

INTER OFFICE MEMO **TENNECO CHEMICALS, INC.**

TO	W. F. Gabel	AT	Piscataway	DATE	March 26, 1976
FROM	P. M. Reed	AT	Piscataway	COPY TO	R. A. Lojewski G. I. Rozand R. C. Coldiron J. T. Sweeney P. Scarito F. W. Kanzler W. Miringoff
SUBJECT	Initial Testing for EPA Rule				

The proposed EPA regulation will require modification of operating procedures and existing plant equipment in addition to installation of new equipment. Analytical Service and Process Engineering studied the plants in light of the proposed rule and learning curve techniques. From these studies a sampling plan was developed which should define our process problems with a minimum of analytical work. Analytical service will place six (6) employees on 60 hour/week of scheduled work for approximately 5 weeks to do the majority of the testing. Mr. F.W. Kanzler will directly supervise their effort. In addition, the operating department and process engineering will be requested to obtain the majority of the samples. In the attachments, the hand written list of water streams requiring analysis at Burlington are presented. Utilizing this information and the overall requirements found in Table (I), Mr. F.W. Kanzler has estimated man power requirements, which will be found in Table (III). This plan will lead to a reduction of plant analytical service to the minimum. Mr. Kanzler is expected to spend 50 to 75 per cent of his time on the project for the 5 weeks and Mr. Lojewski will supplement him as needed. During the time of the project, no time will be available to do extra VCM in air samples and no extra slurry samples will be taking except as part of the program. The current analysis required by OSHA regulations and the VCM in resin programs will remain at the present level at both plants.

Analytical Service will employ our standard analytical techniques to the samples taken. These methods provide reliable data from which valid engineering calculations can be made. In addition, an internal Analytical Service project has been developed to evaluate the proposed EPA procedures. The first "Method 106 - Determination of Vinyl Chloride from Stationary Sources" will be evaluated by Mr. R.J. Young, since the Pasadena Plant is the only site having sample points in stacks suitable for this method. All other sites will be required to install suitable sample points as specified by the EPA on all stacks discharging to the atmosphere when the rule goes into effect. Evaluation of "Method 107 - Determination of Vinyl Chloride content of in-process wastewater samples, and vinyl chloride content of Polyvinyl Chloride Resin, Slurry, wet cake, and Latex Samples" will be made by Messers. P.M. Reed and R.A. Lojewski with the aid

INITIAL TESTING FOR EPA RULE

of R&D's analytical service at Piscataway.

After the evaluation of the data gathered, a limited sample scheme will be applied to streams at Flemington. Process Engineering will establish conditions which should allow us to be at known VCM levels based on Burlington's data. If the analysis confirms these levels, engineering can proceed to design appropriate equipment. If the data does not confirm the calculated values the process will be reexamined and additional testing will be required.

It is anticipated that the program will be implemented during the week of April 5, 1976. The cost of this approach will be approximately \$900.00 per week above our current labor cost. Assuming the project can be completed in five weeks, the total labor cost will be \$4,500. If recipients of this program can see deficiencies in the plan they are requested to so notify me.


P. M. Reed

PMR:km

TABLE I
INITIAL TESTING FOR
PROPOSED EPA RULE
BURLINGTON PLANT

I. Reactor Openings

A. Refinement of Evacuation Techniques

1. Suspension Plants - Homopolymer and Copolymer

20 openings - 30 samples/opening Completion 4/1/76

2. Dispersion

20 openings - top and bottom samples Completion 4/15/76

II. Stripper Vapor Samples - After Transfer Completion

A. Homopolymer

5 Vapor samples regardless of resin type Completion 4/15/76

B. Copolymer

5 Vapor samples regardless of resin type Completion 4/15/76

III. Slurry Evaluation

A. Homopolymer

1. Refine stripping technique

T-175 4 Samples Completion 6/1/76

2. Slurry Analysis

(T-175) (T-10R) T-200, T-225, T-250, (BR-501)

20 Samples each type = 120 (60) Completion 6/1/76

B. Copolymer

Type	T-314	T-315	T-390	T-391	T-392
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Number of Samples	5	20	20	20	5 = 70 Total
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Completion 6/1/76

III. C. Dispersion

1. ^A~~Burlington~~ Plant only

25 samples/week - 5 days for 3 weeks Completion 5/1/76

2. AR-901

10 samples Completion 6/1/76

IV. Waste Water

A. Total 61 streams - 3 samples/stream

(17) pump streams (Total)

25 Sump or discharge streams ^{TOTAL 44}
_{STREAMS} Completion 6/1/76

B. Special Sampling Procedures to be developed

1. Fume Scrubber

2. Barometric Condenser - Homopolymer not installed

3. Condensate from stripper - Copolymer

3 samples of the above each

FLEMINGTON PLANT

I. Reactor Openings

A. Refinement of Evaluation Techniques

Confirmation of proposed method.

