

Reports

LAID OFF 11/15/1997

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ENVIRONMENTAL
OPERATIONS ICH
RECORDS

DO 088752
CONFIDENTIAL



DOW CHEMICAL U.S.A.

LOUISIANA DIVISION
PLAQUEMINE, LOUISIANA 70764
504 389-8000

November 29, 1978

SUBJECT: PREVENTION OF OVEREXPOSURE TO POTENTIALLY HAZARDOUS MATERIALS

TO: ALL TANK CAR PERSONNEL

Gentlemen:

Earlier in the year each of you was told of the kinds and degrees of danger involved in overexposure to eleven potentially hazardous materials: They are:

- | | | |
|-------------------------|--------|---------------------------|
| 1. Vinylidene Chloride | (VCL) | |
| 2. Methylene Chloride | (MEC) | |
| 3. Carbon Tetrachloride | (CTET) | |
| 4. Chloroform | (CFM) | |
| 5. Ethylene Dichloride | (EDC) | |
| 6. Perchloroethylene | (PCE) | |
| 7. Vinyl Chloride | (VNYL) | |
| 8. Methyl Chloride | (MCHL) | |
| 9. Monethanolamine - | (MEAN) | (New Materials this Year) |
| 10. Diethanolamine | (DEAN) | " |
| 11. Triethanolamine | (TEAN) | " |

In order to further protect those people who work in the Tank Car Cleaning shed, Dow has purchased and made operational a Beckman 6700 Chromatograph which continuously samples and analyzes the first eight materials listed above.

A procedure has been written and put into use which charges the Supervisor, or Dispatcher to clear the Tank Car Cleaning area should the Chromatograph give an alarm (the alarm is set for 12 parts per million in air). Tank Car workers are not allowed to return to their work area until the parts per million return to 1 or less.

By procedure the Dispatcher's office is never without someone in charge.

AN OPERATING UNIT OF THE DOW CHEMICAL COMPANY



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A computer has been programmed to record the average ppm (parts per million) over an eight hour period. The highest time weighted average for any chemical has been .07 or 7/100's of (1) part per million over an eight hour period. The chemical was EDC.

According to our latest knowledge, this constitutes a degree of exposure so far below what is considered dangerous as to be negligible.

The last three materials listed on page 1, (the Ethanolamines) are like Caustic, only less corrosive.


C. D. Henderson

cf



DOW CHEMICAL U.S.A.

LOUISIANA DIVISION
PLAQUEMINE, LOUISIANA 70764
504 389-8000

June 6, 1978



You will remember that late in 1977 certain Railroad and Tank Car people were asked to cooperate in a test to determine to what extent noise was a hazard in our daily duties.

Following are the results of that test:

DOSIMETER RESULTS November, 1977

NAME	JOB	WASH CREW		UNIT #	DURATION	DATE
		CELL#	% EXPOSURE			
Herbie Walker	Laborer	60	36%	DD2368	7:30AM-3:00PM	Nov. 1
Mike Osborne	"	36	55%	DD1421	7:30AM-2:30PM	Nov. 2
Willie Edwards	"	22	* 97%	DD1421	7:30AM-2:30PM	Nov. 4

RAILROAD CREW

Mike Wilson	Foreman	7	11%	DD1421	8:30AM-2:15PM	Nov. 1
Oliver Jones	Fieldman	39	3%	DD2368	7:30AM-2:15PM	Nov. 2
Mike Cedotal	Engineer	24	38%	DD2368	8:30AM-2:15PM	Nov. 4
C. Tickle	Pinpuller	16	38%	DD-1432	7:30AM-2:20PM	Nov. 10

*100% = Bottom of the danger range from overexposure to noise

Please initial your name on the roster after you have read the test results. ✓
If there are questions see me.

Charles D. Henderson
Charles D. Henderson

cf

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~~11-11-78~~

Raw

REV
8/6



THE DOW CHEMICAL COMPANY
LOUISIANA DIVISION
Environmental Control

REFERENCE NO. _____

DATE THIS REPORT June 13, 197CHARGE 374DEPT. DockREPORT OF ANALYSIS

Samples -

ID	Compound	Concentration	Remarks
612-5	Benzene	1.5 ppm	DC 348 area
612-6	"	0.97 ppm	D. Beard disconnection
612-7	"	0.53 ppm	B. Ornel
612-8	"	0.67 ppm	J. Lefebvre
612-9	"	0.72 ppm	C. Young

GC Column 10' Dupont 300 15% Temp. 80°Cmls Solvent 10 CS₂ Dect. 200°CBlank 17.5 ugSpikes none

Other Analytical Method _____

BY Nancy L. DO 088757
CONFIDENTIALSIGNED Lee MS

Larry
261-3604
5570
20

VINYL CHLORIDE PLANT

[illegible]

REMARKS :

VINYL CHLORIDE PLANT

[illegible]

REMARKS :

DO 088759
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VINYL CHLORIDE PLANT

[illegible]

REMARKS :

VINYL CHLORIDE PLANT

[illegible][illegible]

VINYL CHLORIDE PLANT

[illegible]

REMARKS :

VINYL CHLORIDE PLANT

[illegible][illegible]

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Sofie Maersk CLASSIFICATION Ship DATE 3-29-78

