



VCM Plant

Conoco Chemicals
Continental Oil Company
P.O. Box 605
Westlake, Louisiana 70669
(318) 882-0550

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March 25, 1976

Mr. James F. Coerver
Technical Secretary
Louisiana Air Control Commission
P. O. Box 60630
New Orleans, LA 70160

Dear Mr. Coerver:

Mr. Jack Cearley of CONOCO received a phone call on Wednesday, March 24, from a Mr. A. Brassieur of your staff requesting information on the reduction in photo-reactive hydrocarbon emissions achieved to date in the CONOCO VCM Plant due to completion of the plant's two hydrocarbon compliance projects. In addition, information on any further reduction in emissions expected by the plant in the short term was also requested. As you know, the plant's two hydrocarbon compliance projects were not completed by May 31, 1975, and a revised completion schedule was approved by your commission. The two projects were completed within the revised schedule.

The reduction in photo-reactive hydrocarbon emission information requested is provided below for both compliance projects. The reductions are based on the best information available at present. The plant is continuing to gather emission data on these two projects in preparation for the submittal of an updated Emission Inventory Questionnaire (EIQ) in May, 1976. Please understand that the numbers provided below may well be changed in the EIQ submittal due to better definition of the plant emissions.

Item I - R-305 Catalytic Reactor on Oxychlorination Vent

The vent from the oxychlorination unit contains ethylene and vinyl chloride monomer (VCM), both of which are considered to be photo-reactive. The following table lists the emission rates of these two compounds in the oxychlorination vent before and after installation of the above vent cleanup reactor, R-305.

Oxychlorination Vent Emissions						
	<u>Before R-305 Installation</u>		<u>After R-305 Installation</u>		<u>Reduction In Emissions</u>	
	<u>lbs./hr.</u>	<u>ppm, vol.</u>	<u>lbs./hr.</u>	<u>ppm, vol.</u>	<u>lbs./hr.</u>	<u>%</u>
Ethylene	11.77	6,980	0.16	92	11.61	98.6
VCM	0.82	485	0.21	124	0.61	74.4

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The plant is evaluating the possibility of changing the reactor vent analyzer system to monitor the VCM concentration in addition to the ethylene concentration. It is expected that this change will allow an additional reduction in the ethylene emission of approximately 0.1 lbs./hr. This is the only additional reduction in the oxychlorination vent anticipated in the near future.

Item II - Dock Vent Return Pipeline and Vapor Recovery System

The plant's loading operations can result in VCM emissions when ships and rail cars containing nitrogen are loaded. The nitrogen displaced from the ships or rail cars contains VCM vapors and must be vented. In the past, ship operated recovery units and CONOCO operated, land based recovery units have been used to recover VCM from the loading vent. However, the ship units depend on sea water for cooling and the CONOCO units use air for cooling. To further reduce VCM emissions, CONOCO installed a pipeline to return the ship loading vent to the plant, and a refrigerated recovery system in the plant to process both the ship and rail car loading vents. This system has significantly reduced VCM emissions from loading operations. The plant's best estimates of the VCM emissions from ship and rail car loading before and after the installation of the refrigerated recovery unit and pipeline is listed below.

	<u>Loading Vent VCM Emissions</u>			
	<u>Before</u>	<u>After</u>	<u>Reduction</u>	
	<u>Installation of Refrig. Recovery</u>			
<u>Loading Operation</u>	<u>lbs./hr.</u>	<u>lbs./hr.</u>	<u>lbs./hr.</u>	<u>%</u>
Ships*	2,800	100	2,700	96.4
Rail Cars*	1,600	50	1,550	96.9

* Only for ships and rail cars initially containing nitrogen. When ships or rail cars containing only VCM vapors are loaded, the loading vent can be condensed in the recovery units.

At present, operating problems with the refrigerated vent recovery system have prevented its use on rail car loading. The system has been used for ship loading, which is the greatest source of VCM loading emissions: the majority of the rail cars loaded are under a VCM atmosphere and do not result in a VCM loading vent, whereas most of the ships loaded are under a nitrogen atmosphere. The plant is continuing to improve the operation and reliability of the refrigerated recovery system and anticipates that it will be in operation recovering VCM from rail car loading vents in April.

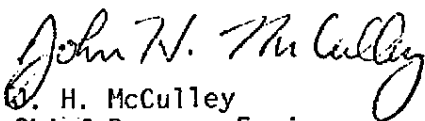
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In addition, the refrigerated vent condenser has recently been modified to increase the condensing pressure. It is hoped that this change will further reduce the VCM emission from ship loading by approximately 50 lbs./hr.

If you have questions about this or need additional information, please contact Mr. Jack Cearley.

Sincerely,


G. H. McCulley
Chief Process Engineer

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CC:
Gus Von Bodungen, LACC
Thomas P. Harrison
Director of EPA Enforcement Div.
EPA, Region VI
Dallas

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