

w. j. wilcox

TO Plant Managers	FIELD POINT OR ADDRESS (DEPARTMENT & BUILDING NO.) VC1 Polymerization Plants	DATE YOUR LETTER January 4, 1974
FROM A. M. Fairlie	FIELD POINT OR ADDRESS (DEPARTMENT & BUILDING NO.) Cleveland	DATE THIS LETTER January 4, 1974
SUBJECT		

Initial Plan for VC1 Vapor Sampling Program

INTRODUCTION

The Plan which follows outlines the VC1 vapor sampling program for the plants as we anticipate its development. It also describes the initial survey in more detail (lasting for one week) and the second phase with the OVA tests which should begin immediately afterward.

More planning is needed as to methods of data analysis and to the details of the second phase of OVA sampling. We plan to complete these as early as possible next week and will keep you advised. To enable the plants to move quickly, we propose having the PIC Engineers analyze data on site. To expedite the analysis and standardize the method, we may call the PIC Engineers in for a one-day meeting unless we feel it can be adequately spelled out in a letter.

PLANS

1. Overall Plan

- a. Survey polymerization area (4-5 days)
- b. Set up and install routine OVA sampling program (1-3 months)
- c. Take immediate action on high vinyl chloride locations
- d. Set up and install Bendix Continuous Monitoring System
- e. Study other plant areas (drying, etc.)

2. Prepare Survey Plan

- a. Make diagram of each floor showing all equipment
- b. Select at least thirty points per building -- include various possible VC1 sources
 1. refer to enclosed ALGC list -- Table 1 -- as a guide (all buildings are different)
 2. make list of sampling points selected and put them on the prototype data sheet attached -- Table 2 -- (show locations exactly on floor diagram)
- c. Prepare final data sheet for use in plant; it should appear approximately as the prototype sheet

3. Execution of Survey Plan

- a. Make sure equipment has been calibrated in an appropriate VCl concentration zone according to the procedures outlined in the OVA Instruction Manual. Calibrations should be done at least once per week. Doug Rider of ALGC is preparing a standard calibration procedure to be issued as soon as possible. Call him if you have any questions.
- b. Start survey immediately in all plant buildings where VCl and/or VCl₂ polymerization occurs.
- c. Collect 2-3 sets of data per shift, sampling all 30 (or more) points in each building. Sampling rounds should be about 2-3 hours apart. Sampling for each day may be done within one shift or across two shifts during this initial survey. However, cover all shifts equally.
- d. Carry survey out for 4-5 days during the first week, collecting at least ten samples at each sample point.

4. Analysis of Survey Plan (to be done within each plant by the PIC Engineer)

- a. Identify approximately six points per building which represent average vinyl chloride concentration at any time plus being sensitive to upsets. (PIC Engineers will be advised how to perform this analysis.)
- b. Identify high vinyl chloride concentration areas so that corrective action can start immediately.

If the initial survey experienced no serious difficulties, especially in performance of the OVA instrument, this completes Item (a) in the overall plan.

5. 1-3 Month OVA Study (Item b in the Overall Plan)

- a. To begin during the second week.
- b. Sample the six points per building determined in Step 4, above.
- c. A detailed sampling plan will be provided in the near future. This plan will tentatively cover each shift at least twice a week.
- d. This plan will be provided with action rules which indicate when the foreman (or some other appropriate person) must sample a high VCl concentration area in depth and identify and correct the problem if possible.
- e. Each high vinyl chloride occurrence must be noted in a record book for level, location, cause, and solution of the problem.

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This log should be used in plant meetings to initiate permanent corrective action.

6. Analyze Results in Step (5) to Determine Where and How the Bendix Continuous Monitoring System Should be Installed

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AMF/clb

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DATE
TIME

FIRST FLOOR OF
Vent. Cond. *

- 1 Transfer Pump (BT 1)
- 2 BDT 2-3
- 3 Transfer Pump (BT 4)
- 4 BDT 4-5
- 5 Transfer Pump (BT 6)
- 6 Refrigeration Comp.
- 7 Seal H₂O System
- 8 CTW Chromate Trt.
- 9 HRC Pumps
- 10 VCI Pumps
- 11 Exhaust Fans **

SECOND FLOOR OF
Vent. Cond.

- 12 BDT 1
- 13 BT 2
- 14 BDT 2
- 15 BDT 3
- 16 BDT 4
- 17 BDT 5
- 18 BT 5
- 19 BDT 6
- 20 S. Pump set (Recovery)
- 21 N. Pump set (Recovery)
- 22 Scale Tk
- 23 Exhaust Fans

THIRD FLOOR OF
Vent. Cond.

- 24 Pigment Room
- 25 Polys 201-202
- 26 Polys 205-206
- 27 Polys 209-210
- 28 Polys 213-214
- 29 Vacuum jets
- 30 Foam Trap Tk
- 31 Scales
- 32 Metering Station
- 33 Control Room
- 34 Exhaust Fans

* No of fans operating, speeds, no of air changes/minute, as appropriate
 ** Locations as appropriate

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TABLE 2 - PROTOTYPE DATA SHEET

PLANT _____ BUILDING _____ OPERATOR _____

DATE
TIME

FIRST FLOOR

SECOND FLOOR

THIRD FLOOR

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TABLE 3

EXAMPLE OF SURVEY TIMES
THREE BUILDINGS - FIVE DAY STUDY

1ST DAY		2ND DAY		3RD DAY	
TIME	BLDG	TIME	BLDG	TIME	BLDG
0800	1	0800	1	1600	1
0810	2	0830	2	1630	2
0900	3	0900	3	1700	3
1030	1	1030	1	1830	1
1100	2	1100	2	1900	2
1130	3	1130	3	1930	3
1300	1	1300	1	2100	1
1330	2	1330	2	2130	2
1400	3	1400	3	2200	3

4TH DAY		5TH DAY	
TIME	BLDG	TIME	BLDG
1600	1	0030	1
1620	2	0100	2
1700	3	0130	3
1830	1	0300	1
1900	2	0330	2
1930	3	0400	3
2100	1	0530	1
2130	2	0600	2
2200	3	0630	3

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