CO	OUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
	<u>Pump not worn</u>	<u>Beginning samples</u>	<u>-</u>
<u>3-30-78</u>	<u>Area I</u>	<u>Upstairs on catwalk</u>	<u>0.24 ppm</u>
		<u>by mix line</u>	
<u>3-30-78</u>	<u>Area II</u>	<u>Downstairs on rail</u>	<u>5.36 ppm</u>
		<u>by safety shower</u>	
<u>4-1-78</u>	<u>Joe Daigle</u>	<u>End sampler (6L)</u>	<u>0.90</u>
<u>4-1-78</u>	<u>Calvin Young</u>	<u>Decanted (3L)</u>	<u>4.08</u>
<u>4-1-78</u>	<u>R. Brace</u>	<u>Decanted (3L)</u>	<u>7.31</u>

REMARKS:

Note: Area samples were taken at approximately
2:00 p.m. on 3-30-78 during loading only

Letter written to R. Brace on 4-3-78
Spoke to Marine Supervision and they reported
no problems with this ship

PERSONNEL EXPOSURE DATA SHEET

VINYL CHLORIDE PLANT

NAME Carol Isis CLASSIFICATION Ship DATE 3-19-78

CC	FUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
	<u>Ken Phillips</u>	<u>Beginning 6 samples (12.0L)</u>	<u>0.46 ppm</u>
	<u>Perrie Bynum</u>	<u>End 6 samples (9.0L)</u>	<u>1.68 ppm</u>
	<u>O'Real Bosley</u>	<u>Disconnect (6.0L)</u>	<u>12.10 ppm</u>
	<u>J. Lefebvre</u>	<u>Disconnect (6.0L)</u>	<u>5.77 ppm</u>
<u>3/20</u>	<u>Area A</u>	<u>Top of Deck on Platform^(0.5L)</u>	<u>6.58 ppm</u>
<u>3/20</u>	<u>Area B</u>	<u>Front of Work Barge^(1.5L)</u>	<u>1.22 ppm</u>

REMARKS:

Area sample run during disconnect for background
information. Wind SSE 3-6 mph
Ship being loaded; EOC unloaded.

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Line Maersk CLASSIFICATION Ship DATE 3-11-78

CC. FUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
Joe Daigle	Beginning Sample (2) (3.0L)	9.44 ppm
Ken Phillips	End Sample (2) (3.0L)	7.00 ppm
J. Barlow	Disconnect (2.0L)	12.74 ppm
Adam Blanchard	Disconnect (2.5L)	4.99 ppm

REMARKS:

Letters written to Daigle, Phillips and Barlow 3-14-78

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Dock CLASSIFICATION Area samples DATE 3-17-78

CC. FUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
<u>Unif</u>	(A) <u>Top of Dock - on</u>	<u>3.41 ppm</u>
	<u>cat. walk by mix</u>	
<u>Unif</u>	(B) <u>On Rail by Shower</u>	<u>2.44 ppm</u>
	<u>South end of Barge</u>	

REMARKS:

Area samples run on the dock when no
vinyl was being loaded for background
information

(Blank run prior to these samples; new equipment
used)

Wind - 6 MPH out of north - Caustic being loaded
at Dock

VINYL CHLORIDE PLANT

[illegible][illegible]

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Delta Gas CLASSIFICATION Ship DATE 3-4-78

CO. FUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
Kenny Phillips	Sampling (2) (4.0L)	3.90 ppm
R. Washington	Disconned (6.0L)	4.81 ppm
O'Real Bosley	Disconned (6.0L)	7.31 ppm

REMARKS:

Letter written to O'Real Bosley 3-7-78
 (Value leaking through on this ship)

There was a vinyl spill during the unloading of this ship. 35 ppm was detected when Vinyl Plant Personnel checked. The dock was evacuated and loading was stopped until the vinyl was cleared (this was approximately 6 hours). Letters were written to the following people involved.

J. Johnson R. Greer D. Zahra K. Phillip
 C. Woods L. Williams T. Ekker

VINYL CHLORIDE PLANT

[illegible]

REMARKS :

VINYL CHLORIDE PLANT

CC FUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
Ken Phillips	Reg. 2 samples (9.0L)	0.99 ppm
Perrie Brynum	End 3 samples	No sample - pump not turned on
S. R. Perrie	Disconnect (6.0L)	4.87 ppm
Carl Woods	Disconnect (6.0L)	4.75 ppm

REMARKS :

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PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Roald Amundsen CLASSIFICATION Ship DATE 2-18-78

CO. HOURS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
2-18-78 Ken Phillips	Beginning Sampler (4.5)	1.89 ppm
2-23-78 Perrie Bynum	End Sampler (5) (4.5L)	15.16 ppm
2-23-78 Randy Peairs	Disconnect (6.0L)	6.09 ppm
2-23-78 Carl Woods	Disconnect (6.0L)	10.96 ppm

REMARKS:

VINYL CHLORIDE PLANT

CO. SOUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
B. Durbin	Disconnect (1.750L)	148.33 ppm <i>11.11% deducted</i>
F. Barlow	Disconnect (1.875L)	148.93 ppm <i>in 2nd section 2</i> <i>11.11% deducted</i>
Ken Phillips (1)	Sampling (1.5L)	4.87 ppm
Ken Phillips (2)	Sampling (1.5L)	1.72 ppm

REMARKS :

VINYL CHLORIDE PLANT

[illegible][illegible]

DO 088774
CONFIDENTIAL

VINYL CHLORIDE PLANT

[illegible][illegible]

VINYL CHLORIDE PLANT

[illegible][illegible]

VINYL CHLORIDE PLANT

[illegible][illegible]

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

Customized Chart

NAME Reine Del Rama CLASSIFICATION Barge DATE 7-31-78

COMPOUNDS MEASURED

PPM MOLE 8 HOUR T.W.A.

