



INTEROFFICE

DATE

TO MR. C. J. KLEINERT

FROM F. F. HOY/K. H. GARNER

REFERRING TO LETTER OF

SUBJECT

APPENDIX

This section outlines in brief notes the comments made by the representatives of the various companies.

AIR PRODUCTS - JOHN BARR (Open Air Plant)

Average VCM Readings: <1 to >2. In one month, 400 excursions over 10 PPM out of 50,000 readings.

Number of Points: 20 to 30 points per plant

Sampling Methods: Bendix GC and computer, picks out averages and high points, carbon tubes for personnel monitoring, dissolve in THF

Masks: Half face, continuous flow, will wear all the time after April 1, few canisters, too expensive for regular use

Physicals: Mandatory - no objections

Contractors: 10 to 15 regulars for each plant, company handles these. Non-regulars--their responsibility. Below 5 PPM outsiders can stay 45 minutes per day without effect (telephone, etc.)

Residual VCM: Homopolymer regular MW <5 to 50 PPM, spec 50 PPM Copoly >50 ~100 PPM

ALLIED CHEMICAL (Open Monomer Plant)

Average VCM Readings: 0.3 - 0.7 PPM Many excursions above 5 PPM, especially in pump area, personnel 0.05 average for 3 months, 0.19 high, down from 2.85 PPM a year ago, no one over action level since September, 1975

Number of Points: 2 - 10 pt. systems

Sampling Methods: Bendix GC with flame ionization, computerizing now

OCC 5311

ALLIED CHEMICAL (cont.)

Masks: Canisters and Scott Air Paks, tank car loaders - air line from cylinders

Physicals: Net yet requiring?

Contractors: None in regulated areas

Miscellaneous: Have converted 80% of tank cars from slip gauges to magnetic gauges. Slip gauge emissions are run to incinerator

AMERICAN CHEMICAL, CALIFORNIA (Now Stauffer) HERB LANGER

Average VCM Readings: Personnel 70% below 1.0 PPM, 30% 1.0-3.5 PPM, plus excursions

Number of Points: Installing 90 points, feels it is too many

Sampling Methods: Sipin pump and bag for personnel

Masks: Air

Physicals: Removed one person from regulated area, went as far as biopsy - not VCM related not in regulated areas, have contract maintenance, treat as regular employees

Residual VCM: <10 PPM in Homopolymer, 50-100 PPM in copolymer

ATLANTIC TUBING (New Plant, On Stream One Month)

Average VCM Readings: None taken

Number of Points: No area monitoring

Sampling Methods: No samples taken

Management has taken the position they will spend no money on this until need is shown. In the meantime, state OSHA people have approved plant operation on the basis that the company has checked with portable monitors and said they have no leaks. Ed Biehl as he reported this said he expects the roof to fall in any day.

Masks: Scott Air Paks

Physicals: Mandatory

Contractors: None in regulated areas

Residual VCM: No test data yet

ATLANTIC TUBING (cont.)

Miscellaneous: Had major problem with state air quality people. Had consulting company spend three months gathering data to satisfy them. Extensive off-site monitoring at Atlantic Tubing expense.

BORDEN

Average VCM Readings: 1-5 PPM, expect soon to be at 1-3 PPM

Sampling Methods: Now Bendix hydrocarbon detector, installing Bendix GC with computer
Personnel - Sipin pump and tube with Bendix flasher system

Masks: Air line or canister - issue daily

Physicals: Mandatory - complete physicals, well received have detected several cancers not related to VCM and have saved at least one life, possibly a second.

Residual VCM: Not measured

CERTAINTTEED

Average VCM Readings: 0.5 to 1.5 PPM above background reading of 2-3 PPM hydrocarbon

Number of Points: 30 points

Sampling Methods: Miran but adding GC system - Check 200 points/day with Century, Personnel - carbon tubes and head space with Perkin Elmer (not sold in carbon tubes)

Masks: Full and half face continuous flow

Physicals: Mandatory - well received

Contractors: Not many used but burden is entirely on the contractors

Residual VCM: Pipe grade Avg. 25 PPM. maximum 50 PPM

CONTINENTAL OIL (Comments on PVC Plants)

Average VCM Readings: Have 242 employees, 17 in reactor area with 8 hour TWA over 1 PPM, average 3 PPM 95% confidence level of 18.1 PPM, this was not clear - What he was trying to indicate was that exposures are variable.

