

Interoffice Communication

To Mike Hayes
 From M. G. Jakel
 Date March 9, 1981
 Subject 1981 Environmental Protection Agency Inspection
 Problem Areas and Action Steps

The Environmental Protection Agency (EPA), National Enforcement Investigation Center (NEIC), conducted an inspection of the VCM Plant from January 14 through January 28, 1981 as a consultant to the Region VI EPA. The inspection overall was very positive and NEIC personnel were very pleased with the plant's efforts and organization of records and information. They were particularly pleased with laboratory and instrument recordkeeping. However, some problem areas were discovered and are as follows:

- 1) The number of bypasses of the Thermal Incinerator.
- 2) The number of NESHAP violations occurring in the Oxychlorination Unit Vent.
- 3) Unreported NESHAP violations occurring in the Oxychlorination Unit Vent.
- 4) Missing and unorganized wastewater treatment facility strip charts.
- 5) Minor laboratory problem areas in the NPDES analysis procedures.

Due to Conoco's commitment to total compliance and the fact that enforcement action can be brought against the company for most of the mentioned areas of concern, appropriate steps must be taken to reduce the "technical" violations.

Attached is a discussion of these problem areas and the appropriate action steps which the VCM Plant will take or already has begun in order to comply with the problems discovered by NEIC.

If there are any questions or suggestions please call me at ext. 5049.

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Discussion of Problem Areas and Corrective Action Taken

Incinerator

According to NEIC personnel, the number of bypasses of the Thermal Incinerator will be brought forth in their final report of this inspection. Bypasses of the Thermal Incinerator are already reported to the EPA as a vinyl emission non-compliance as required by Section 61.70 of the Vinyl Chloride Emission Standard. NEIC personnel were told of the redundant Thermal Incinerator and that the compliance factor is generally always near 99%. Most bypasses that occur are in the order of minutes or hours and the number of bypasses since startup of the Thermal Incinerator in January, 1979 are listed in Table I. Process Engineering will review the causes of past bypasses and conduct an evaluation of the operation of the Thermal Incinerator to determine appropriate action which can be taken to minimize these bypasses.

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TABLE I
BYPASSES OF THE THERMAL INCINERATOR
VCM PLANT

<u>Time Period (1)</u>	<u>Number of Reported Bypasses</u>
Oct. 19, 1978 - March 13, 1979	29
March 13, 1979 - Sept. 13, 1979	28
Sept. 13, 1979 - March 13, 1980	37
March 13, 1980 - Sept. 13, 1980	18

Note:

- 1) Time period covered by semi-annual report issued as required by the Vinyl Chloride Emission Standard.

TABLE II
NESHAP VIOLATIONS IN OXY VENT
VCM PLANT

<u>Time Period (1)</u>	<u>No. of Reported Violations</u>	<u>No. of Unreported Violations</u>	<u>Reporting Compliance Factor</u>
Oct. 19, 1978 - March 13, 1979	88	5	95%
March 13, 1979 - Sept. 13, 1979	21	4	84%
Sept. 13, 1979 - March 13, 1980	33	4	89%
March 13, 1980 - Sept. 13, 1980	24	15	62%

Note:

- 1) Time period covered by semi-annual report issued as required by the Vinyl Chloride Emission Standard.

Oxy Vent

The number of NESHAP violations occurring in the Oxychlorination Unit Vent will also be brought forth in the NEIC final report. Vinyl hourly average emissions in this vent of 0.2 (g VCM)/(Kg EDC produced) or more are already reported to the EPA as a vinyl emission non-compliance as required by Section 61.70 of the Vinyl Chloride Emission Standard (See Table II). Usually, the NESHAP violations are of short duration times and the daily hourly average is below the violation limit for days with reported violations. With the VCM Plant Expansion on stream in the 2nd quarter of 1983 the Oxychlorination Unit Vent will be incinerated thereby eliminating the NESHAP violations. Currently, the Interdata Computer System including its alarm system is used to monitor the Vinyl emissions in the vent. When two consecutive VCM concentration readings of 0.2 (g VCM)/(Kg EDC produced) or more occur the High VCM Vent Concentration Alarm System is tripped off. An additional alarm mode will be added to this program and in operation by May, 1981 to help reduce NESHAP violations. This alarm mode will be tied into the existing High VCM Vent Concentration Alarm System and will be tripped off when the average VCM concentration in the Oxy vent reaches a value of 0.17 (g VCM)/(Kg EDC produced) or above during any hourly period. This will forewarn Operations of any potential violations so that corrective action can be taken to prevent a violation.