PPM MOLE 15 MINUTE EXCURSION

<u>Johnny Karris</u>	<u>Sampling</u>	<u>1.02</u>	<u>47.77 ppm</u>	<u>N/D in 2nd section</u>
<u>A.R. Peiris</u>	<u>Disconnected</u>	<u>(4.725)</u>	<u>2.31 ppm</u>	
<u>Carl Woods</u>	<u>Disconnected</u>	<u>(5.175)</u>	<u>1.01 ppm</u>	

REMARKS:

Note: This sample line is sampled every 4 hrs on a
Customized Chart. Asked that Karris be as careful
as possible. Will test further to see if procedure
may have to be revised. Letter written to Karris
8-2-78

VINYL CHLORIDE PLANT

[illegible]

REMARKS :

DO 088779
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PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Enrico Tormis CLASSIFICATION Ship DATE 7-12-78

CC	UNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
	<u>Joe Daigle</u>	<u>End samples (6.02)</u>	<u>0.03 ppm</u>
	<u>J. Lefebvre</u>	<u>Disconnected (2.52)</u>	<u>1.20 ppm</u>
	<u>W. Washington</u>	<u>Disconnected (2.52)</u>	<u>7.08 ppm</u> <u>2nd section 0.74 ppm</u>

REMARKS:

Letter written to Washington 7-13-78
Spoke to Marine Supervision & they indicated no
apparent problem with this ship
Fresh air masks are worn during
the disconnect

VINYL CHLORIDE PLANT

NAME Tropigal Sea Fast CLASSIFICATION Ship DATE 7-25-78

[illegible]

Note: Second disconnect pump dropped in river.

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PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Bow Lora CLASSIFICATION Ship DATE 6-23-78

CO. FUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
<u>Kenny Phillips</u>	<u>End Sample (.5L)</u>	<u>0.82 ppm</u>
<u>J. Lefebvre</u>	<u>Disconnect (10.0L)</u>	<u>0.01 ppm</u>
<u>Randy Peairs</u>	<u>Disconnect (10.0L)</u>	<u>1.38 ppm</u>

REMARKS:

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Epsilon Gas CLASSIFICATION Ship DATE 6-22-78

CONDUITS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
<u>N. Washington</u>	<u>Disconnected (2.52)</u>	<u>33.12 ppm 2.94 Back Section</u>
<u>John Lefebvre</u>	<u>Disconnected (2.52)</u>	<u>55.20 ppm 1.47 Back Section</u>

REMARKS:

Letters written to Washington + Lefebvre on 6-23-78
Header valves were checked before loading and were
ok, but they leaked visibly on disconnect.
Maine Dept. Supervision will notify owners
to repair valves before this ship will be
loaded again.
Fresh air was worn during disconnect.

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Dunbrook CLASSIFICATION Ship DATE 6-6-78

CC	OUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
6-7-78	Johnny Bailey	Beginning samples (3.02)	0.57 ppm
6-10-78	Kenny Phillips	End samples (6.02)	10.07 ppm
6-10-78	A. J. Blanchard	Disconnect (3.02)	2.48 ppm
6-10-78	J. Barlow	Disconnect (3.02)	0.91 ppm

REMARKS:

Letter written to Kenny Phillips on 6-14-78
Used the Nash Compressor to pull vacuum and could
not get a good vacuum when these samples
were caught.

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Nestor CLASSIFICATION Ship DATE 5-18-78

CO. UNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
Kenny Phillips	End sampler (4.5L)	1.62 ppm
Calvin Young	Disconnect (1.5L)	53.15 ppm
Bobby Durham	Disconnect (1.5L)	11.50 ppm

REMARKS:

Letters written to Young + Durham

Valves were leaking on header on this ship.
Swapped to a different header but apparently
we still had problems. This ship has
been written up. Will not load again
until repairs have been made

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Cornogas Mariner CLASSIFICATION Barge DATE 5-24-78

CC. FUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
<u>N. Washington</u>	<u>Disconned</u> <u>3.0L</u>	<u>9.20 ppm</u>
<u>O'Neil Barge</u>	<u>Disconned</u> <u>3.0L</u>	<u>13.29 ppm</u>

REMARKS:

Letters written to Washington + Barge 5-30-78

Marine supervision knew of no particular problem
with this barge; however, this was the first time
vinyl had ever been loaded on it + probably
piping arrangement could be improved on

VINYL CHLORIDE PLANT

[illegible][illegible]

VINYL CHLORIDE PLANT

[illegible]

REMARKS :

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Helion CLASSIFICATION Ship DATE 9-6-78

COMPOUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
<u>J. Kefebure</u>	<u>Disconnect (2.0L)</u>	<u>41.35 N/D no data</u>
<u>N. Washington</u>	<u>Disconnect (2.0L)</u>	<u>4.91</u>

REMARKS:

Spoke to Marine supervision & log indicated no
problems with this disconnect. Then spoke to people
involved and they also stated that there were
no apparent problems with this disconnect.
Letter written to Kefebure 9/13/78

Jan Achord
Vinyl Chloride Plant

DO 088789
CONFIDENTIAL

VINYL CHLORIDE PLANT

NAME Beta - Gas CLASSIFICATION Ship DATE 9-1-78

[illegible]

REMARKS :

DO 088790
CONFIDENTIAL

VINYL CHLORIDE PLANT

[illegible]

REMARKS :

VINYL CHLORIDE PLANT

CO. POUNDS MEASURED

PPM MOLE 8 HOUR T.W.A.

PPM MOLE 15 MINUTE EXCURSION

B. Bayler

Discontinued (5.02)

1.96 ppm

Reported the other pump did not work & was not
warn.

VINYL CHLORIDE PLANT

[illegible]

REMARKS :

DO 088793
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PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Atlantic CLASSIFICATION Ship DATE 8-16-78

CO. FUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
<u>R Beard</u>	<u>Final Disconnect (21.5L)</u>	<u>.97 ppm (3 1/2 Lr sample)</u>
<u>C Woods</u>	<u>Final Disconnect (21.5L)</u>	<u>1.60 ppm (3 1/2 Lr sample)</u>

REMARKS:

Exposure for 15' only:Beard = .07 ppmWoods = .11 ppm

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Epsilon Gas CLASSIFICATION Ship DATE 8-15-78

CO. FUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
<u>A. Blanchard</u>	<u>Discovered (3.02)</u>	<u>68.06 ppm 13.96 ppm</u> ^{Back Section}
<u>J. Barlow</u>	<u>Discovered (3.02)</u>	<u>0.03 ppm</u>

REMARKS:

Log indicated no problem with this ship.
Marine Supervisor will try to Contact Blanchard.
Letter written to Blanchard 8-17-78

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Carol Isis CLASSIFICATION Ship DATE 7-26-78

COMPOUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
7/27 <u>L. Williams</u>	<u>Disconned (2.46)</u>	<u>65.44 ppm N/D 2nd Sect</u>
7/27 <u>A. Johnson</u>	<u>Disconned (2.46)</u>	<u>3.92 ppm</u>

REMARKS:

Note: No pump worn during sampling of this ship
Log indicated headed valve + load line was
leaking on the ship (Valves were checked before loading
Letter written to Williams 8-1-78

(Will get with Unif + Marine Supervision to
see what can be done to resolve this
problem)

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Beta Gas CLASSIFICATION Ship DATE 12-31-78

COMPOUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
<u>A. J. Blanchard</u>	<u>Disconnect (2.02)</u>	<u>4.55 ppm</u>
<u>Bandy Peairs</u>	<u>Disconnect (2.02)</u>	<u>4.84 ppm</u>

REMARKS:

Pumps calibrated prior to + after test to determine
liters pumped

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Rein Del Rame CLASSIFICATION Barge DATE 12-30-78

COMPOUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
B. Bolyer	Discontinued (2.02)	4.79 ppm
J. Barlow	Discontinued (2.02)	3.31 ppm

REMARKS:

Pumps calibrated prior to + after test to determine
liters pumped

VINYL CHLORIDE PLANT

[illegible]

Both pumps calibrated prior to & after test to determine liters pumped

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VINYL CHLORIDE PLANT

[illegible]

Both pumps calibrated prior to and after test to determine liters pumped

DO 088800
CONFIDENTIAL

VINYL CHLORIDE PLANT

[illegible]

Both pumps calibrated prior to + after test to determine liters pumped

DO 088801
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PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Gene Maerk CLASSIFICATION Ship DATE 12-27-78

COMPOUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
<u>O. Bosley</u>	<u>Disconnect (4.0L)</u>	<u>0.12 ppm</u>
<u>N. Washington</u>	<u>Disconnect (4.0L)</u>	<u>1.20 ppm</u>

REMARKS:

Pump calibrated prior to and after test to
determine liters pumped

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Tropigian Jar East CLASSIFICATION Ship DATE 12-13-78

COMPOUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
<u>Adam Blanchard</u>	<u>Disconnected (2.62) (3.02)</u>	<u>2.04 ppm</u>
<u>Carl Woods</u>	<u>Disconnected (3.02)</u>	<u>1.29 ppm</u>

REMARKS:

Pumps Calibrated - Start 100cc/min
#7726 " Stop 86cc/min
#6949 " Stop 100cc/min

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME GP-801 + 802 CLASSIFICATION Barge DATE 12-7-78

COMPOUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
801 I Johnson	Disconned (2.0L)	1.21 ppm
802 A. J. Blanchard	Disconned (2.0L)	11.48 ppm ^{non-detect} _{2nd section}

REMARKS:

Start Calibration on Both Marine Pumps 100cc/min
 End Calibration on Both Marine Pumps 100cc/min
 Letter written to Adam Blanchard 12/12/78
 Marine + Unif Supervision knew of no particular
 problem with GP-802 disconned