CONTINENTAL OIL (cont)

Number of Points: 30 points

Sampling Methods: Honeywell with range of 0-10 PPM
Personnel 8 hour sample each month with
Sipin SP2P pump and bag

Masks: Canisters and Scott Air Pak
25-1000 PPM - half face continuous with
Nash Actively seeking a half face piece
transfer mask and will seek variance to
avoid full face piece masks for some jobs
where they consider them a safety hazard

Physicals: Mandatory - no objections yet
Considering a medical van

Contractors: Using many contractors on construction,
require compliance but burden is on con-
tractors. Offer medical surveillance as
option

Residual VCM: Test each shipment, January summary for
largest volume resin was 2.9% <1.0 PPM,
45.7% 1-10 PPM, 37.1% 10-25 PPM, 14.3%
>25 PPM

DIAMOND SHAMROCK (2 PVC Plants - Delaware City and Gulf Coast)

Average VCM Readings: Gulf Coast - open air -- poly area 0.5-
2.0 PPM average, less excursions than Dela-
ware City
Delaware City - 1-3 PPM, January very bad
for excursions, illustrates benefit of
open air plants

Number of Points: 48 points and 80 points

Sampling Methods: Arcas and computer
Personnel - carbon tubes

Masks: Canister and half and full face air masks
Some jobs will always require air line
masks - Held a week of full dress test
at Delaware City, many canisters used
90% of employees had to use a mask at
least once during each day. In this older
plant they expect continuing problems,
would like a transfer mask

Physicals: Mandatory, emphasized sensitivity of SMA
to alcohol intake

DIAMOND SHAMROCK (cont)

Contractors: Using large crews on construction, for semi permanent outside contractor employees same program as for their own employees, for short termers it is contractors burden.

Residual VCM: Sometimes $\angle 10$ PPM, always $\angle 50$ PPM, depends on storage and temperature

DOW CHEMICAL (3 monomer plants, 2 copolymer plants - monomer plants open air)

Average VCM Readings: Monomer Plants $\angle 1.0$ PPM plus excursions some personnel samples above 1.0 PPM
Copoly Plants $\angle 1.0$ PPM at one plant, 1-4 PPM at other plant plus excursions both plants.

Number of Points: 12, 30, 36 points at monomer plants

Sampling Methods: Gas chromatographs plus portable meters
Personnel - tubes

Masks: Air and canisters

Contractors: Contract Maintenance - treat as employees
Outside - explain with video tape and place burden on contractor

Residual VCM: $\angle 5$ PPM in copolymer

Miscellaneous: Use EDC or oil in double sealed pumps
Expect to deregulate both copolymer plants but admitted some deregulated areas may have excursions. This is one of the inconsistent positions we noted.

ETHYL-VCM PLANT

Average VCM Readings: $\angle .5$ to 1.0 average plus excursions

Number of Points: 10

Sampling Methods: Have Miran but switching to GC with computer
Using carbon tubes because Miran does not work

Masks: Canister and air - not finalized

Physicals: Mandatory - no refusals

Contractors: Burden on contractor, help with hardware and training

ETHYL - PVC PLANT

Average VCM Readings: 1-2 PPM plus excursions above 25 PPM
68% of personnel readings in reactor area
are below 1.0 PPM
Miran shows 1.0 above background plus excursions

Sampling Methods: Miran, carbon tubes, Century Portable
Good results with large carbon tube, working
with head space method

Masks: Installing air line, will carry masks,
presently canister - Will deregulate all
but poly area

Physicals: Same as VCM plant

Contractor: Same as VCM plant

Residual VCM: Low RV Homopolymer 3-10 PPM, Higher MW
1-5 PPM Emulsion grade <3 PPM

Miscellaneous: Deputy Directory NIOSH on 2/5 told Ethyl
Medical Director by telephone there is under
development a 10-12 hour inexpensive mask
with takes up VCM on inhalation and releases
it on exhalation. Not allowed by standard.
Also mentioned the possibility of a nine
month extension of the optional use of
masks

GENERAL TIRE - HARLAN JEWITT

Average VCM Readings: Control room <0.5, poly floor 1.0 PPM
Finishing and bulk areas <1.0 PPM
Workshop is a problem area
T/F is problem area but unattended

Number of Points: 16 points

Sampling Methods: Flame ionization, also Miran for VCM and
THF, (they clean with THF)
Carbon tubes, Bendix Flasher
Head space method - some problems

Masks: Canisters and air line
Warehouse - will issue one canister per
day to truckers
URW called in OSHA to complain of rust in
breathing air

Physicals: Mandatory - no objections
Use a medical van and like it. Will give
information if requested. (They have a
female who is pregnant. They are a little
concerned.)

