operator
- Storage Operator
- Vinyl Lead Operator

8. WTU

- Auxillary Operator
- CPC Operator, while not working in CPC Unit.
- Incinerator Operator
- Lead Operator
- Tetra Operator
- WTU Operator

TOTAL DERIVATIVES SAMPLES (26 X 2) ---------- 52

D. Hydrogen Sulfide

Plant A - Mercury Cell

Area Samples - 8 hour, around Sulfide treatment systems	3
Brine/Environmental Operator - TWA	3
Brine/Environmental Operator, during NASH addition, etc. - STEL	3
TOTAL H_2S SAMPLES	9

E. Mercury - All TWA Samples

1. Mercury Cell Operations

- Brine/Environmental Operator	2
- Cell/Area Operator	2
- Cell Room Operator	2
- Cell Tender	3
- Lead Operator	1
- Utility Operator	1
- Cell Builder	3
- Cell Cut-out Helper	3
- Cell Renewer	3
Total Operations Samples	20

2. Mercury Cell Maintenance

- Electrician working in Cell Area	2
- Insulator working in Cell Area	2
- Instrument Mechanic working in Cell Area	2
- Machinist working in Cell Area	2
- Machinist rebuilding pumps	2
- Pipefitter rebuilding pumps	2
- Welder working in Cell area	2
- Yard Crew working in Cell area	2
Total Maintenance	16
TOTAL MERCURY SAMPLES	36

F. Silica - Crystalline

Conduct both respirable and total dust sampling.

1. "A" Sandblast Yard

- Area samples at perimeter, downwind	3
- Painter - as "pot watcher" during blasting	3
Total Samples	6

2. "C" Sandblast Yard
   - Area samples at perimeter, downwind ---------- 3
   - Painter, as "pot watcher" during blasting ---------- 3
   Total Samples ---------- 6

TOTAL SILICA SAMPLES ---------- 12

G. Synthetic Precipitated Silica (Amorphous)

Conduct both respirable and total dust sampling, all TWA.

1. Dryer Building

   - Dryer Aux. Operator ---------- 3
   - Dryer Building Operator ---------- 3

2. Silicas Shipping

   - Packer ---------- 3
   - Shipper ---------- 3

TOTAL SPS SAMPLES ---------- 12

H. Welding Fume

Analyze as total welding fume and the appropriate oxide.
Note: A more comprehensive sampling approach will be taken in 1989.

Plant C Welding Shop

- Area samples - in vicinity of ongoing work ---------- 3 + 3
- Welders - TWAs ---------- 3 + 3

TOTAL WELDING FUME AND OXIDES SAMPLES---------- 12

GRAND TOTAL GENERAL MONITORING ---------- 229

III. Noise Monitoring

Purpose

The Lake Charles Hearing Conservation Program requires that all employees whose job class noise exposure category is "Medium" (8 hr TWA > 85, < 90 dBA) or "High" (8 hr TWA > 90 dBA) be included in the Audiometric testing program.

Noise monitoring will focus on verifying those "job classes" assigned a "Low" (<85 dBA TWA) exposure category in Plant C and Complex. Note - Plant A & B will be checked the first half of 1989. This will insure that no employees who must be on the program have been missed.

Program Accountability

The Sr. Safety Engineer/Industrial Hygiene will identify all job classes currently assigned a "Low" category. He will provide this information to the Plant Safety Representatives. The Plant Safety Representatives will, devise a schedule for conducting the necessary noise dosimetry to meet the timetable listed below. They will conduct the sampling, complete the necessary forms, and return data to the Sr. Safety Engineer for review, and entry to the A/P System.

Sampling Distribution & Number

A sufficient number of samples will be considered 75% of the number of employees assigned to the job class (or five samples - whichever is less). Job classes which involve shift work will have at least 40% of sampling done on "backshifts".

Job titles to be sampled are distributed approximately as follows:

Plant C - 18
Complex - 5

Total number of determinations will be approximately 100*

Timetable

Plant C and Complex Completed & data entered 11/15/88

IV. Air Monitoring for Medical Approval of Derivatives Employees

Purpose

Provide timely information to the Plant Physician to support decisions made regarding conditional medical approvals for employees assigned to work in the Derivatives Area.

Program Accountability

The Medical Department will identify (by name, badge # and Unit) any employee who is required to be monitored under the program. This will be communicated directly to the Environmental Lab group, with a copy to the Sr. Safety Engineer/I.H. Changes in employee status must be communicated immediately to the Environmental Laboratory group.

Note: Those employees conditionally approved to work in, but not assigned to the Derivatives Area, will be identified. When so assigned, the employee's supervisor will handle all required notifications.

The Safety group will conduct any sampling required to be done on back shifts.