VINYL CHLORIDE PLANT

PPM MOLE 15 MINUTE EXCURSION

REMARKS :

DO 088805
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VINYL CHLORIDE PLANT

PPM MOLE 15 MINUTE EXCURSION

REMARKS :

DO 088806
CONFIDENTIAL

VINYL CHLORIDE PLANT

NAME Nestor CLASSIFICATION Ship DATE 11-20-78

[illegible]

REMARKS :

DO 088807
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PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Sunny Green CLASSIFICATION Ship DATE 11-10-78

COMPOUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
<u>Randy Peirce</u>	<u>Disconnect (2.5L)</u>	<u>4.04 ppm</u>
<u>Randy Beard</u>	<u>Disconnect (2.5L)</u>	<u>32.37 ppm</u> <u>Back section</u> <u>2.20 ppm</u>

REMARKS:

Plant Problems prevented us from pulling
a vacuum during this disconnect
Letter written to Beard 11-13-78

VINYL CHLORIDE PLANT

PPM MOLE 15 MINUTE EXCURSION

REMARKS :

DO 088809
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PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Pestie CLASSIFICATION Ship DATE 11-4-78

COMPOUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
<u>Randy Peair</u>	<u>Disconnected (6.02)</u>	<u>15.97ppm</u> <u>Back section</u> <u>0.75ppm</u>
<u>B. Durban</u>	<u>Disconnected (6.02)</u>	<u>17.72ppm</u> <u>Back section</u> <u>N/D</u>

REMARKS:

Some vapor was seen on the disconnect.
In the past, liquid leaks were detected on some
disconnects. The new procedure is helping
apparently and will continue to be evaluated
on the next few ships
Letter written to Peair & Durban 11-7-78

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Reina del Rama CLASSIFICATION Barge DATE 11-6-78

COMPOUNDS MEASURED

PPM MOLE 8 HOUR T.W.A.

PPM MOLE 15 MINUTE EXCURSION

Ernest Williams Discovered (1.52) 4.99 ppmAdam Blanchard Discovered (1.52) 1.50 ppm

REMARKS:

Jan Achord
Vinyl Chloride PlantDO 088811
CONFIDENTIAL

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Delta Gas CLASSIFICATION Ship DATE 11-1-78

COMPOUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
W. Lipscomb	Disconnect 5.02	20.13 ^{max action} N/D
C. Young	Disconnect 5.02	41.68 ^{max action} N/D

REMARKS:

Header values leaked thru on this ship. Vinyl Supervision sat in on Marine Dept Supervisor Meeting. Revisions were made on disconnect procedure. Disconnects will be observed on the next 3 ships to evaluate the revisions.

Letter written to Young, Lipscomb 11-2-78

VINYL CHLORIDE PLANT

CO. POUNDS MEASURED

PPM MOLE 8 HOUR T.W.A.

PPM MOLE 15 MINUTE EXCURSION

6-17-78	Johnny Bailey	End samples	(7.5L)	0.01 ppm
6-17-78	W. K. Lipscomb	Disconnect	(7.9L)	0.07 ppm

6-17-78	W. K. Lipscomb	Disconnect	(7.9L)	0.07 ppm
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Only one man disconnected this ship

VINYL CHLORIDE PLANT

PPM MOLE 15 MINUTE EXCURSION

0.15 ppm

0.53 ppm

Jan Achord
Vinyl Chloride Plant

DO 088814
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VINYL CHLORIDE PLANT

NAME Beta Gae CLASSIFICATION Ship DATE 10-25-78

[illegible]

REMARKS :

DO 088815
CONFIDENTIAL

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Hesperon CLASSIFICATION Ship DATE 10-15-78

COMPOUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
<u>Randy Peairs</u>	<u>Disconnected (4.5%)</u>	<u>22.19</u> ^{1st section} ^{N/D}
<u>Carl Woods</u>	<u>Disconnected (4.5%)</u>	<u>62.12 ppm</u> ^{2nd section} <u>1.77 ppm</u>

REMARKS:

10-16-78 Letter written to Peairs + Woods. Log indicates
Leaker valves leaked thru even though they
were pressure checked prior to loading
(Ship + Marine) Supervision will meet to discuss
possible improvements on disconnects

VINYL CHLORIDE PLANT

NAME Beta - Gas CLASSIFICATION Ship DATE 10-7-78

[illegible]

REMARKS :

DO 088817
CONFIDENTIAL

PERSONNEL EXPOSURE DATE SHEET

VINYL CHLORIDE PLANT

NAME Congas Mariner CLASSIFICATION Barge DATE 9-27-78

COMPOUNDS MEASURED	PPM MOLE 8 HOUR T.W.A.	PPM MOLE 15 MINUTE EXCURSION
<u>C. Young</u>	<u>Disconned (2.02)</u>	<u>46.24 max. Section 9.60,</u>

REMARKS:

Note: Only 1 pump worn during this disconned
Letter written on 9-27-78

Log indicated no problems. Marine supervision
will speak to Young about this. Spoke to Young
& he indicated no problems. Cannot explain exposure
This Barge will be used for storage in S. A. &
will not be loaded again here.

VINYL CHLORIDE PLANT

COMPOUNDS MEASURED

PPM MOLE 8 HOUR T.W.A.