OCC 5316

GENERAL TIRE (cont)

Contractors: Provide booklet and make contractor responsible

Residual VCM: 50 PPM max.
Extrusion grade 10 PPM max. 1-3 PPM typical
Calender grade 50 PPM max. 15 PPM typical
Copoly 50 PPM max.

Inconsistencies in this presentation.
Tank farm cannot be always unattended.
Finishing and bulk areas were said to be less than 1.0 PPM but canister masks will be issued to warehouse truckers.

GEORGIA PACIFIC PLAQUEMINE - Open Air

Average VCM Readings: Less than 1.0 PPM, TWA 0.25 - Computer never calculated any area to be over 1.0 PPM
TWA - Reactor and TF areas regulated
Personnel samples for mechanics and lab people sometimes show over 1.0 PPM TWA
Referred to occasional large spills

Sampling Methods: Bendix GC, alarm at 1.0 PPM - carbon tubes

Masks: Air line masks for exposures
(not a consistent presentation)

Physicals: Mandatory - no objections

Contractors: Evacuate above 1 PPM, log in and monitor with area monitors

Residual VCM: General purpose pipe resin
95% <10 PPM, 90% <5 PPM, 60% <1.0 PPM

Miscellaneous: Monitor boundaries and log with computer

B. F. GOODRICH - HENRY WALTEMATE

Average VCM Readings: 0.5-4.0, new poly plant <0.5 PPM and not regulated - Personnel 0.5 - 1.5 PPM

Number of Points: 10 per area

Sampling Methods: Changing from total hydrocarbon analyzer to GC. Will use flasher - Use head space for residual VCM but don't like it for personnel

Masks: Half face air, canisters - Run "April 1" trials occasionally for one day - Have approval from Washington to use half face piece with canister for less than 10 PPM.
Approval from Grover Wrenn

B. F. GOODRICH (cont)

Contractors: Regular contractors treated same as employees. Have Kentucky OSHA approval to consider contractors not covered by standard if they evacuate at 5 PPM

Residuals: GP with strippers ≤ 1 PPM, Paste resin 10 PPM variable

Miscellaneous: Said you can be cited for > 5 PPM even with all personnel in masks. If any are without masks, this is a second citation

GOODYEAR - NIAGARA FALLS (shutdown half, working now like after April 1)

Average VCM Readings: 0.3 average plus excursions
Personnel ≤ 0.5 PPM 8 hour TWA

Number of Points: 10 points going to 20

Sampling Methods: Bendix, 8 hour carbon tubes with Sipin pump
Bendix alarms at 5 PPM and people put on masks. (This is not truly like April 1)

Masks: Half face air line, no canisters

Physicals: Mandatory

Contractors: Evacuate at 5 PPM, take position not covered by standard

Residuals: One dispersion type average 5 PPM other not labelled

Miscellaneous: Cleaning reactors with THF, rarely open them

GOODYEAR - LOUISIANA

Average VCM Readings: 1.5 PPM average
Personnel 38% ≤ 0.5 PPM, 63% ≤ 1.0 PPM, 17.5% 1-5 PPM, 0 over 5 PPM

Number of Points: 20 points

Sampling Methods: GC, planning alarms, checking with Century carbon tubes

Masks: Half face, continuous flow - no canisters but may have to use them

Physicals: Mandatory, well received

Contractors: Contract Maintenance - like employees
Outside - burden in on contractor

OCC 5318

GOODYEAR (cont.)

Residual VCM: 35-40 typical, max. 50 PPM

Miscellaneous: Valve leaks a big problem

GREAT AMERICAN - J. FLOROS

Average VCM Readings: 1.4 average, Personnel 60% $\leq$ 1 PPM

Number of Points: 60 points

Sampling Methods: Arcas with computer - 8 hr. bags for personnel

Masks: Half face, continuous - using them 4 hours per shift, few problems

Physicals: Mandatory, no refusals

Contractors: Provide masks, burden on contractors

Residual VCM: 10 PPM max. - customer requirement
3 PPM typical for higher MW

HOOKER

Average VCM Readings: $\leq$ 3 PPM average, 10-12 excursions above 5 PPM per day

Number of points: 40 points

Masks: No canisters

Physicals: Mandatory but in in arbitration now

Contractors: Burden on contractor, provide nothing

Residuals: $\leq$ 10 PPM

KEYSOR CENTURY - KEN LAW

Average VCM Readings: 3-4 PPM plus excursions

Sampling Methods: Installing area monitors - Hewlett Packard
9 points

Masks Full face continuous flow and self contained

Physicals: Mandatory, no objections

Contractors: None used

PANTOSOTE - JIM FARREL

Average VCM Readings: 1-3 PPM in Passaic, 3-8 in Pt. Pleasant
2.3 PPM personnel

Number of Points: 18 points in poly area

Sampling Methods: EOCOM computerized in Passaic - OSHA
approved for personnel monitoring
Miran in Pt. Pleasant