10 openings - 3 samples/opening Completion 4/30/76

B. Stripping Vapor Samples - after transfer completion

5 vapor samples Completion 4/30/76

C. Stripping Testing to be checked for Flemington - Why

D. Water Streams

E.P.S.

Murphy

P. Mathis

Source Streams feeding waste water streams listed below. E.P.E.

✓ Copolymer Recovery MVAC Sumps Overflow.

NOTE: This sump overflows into effluent ditch but is also pumped to the MM Tanks and ultimately drained to #7 Blow-down receiver once every 24 hours.

✓ #1 - Stripper condenser barometric leg

✓ #1 - Stripper after condenser barometric leg

#2 - Stripper condenser barometric leg

#2 - Stripper after condenser barometric leg

#1 - Recovery Line

✓ 1st stage K.O. pot drain

✓ 1st stage compressor drain

✓ 2nd stage K.O. pot drain

✓ 2nd stage compressor drain

✓ 1st - 2nd stage distance piece drain

✓ 1st stage surge pot drain

#2 - Recovery Line

1st stage K.O. pot drain

1st stage compressor drain

2nd stage K.O. pot drain

2nd stage compressor drain

1st - 2nd stage distance piece drain

1st stage surge pot drain

1#1 + #2 Cop. O₂ analyzer K.O. pot drains

#5 - Recovery line

1st stage compressor drain

1st stage K.O. pot drain

2nd stage compressor drain

PVC Recovery System Blow-Down Tank

#3 - Recovery Line (Plus.)

- ✓ 1st stage K.O. pot drain
- ✓ 2nd stage K.O. pot drain
- ✓ 1st stage compressor drain
- ✓ 2nd stage compressor drain

#4 - Recovery Line (Homo.)

- ✓ 1st stage K.O. pot drain
- ✓ 2nd stage K.O. pot drain
- ✓ 1st stage compressor drain
- ✓ 2nd stage compressor drain

#5 - Recovery Line (Homo.)

- 2nd stage K.O. pot drain

#6 - Recovery Line (Plus.)

- ✓ 1st stage K.O. pot drain
- ✓ 2nd stage K.O. pot drain
- ✓ 1st stage compressor drain
- ✓ 2nd stage compressor drain

#7 Blow-Down Receiver

- ✓ #4 Foam K.O. Tank drain
- #5 Foam K.O. Tank drain
- ✓ #4 Interstage Receiver drain
- #5 Interstage Receiver drain
- ✓ #3 - #4 - #5 - #6 O₂ anal. pot drains (headered together)
- ✓ #2 Master Mix Tank drain

#7 Blow Down Receiver (cont.)

✓ PVC Rec. mono. Receiver drain

✓ Plastic'd Rec. mono. Receiver drain

✓ #1 Cop. Foam K.O. Tank drain

#2 Cop. Foam K.O. Tank drain

June 21/

EPA Rule No.	AREA	Compliance Expected		SCOPE	STATUS
		an-Weeks Process Eng	November 1		
61.65(b)(g)(i)	A. <u>REACTOR</u>				
	1. Reactor Wash Water		Yes (Present System)	A closed collection system for the reactor wash water blowdown will be required if closed reactor operation is implemented.	Closed reactor testing required: OC coating devices - July 1, 1976. Closed reactor testing - July 15.
61.64 (a)(1)	2. Reactor Evacuation System	6	No	A carbon adsorptior system will be required on the evacuation pump discharge.	Reactor vapor sampling program being repeated after discovery of leak problem in #4.
61.64 (c)	3. Wet Slurry Screens	1/2	Yes	Modifications to wet screens are required.	Oversize overflow collection system design required August 1, 1976.
61.64(e)(1)(ii)	B. <u>RESIN STRIPPING</u>				
	1. Slurry Tanks	4	Yes	Stripping compliance data to be collected. Round the clock sampling of slurry tanks required.	Stripping data to be completed by June 30.
61.64 (b)	2. Carbon Adsorber	9	Yes	Determine capacity and scale up requirements for expansion.	Regeneration requirements still undefined as a result of unexpected high toluene levels.
61.65(b)(g)(i)	3. Carbon Adsorber Blowdowns	1/2	No	A closed collection system is required.	CAR to be written July 1, 1976.