PPM MOLE 15 MINUTE EXCURSION

R. Beard

Disconnect (6.02)

3.05 ppm

E. Boley!

Disconnect (6.02)

2.56 ppm

REMARKS :

VINYL CHLORIDE PLANT

[illegible][illegible]

DO 088820
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THE DOW CHEMICAL COMPANY
LOUISIANA DIVISION
Environmental Control

REFERENCE NO. _____

DATE THIS REPORT 9-28-78CHARGE 333DEPT. TANK CRTREPORT OF ANALYSIS

Samples -

Personnel samples

ID	Compound	Concentration	Remarks
1BK	V ₁	.03 Mg	
	V ₂	.004 Mg	
1FR	V ₁	.008 Mg	
	V ₂	.002 Mg	
2BK	V ₁	.008 Mg	
	V ₂	.002 Mg	
2FR	V ₁	.03 Mg	
	V ₂	.004 Mg	
3BK	V ₁	.008 Mg	
	V ₂	.002 Mg	
3FR	V ₁	.03 Mg	
	V ₂	.004 Mg	

GC Column 16' x 1/8" TCP 15%Temp. 100°Cmls Solvent 20 ml CS₂Dect. 250°CBlank NO V₁ OR V₂ Present

Spikes _____

Other Analytical Method _____

BY: DocDO 088821
CONFIDENTIAL

SIGNED

Lee M. Nable

DOCKS

DATA SHEET

5-4-78

analyzed for benzene analyzed by Semivolatile

DO 088872
CONFIDENTIAL

REPORT OF ANALYSIS

DEPT Marine Dept

REPORT OF ANALYSIS

[illegible]

Other Analytical Method _____

SIGNED Adrian L. McCas

Sample Detected $\times 24.4$ = ppm(v)
 in w $\times$ char. vol. $\times$ liters Sampled

12/12/78
 10K

Marine wharf

Benzene Exposure PPM(V)

1211-1 $\frac{106 \times 24.4}{78 \times .95 \times 54.95} = \textcircled{0.64}$ ppm(v) Pump + Tube 1+4

1211-2 $\frac{8062 \times 24.4}{78 \times .95 \times 52.5} = \textcircled{50.57}$

1211-3 $\frac{17.6 \times 24.4}{78 \times .95 \times 59.4} = \textcircled{0.10}$ Pump + Tube 3+5

1211-4 $\frac{9.58 \times 21.2}{525} = \textcircled{0.04}$ Benzene Badge

1211-5 $\frac{9.58 \times 70.7}{525} = \textcircled{1.29}$ Benzene Badge

Humidity?
 Temp.

3M BRAND ORGANIC VAPOR MONITOR

Product No. 3500

Qualification Data for

Benzene

GENERAL INFORMATION

Monitor Sampling Rate

33.0 cm³/min.

Recovery Coefficient

0.99 ± 0.03 in CS₂

Upper Exposure Limit¹

>1500 ppm-hours

COMPOUND PROPERTIES & DATA

Molecular Weight

78.11

Vapor Pressure (20°C)

57.63 mm Hg

Published Diffusion Constant²

0.0932 cm²/sec.

Density

0.8794 (20°C)

T.W.A. (TLV)

1.0 ppm

CALCULATION PROCEDURE

1. Determine mass of analyte in micrograms.
2. Determine exposure time in minutes.
3. Calculate concentration from:

$$\frac{\text{mg}}{\text{m}^3} = \frac{30.30 \text{ (micrograms)}}{(\text{recovery coefficient}) (\text{minutes})} = \frac{30.6 \text{ (micrograms)}}{(\text{minutes})}$$

or³

$$\text{ppm} = \frac{9.48 \text{ (micrograms)}}{(\text{recovery coefficient}) (\text{minutes})} = \frac{9.58 \text{ (micrograms)}}{(\text{minutes})}$$

1. The Upper Exposure Limit at 80 % R.H. is 1500 ppm-hours.
2. Published diffusion constants are provided for general interest only. "Monitor Sampling Rate" data for each compound is determined by 3M Company.
3. ppm based on 25 °C, 760 mm Hg.

$$\frac{\text{micrograms}}{\text{min}} \times 9.58 = \text{ppm(v)}$$

DO 088825
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Time Started 1530 HRS.
 Time Stopped 2345
 Beginning Flow Rate 111 cc/min
 Ending Flow Rate _____
 Monitoring For Benzene

Job Classification and Description: O.T.T. Purge & Loading Benzene
C-5 Barges
1211-1
 Wind Conditions N-NE
 Any unusual activities or pertinent info that should be mentioned? _____

Calibration Check Prior to Monitoring? ☒ Yes ☐ No

Calibration Equipment Used? Soap Bubblemeter

NOTE: Job description must be concise and complete.

LOUISIANA DIVISION INDUSTRIAL HYGIENE

Block Marine ~~Person~~ or Area Monitored ✓ DC-348 Date 9-1-78
 Time Started 1500 HRS. Job Classification and Description: Purge & load near front of Barge
 Time Stopped 2345 by load manifold.
 Beginning Flow Rate 100 cc/min 1211-2
 Ending Flow Rate ---
 Monitoring For Benzene Wind Conditions East - Southeast
 Any unusual activities or pertinent info that should be mentioned? _____

Calibration Check Prior to Monitoring? ☒ Yes ☐ No

Calibration Equipment Used? Soap Bubblemeter

NOTE: Job description must be concise and complete.