Masks: Half face to 1000, then Scott Air Pak

Physicals: Mandatory, no objections

Contractors: Give orientation - evacuate

Residual VCM: 10-50 PPM, working on this

PPG - LAKE CHARLES VCM PLANT

Average VCM Readings: 40.5 PPM, one excursion per 3 days

Sampling Methods: Arcas, moving probes away from leaks
Computerizing now

Masks: Positive demand air and continuous

Physicals: Rejecting 60% of applicants
No females capable of becoming pregnant
used in VCM areas - Instituted discussions
with OSHA and EEO - EEO backed off

Contractors: None used

PPG - PUERTO RICO

Average VCM Readings: 41 PPM, storage area 43 PPM
Personnel TWA 41 PPM

Sampling Methods: Bendix, carbon tubes, Sipin pump

Masks: Air line, use masks regularly on certain
jobs

Physicals: Mandatory

Contractors: In house - same as employees
Others - burden on contractor

SHELL - DEER PARK

Average VCM Readings: 0.04-0.07 PPM average for 24 hours
94% less than 1 PPM
few excursions over 5 PPM

Number of Points: 20 points

Sampling Methods: GC

Masks: Half face, no canisters, use masks regularly on some jobs, Scott over 100 PPM

Contractors: Burden on contractors - evacuate

Miscellaneous: Process area considered regulated only during start up and shutdown

STAUFFER DELAWARE CITY - BILL HAGAR

Average VCM Readings: Area 0 to >5
Personnel 0.2 to 2.0

Number of Points: 50 points

Sampling Methods: 5-10 points Arcas units
Bags for personnel

Masks: All use them - air line

Physicals: Mandatory

Contractors: Handle program for regular contractors
Others - no coverage

Residual VCM: Homopolymer 5 PPM
Copoly 100 PPM

TENNECO - PETE BOGART (Plant A-Burlington, B-Flemington, C-Pasadena)

Average VCM Readings: 1-3 PPM

Number of Points: 60-80 points per plant

Sampling Methods: Bendix, computerizing
Pasadena has remote control room

Masks: Must carry air mask and plug in at 5 PPM
Will use canisters
Using bottled air but installing compressors
Complaints of nose bleeds with bottled air
Others agreed
Complaints air is too cold
Will humidify
Certain jobs are mandatory air - reactor cleaning and unloading

TENNECO (cont)

Physicals: Mandatory, no objections
Make no blood tests after paydays or
Mondays - effect of alcohol
Same for lead tests

Contractors: Using many, burden on contractor, will
provide masks

Residual VCM: Mostly below 10 PPM, some below 1 PPM

UNION CARBIDE - South Charlestown - sol'n & disp
Texas City - sol'n & susp
Comments mainly on suspension

Average VCM Readings: 1.5 PPM, poly 2.0 PPM, recovery 2-3 PPM

Sampling Methods: In house flame ionization system
Carbon tubes

Masks: Canister and air line from bottles, Scott
Air Pak

Physicals: Optional, 6 refusals

Contractors: Slide tape training program, otherwise
burden is on contractor

Residual VCM: Sol'n. resin <1 PPM
Suspension homo typical .5 PPM, max. 10 PPM
ViAc copoly <300 PPM get poor color when
stripping harder

NORSK HYDRO - (Revisions complete, production almost normal)

Average VCM Readings: Average <1 PPM, typical 0.5 PPM
Personnel - same
During January and February, area 1.5 PPM
personnel 1.3 PPM, cold months, closed
plant

Number of Points: 12 points

Sampling Methods: Bendix with computer, alarm at 15 PPM
Carbon tubes and Sipin pump

Masks: Air line and canisters

Physicals: Twice yearly

Contractors: Few used but treated same as employees

Residual VCM: <5 PPM for low BD types
<50 PPM for high BD types