COLORITE 017333

EPA PROGRAM - ENGINEERING (cont'd)

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EPA RULE No.	AREA	Man-Weeks	Compliance Expected		SCOPE	STATUS
		Process Eng.	November 1			
C. RECOVERY						
61.65(b)(g)(i)	1. Recovery Area Blowdowns	1½	No		A closed collection system for the recovery area blowdown is required.	Collection system designed. CAR to be written July 30.
61.65(b)(g)(i)	2. Caustic Scrubber Blowdown	½	Yes		Blowdown to the caustic wash column as makeup is proposed.	Effect of blowdown solids on caustic wash column being evaluated. Aug. 1
61.65(b)(g)(i)	3. Wash Column	6	No		A closed collection system for the wash column and filter blowdown is required. Reactor discharge valve ramping adjustments required.	Complete.
61.65(b)(g)(i)	4. Caustic Wash Column Blowdown	1½	No		A system for separation and recovery of the VCM, toluene and caustic is required.	A stripping column design is under evaluation. Aug. 1
61.65(b)(6)(i)	5. Heavy Ends	2½	No		Disposal of the heavy ends by various means must be investigated.	Incineration disposal to be tested. August 1.
61.65(b)(6)(ii) 61.65(b)(g)(i)	6. Vessel Clearing System	1½	No		A collection system is required for the water used to displace VCM vapors (to gas holder) in vessels being cleaned.	Collection system design underway. July 1.
D. LOADING						
61.65(b)(g)(i)	1. VCM Transfer Pump Seal Water	1	No		A closed collection system will be required.	Alternates being evaluated. July 15.
61.65(b)(1)(i)	2. Loading Hoses/Sight Glass Blowdowns	1½	No		A closed vapor collection/treatment system is required.	Alternates being evaluated. July 15.
61.65(b)(5)	3. Tank Car Purging	2	No		A closed vapor collection/treatment system is required.	Alternates being evaluated. July 15.

COLORITE 017334

<u>EPA RULE No.</u>	<u>AREA</u>	<u>Man-Weeks</u> <u>Process Eng.</u>	<u>Compliance Expected</u> <u>November 1</u>	<u>SCOPE</u>	<u>STATUS</u>
	E. <u>MISCELLANEOUS</u>				
61.65(b)(g)(11)	1. Water Stream Stripping	7½	No	Evaluation and design of surge tank and stripper for all contaminated water streams is require.. Batch versus continuous and steam vs. nitrogen stripping will be evaluated.	R&D testing underway. August 1.
61.65(b)(6)	2. Sample Bomb Purgings	1	Yes	Purging of sample bombs containing high VCM levels will be to the gas holder.	Purging system design underway. July 15.

6/18/76

COLORITE 017335

PASADENA PVC PLANT
ENGINEERING CONSIDERATIONS
OSHA VCM COMPLIANCE

REACTOR AREA	SCOPE	Breathing Air Req'd April 1	TIMING
1. Use hydraulic cleaning devices in reactors to reduce frequency of opening between batches	Operational testing required.	--	Testing completion target July 15, 1976.
2. Use OC nozzles in reactors to reduce frequency of opening reactors between batches	Additional operational testing required.	--	Testing completion target July 1, 1976.
		--	
4. Install activated carbon adsorption unit to reduce VCM from slurry tank and vent condenser below 10 ppm	Regeneration equipment modifications may be necessary to achieve less than 10 ppm VCM consistently.	No	Regeneration modifications are 95% complete. Operational testing completion target August 1, 1976.
5. Carbon Adsorber Blowdowns	A closed collection system for the liquid blowdowns at the carbon adsorber area is being designed.	Yes	CAR to be complete July 1, 1976.
6. Wet screen and wet screen overflow collection drums	Modifications to wet screens are required. Alternate collection drum contaminant/disposal methods required. Tests are being conducted to determine whether alternate equipment should be used to replace the wet screens altogether.	Yes	August 1 completion target.
8. Reactor Wash Water	A closed collection system for the reactor wash water blowdowns is being evaluated.	Yes	Evaluation completion target July 15, 1976.
9. Evacuation Pump Discharge	Extensions to the evacuation pump discharge stacks are being evaluated.		Evaluation completion target