NEIC personnel checked the number of actual NESHAP violations (0.2 g VCM/Kg EDC produced) in the Oxy vent based on the Interdata Computer daily printouts, which record the hourly average vinyl emission concentrations, for August, 1980. The daily printouts for the month showed a total of 8 NESHAP violations of which only 5 were reported in the semi-annual report to the EPA. Further investigation by the plant found the recording compliance factor for the semi-annual report period covering August, 1980 to be only 62% (See Table II), slightly better than the 60% compliance factor determined by NEIC. Changes in record-keeping are being made to develop a check and balance program to reduce the number of unreported violations. The original Interdata Computer daily printouts are kept on file by the receptionist and copied to JAD, PLF, DLD and the Process Engineer with the Secondary as an area of responsibility. The receptionist will keep track of the days in which daily printouts were received and notify Operations if one has not been received after two days. Daily printouts can be recalled from the computer within a seven day period. It is recommended that the engineer responsible for the Secondary also monitor the days in which daily printouts have been received and notify Operations for days that are not received.

Daily printouts which show a NESHAP violation will be filed in the EPA non-compliance file along with the Oxy violation report sheet filled out by the operators for that day. If a violation report sheet has not been received the Process Engineer will notify Operations. NESHAP violations reported in the semi-annual reports were based on the Oxy violation report sheets contained in the EPA non-compliance file. Unreported NESHAP violations were primarily due to missing and misplaced Oxy violation report sheets. The new record-keeping system will use the daily computer printouts to supplement

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the Oxy violation report sheets and include the receptionist and Process Engineering to ensure that all NESHA violation records are filed for use in the semi-annual reports.

Waste Water

A review of the waste water treatment facility records by NEIC found the 001 and 201 outfall strip charts to be unorganized and missing an important time period. NEIC personnel reviewed the strip charts for October and September of 1980 and noted the minimum pH on the 001 outfall was 6.0 whereas the NPDES Discharge Monitoring Reports (DMR) showed a minimum pH of 7.4 for that month. A review of the operations log sheet showed a pH of between 7.4 - 7.6 on the day of the minimum pH reading based on the redundant pH recorder of the 201 outfall. This resulted in the acknowledgement of the 6.0 pH reading to be an instrument error. However, a 22 hour period of the 201 outfall strip chart covering the time of the 6.0 pH reading was missing and the operations log sheet pH values could not be verified. Further investigation by Process Engineering found several missing time periods and improperly marked strip charts. In order to reduce these problems a rubber stamp will be provided to Operations and the importance of collecting and keeping all secondary strip charts will be stressed. This will include the reorganizing of strip charts by Process Engineering. The rubber stamp will be used for all secondary strip charts initially when they are installed and again when the strip charts are removed. The stamper will ask for the following information: 1) Date, 2) Time, 3) Service (i.e. 201 outfall), 4) Parameters Measured, and 5) Operator's Initials. Any maintenance work or instrument work done on the recorders at the secondary must also be noted on the strip charts by the appropriate personnel. Use of the stamper, reorganization of the strip charts, and stressing the importance of the strip charts will allow Process Engineering to keep better records of the secondary and to notify operations if any problems do arise.

Laboratory

Concerning the laboratory NEIC personnel were favorably impressed with the record-keeping and found only a few minor problem areas in the NPDES analysis procedures. Listed below are the problem areas and the corrective action which was taken. Some of the items listed are only recommendations by NEIC.

A. Total Suspended Solids (TSS) Analysis

- 1) Calibrate the balance daily. This is now being done.
- 2) Analyze a standard lab sample periodically as a cross check. This was done in the past and is now cross checked with an outside laboratory on a quarterly basis. Past methods of running a standard periodically may be revived depending on results from samples taken by NEIC.
- 3) Oven temperature was 1°C off from the required 103 - 105°C range. This problem has been resolved.

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- 4) Calibrate the thermometer. This is being evaluated by J. C. Como to determine if necessary. Results will soon be issued by the lab.
- 5) Need to bring the filter to a common weight by weighing twice. The current procedure results in high TSS readings and this procedure will continue to be used since it is conservative. The procedure will be reevaluated when new permitted TSS limits are issued.

B. Chemical Oxygen Demand (COD) and Ammonia Analysis

- 1) Periodically spike the sample for COD and ammonia. This will be evaluated because current procedure is to run a standard on COD which is more than the EPA requires. Spiking the sample for ammonia will be evaluated.

C. Biological Oxygen Demand (BOD) Analysis

- 1) Periodically run glucose standard. This is a recommendation which will be done. Frequency of running standard is being evaluated by J. C. Como.
- 2) Using Chromic acid for cleaning glassware tends to give problems. Use MICRO (Brand name) detergent for relatively dirty glassware. This is a recommendation which will be done. Only for extremely dirty glassware will Chromic acid be used.
- 3) Depletion rule - EPA recommends running a 2 unit oxygen uptake instead of 1 unit. This will be applied if possible; however, the current procedure is adequate and the most reliable data will be used.
- 4) Calibrate thermometer and record daily temperature on the incubator. This is now being done.
- 5) Rinse glassware twice with deionized water. This will be done; however, it may require a larger water reservoir.
- 6) Calculations are technically incorrect based on EPA standards; however, the procedure employed is more practical and may soon be adopted by EPA.