The Environmental Lab Group will conduct day shift sampling and analyses, and report the results back to the Medical Department and the affected employee and Unit Supervisor. They will also insure that the data is entered to the A/P System on a timely basis.

Additionally - the Medical Department must inform the employee of the fact of impending monitoring and the purposes of this sampling program.

Finally, the Sr. Safety Engineer/Industrial Hygiene will provide any necessary statistical analysis of such data, monitor the overall effort to insure that the sampling is occurring and that information is passed on in a timely manner.

Sampling Frequency

Each employee regularly assigned to work in the Derivatives Area or with Derivatives Products will be sampled on a weekly basis (see note below). When an employee is slated for a shift break ("long weekend") the day sampled must be adjusted so that week is not lost. In the event of extended absence due to vacation, military duty, etc., that fact must be documented and the Medical Department informed.

Compounds Analyzed

All "standard" chemicals present in the Derivatives Units (chlorinated C_1 & C_2 compounds) as products, by-products, or intermediates.

Note: Current policy requires weekly sampling. It is intended to revisit this approach and determine if a reduction in frequency is acceptable.

V. Special Project - Paint Solvents Exposure

Problem

A wide variety of finishes are used at Lake Charles - primarily via spray application.

No monitoring data exists to date regarding the paint solvent exposure levels for Service Mechanics - Painters. Additionally, during the recent Baseline project, it was discovered that paint solvents interfere analytically with determination of chlorinated hydrocarbon exposure levels for painters working in the Derivatives Plant.

Purpose

1. Collect personnel monitoring data to provide a preliminary exposure profile for painters applying non-water soluble paints.

2. Complete the chlorinated hydrocarbons "Baseline Profile" for painters working in the Derivatives Plant.

Scope of Project

Collect 30 samples:	Derivatives	- 15
	Plant A	- 5
	Plant C	- 5
	Complex Paint Shop	- 5

Derivatives employees will be sampled first to allow completion of the missing element for the Baseline project.

These samples will have to be analyzed using G.C.-Mass Spec. techniques. An outside laboratory has been located which can perform this service. Cost will be approximately $200.00 per sample.

Coordination

The Environment Lab group will handle collecting, and sending out the samples for analysis. The cost for the outside lab will be covered under the Industrial Hygiene budget (4301-02-61245, this project only).

The Safety Group will identify for the Lab those jobs and times where it will be possible to catch the samples. Data entry and reporting will be handled as for normal monitoring activity.

Timetable

Final Report ---------- before 11/15/88

VI. Summary and Approvals of Scheduled Monitoring Activity for 1988

Section	Item	Number of Samples
I. Core	Asbestos	131+
	Vinyl Chloride	57+
II. General	Chlorine	52
	CPC (& related)	44
	Chlorinated hydrocarbons	52
	Hydrogen Sulfide	9
	Mercury	36
	Silica - crystalline	12
	Synthetic Precip. Silica	12
	Welding Fume	12
III. Noise	Noise dosimetry	100
IV. Medical Approval	Chlorinated hydrocarbons	650
V. Special Project	Paint Solvents	30
GRAND TOTAL 1988 MONITORING		1,197+

Approvals:

Jon C. Shepherd
Sr. Safety Engineer/Ind. Hygiene — Date: 8/11/88

R. J. McCorquodale
Manager of Safety — Date: 8/11/88

J. E. Wyche
Coordinator, Environmental Systems — Date: 8/12/88

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Date: 4/88
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APPROVALS:

INDUSTRIAL HYGIENE MONITORING

I. Purpose

This bulletin communicates the structure and procedures associated with the Lake Charles Industrial Hygiene Monitoring Program.

II. Introduction

Industrial Hygiene Monitoring is the principal means of evaluating employee exposure, or potential exposure, to hazardous physical agents (such as noise) and chemicals (such as chlorine, solvents, etc.). Evaluation of exposure to these agents is important for three reasons:

- Determining the need for and proper level of controls, both engineering and protective equipment, to work safely with or around hazardous agents/ chemicals.

- Developing "Employee Exposure Profiles" to provide information for the Plant Physician when assessing employee health status.

- Insuring compliance with applicable corporate policies and governmental regulations.

III. Program Administration

It is the responsibility of the Safety Department Industrial Hygienist to oversee the operation and administration of the Lake Charles Industrial Hygiene Monitoring Program. This includes, but is not limited to:

- developing the monitoring plan,
- compile statistical analyses of monitoring data,
- maintain records associated with employee notification,
- review and/or recommend needed corrective actions indicated by monitoring results,
- coordinate special monitoring activities requested by the plant,
- coordinate sampling activities conducted by non-laboratory personnel.