LOUISIANA DIVISION INDUSTRIAL HYGIENE

CR

Job Classification 1530 HRS.

and Description: O.T.

ne Started 2345

ginning Flow Rate 1200 c/min

ding Flow Rate 1200 c/min

Unit ring for Alkyne

Wind Conditions N-NE

Any unusual activities or pertinent info that should be mentioned?

Calibration Check Prior to Monitoring?

☒ Yes ☐ No

Calibration Equipment Used? Leap/Bubblemeter

NOTE: Job description must be concise and complete.

LOUISIANA DIVISION INDUSTRIAL HYGIENE

FOLD TO HERE

3M NO. 3500
ORGANIC VAPOR MONITOR
Do not open until ready to use. See instructions for recommended exposure time.

Monitor No. AI 5021
Date Exposed 9-1-78 1500-2345
Employee I.D. BOLYER (Billy)
Vapor(s) BENZENE 12/1-9
Temperature R.H.
U.S. Patent 3,950,980 and patents applied for. 34-7009-3135-4

FOLD TO HERE

3M NO. 3500
ORGANIC VAPOR MONITOR
Do not open until ready to use. See instructions for recommended exposure time.

Monitor No. AI 5023
Date Exposed 9-1-78 1500 HRS-2345
Employee I.D. C. YOUNG
Vapor(s) BENZENE 12/1-5
Temperature R.H.
U.S. Patent 3,950,980 and patents applied for. 34-7009-3135-4

CHEMICAL AND PHYSICAL AGENT INVENTORY

SUPERINTENDENT NAME MIKE CRONAN		PLANT R.R. TANK CAR CLEANING		BUILDING NO. 4/01
FILLED OUT BY CRONAN / SCHULTZ			DATE 5/12/78	
JOB CLASSIFICATION		INDEX NUMBER		NO. OF EMPLOYEES IN CLASSIFICATION

MATERIALS OR PHYSICAL AGENTS	INDUSTRIAL HYGIENE GUIDE ppm or mg/m ³	* DEGREE OF EXPOSURE	** HAZARD RATING	DATA SHEET AVAILABLE
TANK CAR CONTAMINANTS:				
ANHYDROUS HCL	C 5PPM	II	4	
BUTADIENE (1,3)	1000 PPM	IV	3	
CARBON TET	S 10 PPM	IV	2	
CAUSTIC	C 2 MG ^{MG} /M ³	III	4	
CHLORINE	1 PPM	II	4	
CHLOROFORM	10 PPM	IV	2	
DICHLOROISOPROPYL ETHER	5 PPM	I	5	
2,3-DICHLOROPROPENE	(1 PPM)*	I	5	
ETHYLENE DICHLORIDE	50 PPM	I	5	
ETHYLENE OXIDE	50 PPM	III	4	
GLYCOL	ETHYLENE PROPYLENE 100 PPM	III	4	
METHYL CHLORIDE	50 PPM	II	3	
METHYLENE CHLORIDE	200 PPM	IV	2	
PERCHLOROETHYLENE	S 100 PPM	IV	2	
PROPYLENE	NOT TO CAUSE <18% O ₂	II	4	
PROPYLENE DICHLORIDE	75 PPM	I	5	
PROPYLENE OXIDE	100 PPM	II	4	
VINYL CHLORIDE	1 PPM	III	2	
MAPP		II	4	
WASH MATERIALS:				
WATER	—	IV	5	
DYNABRIGHT		II		
NOISE	85 dBA	IV	3	
STEAM / HEAT STRESS	—	III	4	
Leaving Time 1:10 PM				
DO 088828 CONFIDENTIAL				

* ESTIMATE , NOT FORMALLY APPROVED

See Industrial Hygiene Data Sheet.

CHEMICAL AND PHYSICAL AGENT INVENTORY

SUPERINTENDENT NAME		PLANT		BUILDING NO.	
Mike Cronan		R.R. Tank Car Cleaning		4101	
FILLED OUT BY			DATE		
Cronan/Schultz			5/12/78		
JOB CLASSIFICATION			INDEX NUMBER		NO. OF EMPLOYEES IN CLASSIFICATION
TANK CAR CLEANING LABORERS					10
MATERIALS OR PHYSICAL AGENTS		INDUSTRIAL HYGIENE GUIDE ppm or mg./m ³	DEGREE OF EXPOSURE	HAZARD RATING	DATA SHEET AVAILABLE
Tank Car Contaminants:			I → 5	5 → 1	
Anhydrous HCl		C 5 ppm	II	4	
Butadiene (1,3)		1000 ppm	IV	3 ✓	
Carbon Tet		S 10 ppm	IV	2 ✓	
Caustic		C 2 mg/m ³	III	4	
Chlorine		1 ppm	II	4	
Chloroform		10 ppm	IV	2 ✓	
Dichloroisopropyl ether		5 ppm	I	5	
2,3-Dichloropropene		(1 ppm)*	I	5	
Ethylene Dichloride		50 ppm	I	5	
Ethylene Oxide		50 ppm	III	4	
Glycol ethylene propylene		100 ppm	III	4	
Methyl Chloride		50 ppm	II	3 ✓	
Methylene Chloride		200 ppm	IV	2 ✓	
Perchloroethylene		S 100 ppm	IV	2 ✓	
Propylene		not to cause < 18% O ₂	II	4	
Propylene Dichloride		75 ppm	I	5	
Propylene Oxide		100 ppm	II	4	
Vinyl Chloride		1 ppm	III	2 ✓	
MAPP			II	4	
Wash Materials:					
Water		---	IV	5	
Dynabright			II		
Noise		85 dBA	IV	3 ✓	
Steam/Heat Stress		---	III	4	
DO 088829 CONFIDENTIAL					

* Estimate, not formally approved.