COLORITE 017336

PASADENA PVC PLANT
ENGINEERING CONSIDERATIONS
OSHA VCM COMPLIANCE (cont'd)

DRYER AREA	SCOPE	Breathing Air Req'd April 1	TIMING
2. Increase Dryer Stack Height	Additional area sampling necessary to define stack extension requirements.	Yes	Evaluation complete. No exposure problem found.
RECOVERY AREA			
1. Recovery Area Blowdown	A closed collection system for the recovery area blowdown is required.	Yes	CAR to be complete July 15, 1976.
2. Caustic Scrubber Blowdown	Laboratory testing is required on a system that has been installed to blowdown the caustic/alumina scrubber water into the caustic wash column as makeup rather than to the sewer.	Yes	Operational target August 1, 1976.
3. Wash Column Backwash Frequency	Smaller mesh filter elements are being tested on the wash column water circulation system to reduce column backwash frequency i.e., VCM discharge rate into the REW pond.	Yes	Complete.
LOADING AREA			
	A closed system for collecting VCM transfer pump seal flush water will be required. A permanent vapor gathering/treatment system will be designed.	Yes	Engineering completion target July 15, 1976.

COLORITE 017337

PLANT SITE: Flemington

DATE: 7/14/76

ISSUED BY: JKS

Tenneco Chemicals, Inc.

Piscataway, New Jersey

PROCESS INVESTIGATION	X	PROJECT DESIGN	U
PROCESS DESIGN	▽	PROJECT ESTIMATE	△
PROJECT INVESTIGATION	◇	D&E COMPLETE/REPT. ISSUED	○
RELEASED TO PROJ. ENG.	*		○
TIME REQUIRED	ESTIMATED	ACTUAL	

Job No.	DESCRIPTION	MANDAYS		PRIORITY	TYPE EST. REQUESTED	% COMPLETE	ORIGINAL ISSUE DATE	ESTIMATED COMPLETION DATE	A-ACTIVE I-INACTIVE	April May June July August Sept. Oct. Nov. Dec.											
		A. Original	B. Revised																		
		PROC.	PROJ.																		
	Centrifuge Overload	N.A.	A-8	2	C	90	9/75	4/76	A		○										
552	A. L. Rees										6										
	Noise Level Control	N.A.	A-5	2	C	100	10/75	4/76	A		●										
565	A. F. Holmes										2										
	VAC Tank Overfill Protect.						3-76														
599																					
	Reactor Press	N.A.		1	A	100	2-76	3-76	A												
600	A. L. Rees																				
	Reactor Ventilation		A-15	1	A		2-76	4-76	A		●										
602	I. A. Rumberg	FANTER																			
	Double Mechanical Seals	N.A.	A-10	1	C	30	2-76	7-76	A												
604	I. A. Rumberg								EPA		2		2		2		2				
	Thiostop System	N.A.	A-9	2	C	100	3-76	4-76	A		●										
606	A. L. Rees																				
	Vessel Openings		A-42	1	C	0	3-76	9-76	A			X		▽		◇		□		○	
1003	E. Schwartz/I. A. Rumberg	DOUGMAN							EPA		5/3		5/3		5/3		3/3		4/3		3/2
	Water Drain/Vapor Recovery	A-10	A-33	1	C	0	3-76	8-76	A					X		◇		▽		□	○
1005	E. Schwartz	DOUGMAN							EPA		8		8		5		4		4		4
	Utilities Review	N.A.	A-40	1	C	0	3-76	9-76	A												
1007	A. F. Holmes								EPA		2		8		10		10		10		
	Pilot Plan EPA Compliance		A-10	1	C	0	3-76	7-76	A												
1012	J. P. Sandstedt	JPS W/M							EPA		3		3		2		2				
SSUB NO.																					

COLORTITE 017383

SCOPE

Breathing Air
Req'd April 1

TIMING

MISCELLANEOUS

1. Breathing Air System

Extension of the breathing air headers to all plant areas is required. Specific locations have been defined and the distribution system is being designed.