IV. Environmental Laboratory

It is the responsibility of the Environmental Laboratory group to:

- conduct all second shift (daytime) personnel and area air monitoring,
- conduct, or arrange for, all sample analyses required by the Industrial Hygiene Program,
- insure that necessary quality assurance/control procedures are utilized for all I.H. analyses conducted at the Lake Charles facility,
- insure that comparable quality assurance/control procedures are used by any outside laboratory to which samples are sent for analysis,
- notify the employee, the employee's supervisor, the Medical Department, and the Safety Department Industrial Hygienist of the results of air monitoring samples,
- enter sampling data to the General Office computer database on a timely basis.

V. Supervisor Responsibility

It is the responsibility of all supervisors to:

- communicate the results of personnel monitoring to affected employees in a timely manner. (In most circumstances, this means within five working days of the receipt of the results.)
- investigate the reason for any result which exceeds the PPG Internal Permissible Exposure Limit; propose/implement corrective action(s) which will eliminate or reduce the chances of a recurrence of such exposures; and review such actions with the employee.
- insure that individuals being monitored wear the monitoring device(s) properly and at all times during the period being sampled.
- immediately notify the Environmental Lab Group or the Safety Department of any problems with the monitoring equipment which is reported to them by the employee being sampled.

VI. Employee Responsibility

The active cooperation of an employee during collection of an industrial hygiene sample is vital to the accuracy and usefulness of the result. It should also be understood that, because of the importance of personnel monitoring to the overall Safety and Health Programs at Lake Charles, participation in sample collection activities is considered a condition of employment. Also, any employee who deliberately tampers with a sample or sampling device will be subject to disciplinary action.

It is the responsibility of an employee being monitored to:

- keep the sampling device(s) on their person at all times during the period being monitored.
- exercise due care to prevent damage to the device while in their possession.
- report any apparent malfunctions or problems to their supervisor immediat ly.
- give a complete description of activities at the end of the sampling period to the person collecting the sample. Special mention should be made of any unusual occurrences, which could have resulted in additional or excessiv exposure to the agent(s) being sampled.

VII. Notifications & Reports

A. Medical Department Notification

The Plant Physician receives a report on all valid personnel monitoring samples which are collected. This data is used during employee examinations and/or consultations to provide the physician with information regarding occupational exposures. This enables a better assessment f employee health.

B. Supervisor/Employee Notification

All employees who participate in collecting industrial hygiene monitoring data will be informed of their results. In the event that a collected sample is voided by the Environmental Laboratory, the employee sampled will be notified of that fact and the reason(s) for voiding the sample.

Two different forms will be used for this purpose.

1. Employee/Supervisor Notification (example attached)

This notice will be sent to the employee's Area Supervisor/General Foreman. It must be reviewed with the employee within five working days. The employee and supervisor should sign and date the form in the spaces provided. This signature just acknowledges that the employee has seen his/her results. Also, if any result exceeds the PPG Internal Permissible Exposure Limit for that compound an "investigation" form will be attached (see "C" below for additional details). After the form is signed, it must be returned to the Safety Department Industrial Hygienist.

2. Employee/Supervisor Voided Sample Notice (example attached)

There are many reasons that might cause a sample to be voided. Pump failure, collection device overloading, or analytical accident are examples. The primary criteria, however, is the Laboratory's evaluation that a sample result is unreliable.

When this occurs, a Voided Sample Notice will be sent to the employee's Area Supervisor/General Foreman. The form must be reviewed with the employee within five working days. The employee and supervisor should sign and date the form. As above, the employee's signature just acknowledges that he/she has seen the report. After signing, the form should be sent to the Safety Department Industrial Hygienist.

C. Investigation of Employee Exposures

If analysis of an industrial hygiene sample reveals an exposure greater than the applicable PPG Internal Permissible Exposure Limit - an "Investigation of Employee Over Standard Exposure" report must be completed (example attached).

This report is similar to an accident investigation form in that it asks why the exposure occurred, what will be done to prevent recurrence and when that action will be completed. Prevention is the key word.

Sometimes the samples are collected in a known high exposure situation. In such an event, the proper personal protective equipment was (or should have been) worn to prevent the employee actually being exposed to the hazard.

Where this is the case, the investigation should focus on two elements. First, was the PPE used appropriate? Second - is there some change (procedure change, engineering control, etc.) that could be made to eliminate the exposure and the resultant need for PPE?

The employee must be involved in these investigations. Only rarely will sufficient information be available to determine the cause of exposure without an employee interview. After all the facts are assembled and the remedial action is decided upon, the employee and supervisor should sign the form. It should then be sent to your respective Area Safety Representative.

SAFETY BULLETIN

The Area Safety Representative will review the investigation, follow-up to assure corrective action is completed, and forward the closed investigation to the Safety Department Industrial Hygienist. The Area Safety Representative will also inform other areas of potential problems, where appropriate, to enhance the preventive nature of the investigations.