Complete.

2. Sample Bomb Purging

Purging of sample bombs containing high concentrations of VCM will be routed to the gas holder. A purge gathering system is being designed.

Yes CAR to be complete
July 15, 1976.

6/18/76

COLORITE 017338

CONVERSATION WITH A. GILMAREZ

INDIANA PLASTER PRIMA

evacuation cycle 20 min / evacuation

250 mm Hg - at whatever jacket temperature

1	27,622 ppm	24,620 ppm
2	9462	6,320
3	3162	1100
4	730	650
5	337	525

in bottom, out top
atmospheric vent

50 / 15 sec for N_2 @ 160° F

J. Standt

PA Rule No.	AREA	Man-Weeks Process Eng.	Compliance Expected November 1	SCOPE	STATUS
A. REACTOR					
61.65(b)(g)(i)	1. Reactor Wash Water		Yes (Present System)	A closed collection system for the reactor wash water blowdown will be required if closed reactor operation is implemented.	Closed reactor testing required: 1. OC coating devices 2. OC coating frequency 3. Closed reactor testing
61.64 (a)(1)	2. Reactor Evacuation System	6	No	A carbon adsorption system will be required on the evacuation pump discharge.	Reactor vapor sampling program ready to commence. Carbon adsorber design pending results of adsorber testing.
61.64 (c)	3. Wet Slurry Screens	$\frac{1}{2}$	Yes	Modifications to wet screens are required.	Vent tie-ins to carbon adsorber complete. Lab testing required on water seal on overflow line. Water seal design required. Oversize overflow collection system design required.
61.65(b)(g)(i)	4. Evac Pump Seal Water	$\frac{1}{2}$	No	A closed collection system will be required.	Lab testing complete.
B. RESIN STRIPPING					
61.64(c)(1)(ii)	1. Slurry Tanks	4	Yes	Stripping compliance data to be collected. Round the clock sampling of slurry tanks required.	Stripping rates using nitrogen are being established. Laboratory sampling program defined.
61.64 (b)	2. Carbon Adsorber	9	Yes	Determine capacity and scale up requirements for expansion.	Additional instrumentation being installed. Regeneration improvements being implemented. Lab sampling program defined.
61.65(b)(g)(i)	3. Carbon Adsorber Blowdowns	$\frac{1}{2}$	No	A closed collection system is required.	Proposed collection system designed. CAR to be written.

COLORITE 017340

EPA RULE No.	AREA	Man-Weeks Process Eng.	Compliance Expected November 1	SCOPE	STATUS
C. <u>RECOVERY</u>					
61.65(b)(g)(i)	1. Recovery Area Blowdowns	1½	No	A closed collection system for the recovery area blowdown is required.	Collection system designed. CAR to be written.
61.65(b)(g)(i)	2. Caustic Scrubber Blowdown	½	Yes	Blowdown to the caustic wash column as makeup is proposed.	Laboratory determination of blowdown solids composition being made.
61.65(b)(g)(i)	3. Wash Column	6	No	A closed collection system for the wash column and filter blowdown is required. Reactor discharge valve ramping adjustments required.	Testing of smaller mesh filter elements to reduce column backwash frequency underway.
61.65(b)(g)(i)	4. Caustic Wash Column Blowdown	1½	No	A system for separation and recovery of the VCM, toluene and caustic is required.	A stripping column design is under evaluation.
61.65(b)(6)(i)	5. Heavy Ends	2½	No	Disposal of the heavy ends will be accomplished by deep well injection by outside contractor. A loading filter will be required. A loading vapor clearing system will be required.	Alternates being evaluated.
61.65(b)(6)(ii) 61.65(b)(g)(i)	6. Vessel Clearing System	1½	No	A collection system is required for the water used to displace VCM vapors (to gas holder) in vessels being cleaned.	Collection system design underway.
D. <u>LOADING</u>					
61.65(b)(g)(i)	1. VCM Transfer Pump Seal Water	1	No	A closed collection system will be required.	Alternates being evaluated.
61.65(b)(1)(i)	2. Loading Hoses/Sight Glass Blowdowns	1½	No	A closed vapor collection/treatment system is required.	Alternates being evaluated.
61.65(b)(5)	3. Tank Car Purging	2	No	A closed vapor collection/treatment system is required.	Alternates being evaluated.

COLORITE 017341

EPA COMPLIANCE PROGRAM (cont'd)

3

<u>EPA RULE No.</u>	<u>AREA</u>	<u>Man-Weeks</u> <u>Process Eng.</u>	<u>Compliance Expected</u> <u>November 1</u>	<u>SCOPE</u>	<u>STATUS</u>
	E. <u>MISCELLANEOUS</u>				
61.65(b)(g)(ii)	1. Water Stream Stripping	7½	No	Evaluation and design of surge tank and stripper for all contaminated water streams is required. Batch versus continuous and steam vs. nitrogen stripping will be evaluated.	Alternates being evaluated.
61.65(b)(6)	2. Sample Bomb Purgings	1	Yes	Purging of sample bombs containing high VCM levels will be to the gas holder.	Purging system design underway.

COLORITE 017342

/12/76

COMPLIANCE PROGRAM

AREA	PROJECT DESCRIPTION	APRIL				MAY				JUNE				JULY			
		18	25	2	9	15	23	30		6	13	20	27	4	11	18	25
A1	Reactor Wash Water																
2	Reactor Evacuation System									Contract A							
3	Pet Slurry Screens			+													
4	Leak Pump Seal Water		*														
B1	Slurry Tanks		SER							SER							
2	Carbon Adsorber			Contract A/B				Cont. B									
3	Carbon Adsorber Blowdowns		APG														
C1	Recover Area Blowdowns		E.H.	APG													
2	Aoustic Scrubber Blowdown			*													
3	Wash Column			Contract C													
4	Aoustic Wash Column Blowdown					LKB											
5	Heavy Ends									Cont. C							
6	Vessel Clearing System				LKB												
D1	Vin Transfer Pump Seal Water		D														
2	Loading Boxes/Sight Glass Blowdowns			D													
3	Tank Car Purging					D											
E1	Water Stream Stripping									Cont. D				Cont. D/B			
2	Sample Bomb Purgings		*	#													

+ SER

APG

* LKB

4/13/76

COLORITE 017343

LAB SAMPLING REQUIRED FOR EPA AUGUST 1 DEADLINE

1. VCM vapor in reactors after final evacuation
20 samples per product type
 $20 \times 4 = 80$ samples total
take samples at reactors with probe
2. VCM in resin - round the clock sampling, twice per shift
on each of three slurry tanks. Approximately two
months of this sampling is required.
3. VCM in slurry tank vapors - same frequency as VCM in resin
4. Carbon Adsorber - twice a shift sampling on outlet.
5. VCM in water seal on wet slurry screen overflow - approximately
five samples required.

4/12/76

WATER STREAMS REQUIRING TREATMENT FOR EPA

1. Reactor Area	Lb/Day ¹	VCM, ppm	Mean VCM ppd
Reactor Wash Water	780,000	10-20	12
Evacuation Pump Seal Water Drain(H301A&B)	<u>5,000</u>	<u>5-350</u>	<u>1</u>
Total	785,000		13
2. Loading Area			
VCM Transfer Pump Seal Water	3,000	400-800	1.2
3. Carbon Adsorber Blowdown			
Carbon Adsorber Drains	7,200	500-1,000	5.4
4. Recovery Area			
A. Blowdown			
(H302)			
Recovery vacuum pump seal water drain	13,000	300-700	5.5
Gas Holder Overflow (D340)	6,000 ³	400-800	3.6
Gas Holder K.O. pot (C350,1)	3,000-5,000	500-4,000	9
Crude Tank Drain (C352)	0 - 50	2,300-4,000	nil
Recovery Area VCM Pump Seal Water	20,000	400-800	12
Caustic Scrubber Blowdown (C346)	<u>4,500</u>	<u>8,000</u>	<u>52</u>
Total	48,500 - 50,550		83
B. Column Back Wash			
Water Wash Column (C344,5)	525,000 ²	200-750	250
Water Wash Column Filter (L327,8)	<u>90,000</u>	<u>300-1,700</u>	<u>90</u>
Total	615,000		340

- Notes: 1. Basis - 8 reactors and 18 batches per day
2. Improved recovery flow control should reduce this amount.
3. Calculated quantity.

PASADENA PVC PLANT
ENGINEERING CONSIDERATIONS
OSHA VCM COMPLIANCE

REACTOR AREA	SCOPE	Breathing Air Req'd April 1	TIMING
1. Install hydraulic cleaning devices in reactors to reduce frequency of opening between batches	System installed. Operational testing required.	--	Testing completion target August 1, 1976.
2. Install OC nozzles in reactors to reduce frequency of opening reactors between batches	System installed. Additional operational testing required.	--	Testing completion target August 1, 1976.
3. Install gas chromatograph computer system for VCM monitoring and develop program for determining worker exposure levels	Computer programming to calculate worker exposure levels is complete.	--	Chromatograph operational Jan. 15, 1976.
4. Install activated carbon adsorption unit to reduce VCM from slurry tank and vent condenser below 10 ppm	Instrumentation for monitoring emission rates and regeneration equipment operation is being installed. Regeneration equipment modifications may be necessary to achieve less than 10 ppm VCM consistently. Extension of vent stack by 20 ft. to allow better dispersion from immediate work areas is being installed.	No	Stack extension operational April 1, 1976 Regeneration modifications completion target Apr. 15, 1976 Operational testing completion target May 30, 1976
5. Carbon Adsorber Blowdowns	Laboratory data is required and a closed collection system for the liquid blowdowns at the carbon adsorber area is being designed.	Yes	CAR to be complete Apr. 30, 1976
6. Wet screen and wet screen overflow collection drums	Modifications to wet screens are required. Alternate collection drum contaminant/disposal methods are being developed. Tests are being conducted to determine whether alternate equipment can be used to replace the wet screens altogether.	Yes	Testing completion target April 30, 1976.
7. Oily Water Sump	The oily water sump grating is being enclosed and a vent stack to disperse VCM vapors from immediate work area is being installed.	No	Operational April 1, 1976
8. Reactor Wash Water	A closed collection system for the reactor wash water blowdowns is being evaluated.	Yes	Evaluation completion target July 30, 1976.
9. Evacuation Pump Discharge	Extensions to the evacuation pump discharge stacks are being evaluated to minimize exposure in reactor building area.	Yes	Evaluation completion target July 30, 1976

COLORITE 017346

PASADENA PVC PLANT
ENGINEERING CONSIDERATIONS
OSHA VCM COMPLIANCE (cont'd)

DRYER AREA	SCOPE	Breathing Air Req'd April 1	TIMING
1. Centrifuge Water Blowdown Tank	Modifications are being made to reduce emissions. These include installing cover on top manway, installing a liquid seal pot on the overflow line and extending the vent stack to achieve better dispersion.	Yes	CAR submitted March, 1976.
2. Increase Dryer Stack Height	Additional area sampling necessary to define stack extension requirements.	Yes	Evaluation completion target Sept. 1, 1976.
RECOVERY AREA			
1. Recovery Area Blowdown	A closed collection system for the recovery area blowdown is required.	Yes	Collection system design complete Apr. 15, 1976. CAR to be complete May 1, 1976.
2. Caustic Scrubber Blowdown	Laboratory testing is required on a system that has been installed to blowdown the caustic/alumina scrubber water into the caustic wash column as makeup rather than to the sewer.	Yes	Operational target Apr.30, 1976
3. Wash Column Backwash Frequency	Smaller mesh filter elements are being tested on the wash column water circulation system to reduce column backwash frequency i.e., VCM discharge rate into the REW pond.	Yes	Evaluation completion target May 31, 1976
LOADING AREA			
	A closed system for collecting the VCM transfer pump seal flush water will be required. A permanent vapor gathering/treatment system will be designed.	Yes	Engineering completion target June 1, 1976.

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PASADENA PVC PLANT
ENGINEERING CONSIDERATIONS
OSHA VCM COMPLIANCE (cont'd)

LABORATORY AREA

SCOPE

Breathing Air
Req'd April 1

TIMING

The air intake ducts for the laboratory are being relocated to prevent contamination by the hood exhaust duct. The hood fan/duct capacity is being evaluated. A VCM sample disposal system is being evaluated.

-- Air duct revisions complete
March, 1976.

ISCELLANEOUS

1. Breathing Air System

Extension of the breathing air headers to all plant areas is required. Specific locations have been defined and the distribution system is being designed.

-- Installation underway.

2. Sample Bomb Purging

Purging of sample bombs containing high concentrations of VCM will be routed to the gas holder. A purge gathering system is being designed.

Yes CAR to be complete
May 15, 1976

4/13/76

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