* See Industrial Hygiene Data Sheet.

*** To be filled in by Industrial Hygiene.

CHEMICAL AND PHYSICAL AGENT INVENTORY

SUPERINTENDENT NAME Mike Cronan		PLANT R.R. Tank Car Cleaning		BUILDING NO. 4101
FILLED OUT BY Cronan/Schultz			DATE 5/12/78	
JOB CLASSIFICATION TANK CAR CLEANING - LABORERS TANK CAR CLEANING SUPERVISOR		INDEX NUMBER		NO. OF EMPLOYEES IN CLASSIFICATION 10
MATERIALS OR PHYSICAL AGENTS	INDUSTRIAL HYGIENE GUIDE ppm or mg/m ³	* DEGREE OF EXPOSURE	** HAZARD RATING	DATA SHEET AVAILABLE
Tank Car Contaminants:				
Anhydrous HCl	C 5 ppm	II	4	
Butadiene (1,3)	1000 ppm	IV	3	
Carbon Tet	S 10 ppm	IV	2	
Caustic	C 2 mg/m ³	III	4	
Chlorine	1 ppm	II	4	
Chloroform	10 ppm	IV	2	
Dichloroisopropyl ether	5 ppm	I	5	
2,3-Dichloropropene	(1 ppm)*	I	5	
Ethylene Dichloride	50 ppm	I	5	
Ethylene Oxide	50 ppm	III	4	
Glycol ethylene propylene	100 ppm	III	4	
Methyl Chloride	50 ppm	II	3	
Methylene Chloride	200 ppm	IV	2	
Perchloroethylene	S 100 ppm	IV	2	
Propylene	not to cause < 18% O ₂	II	4	
Propylene Dichloride	75 ppm	I	5	
Propylene Oxide	100 ppm	II	4	
Vinyl Chloride	1 ppm	III	2	
MAPP		II	4	
Wash Materials:				
Water	---	IV	5	
Dynabright		II		
Noise	85 dBA	IV	3	
Steam/Heat Stress	---	III	4	
DO 088830 CONFIDENTIAL				

* Estimate, not formally approved.

* See Industrial Hygiene Data Sheet.

*** To be filled in by Industrial Hygiene.

[illegible]

DO 088831
CONFIDENTIAL

* To be filled in by Industrial Hygiene.

CHEMICAL AND PHYSICAL AGENT INVENTORY

[illegible]

DO 088832
CONFIDENTIAL

* See Industrial Hygiene Data Sheet.

. * * To be filled in by Industrial Hygiene.

[illegible]

DO 088833
CONFIDENTIAL

** To be filled in by Industrial Hygiene.

CHEMICAL AND PHYSICAL AGENT INVENTORY

SUPERINTENDENT NAME MIKE CRONAN / CHARLIE HENDERSON		PLANT R.R. / TANK CAR CLEANING		NOTIFICATION NO. 4101	
FILLED OUT BY HENDERSON / SCHULTZ			DATE 3/26/78		
JOB CLASSIFICATION SS, OS, SOT, OT, OTT, DAY SHIFT (END + TECH.) CONTRACT LABOR			INDEX NUMBER 1 N-Contract 1 H-Contract		NO. OF EMPLOYEES IN CLASSIFICATION

MATERIALS OR PHYSICAL AGENTS	INDUSTRIAL HYGIENE GUIDE ppm or mg/m ³	DEGREE OF EXPOSURE	HAZARD RATING	DATA SHEET 4 AVAILABLE
TANK CAR CONTAMINANTS:				
ANHYDROUS HCl	C 5 PPM	II	4	
BUTADIENE (1,3)	1000 PPM	IV	3	?
CARBON TET	S 10 PPM	II	2	✓
CAUSTIC	C 2 MG/M ³	III	4	
CHLORINE	1 PPM	II	4	
CHLOROFORM	10 PPM	IV	2	✓
2CE DICHLOROISOPROPYL ETHER	5 PPM	I	5	
2,3-DICHLOROPROPENE	1 PPM	I	5	
ETHYLENE DICHLORIDE	50 PPM	I	5	
ETHYLENE OXIDE	50 PPM	IV/III	→ 4	HISTORICAL OK
EPICHLOROHYDRIN	S 5 PPM	I	5	
GLYCOL	100 PPM	II	4	
METHYL CHLORIDE	50 PPM	II	3	✓
METHYLENE CHLORIDE	200 PPM	IV	2	✓
PERCHLOROETHYLENE	S 100 PPM	IV	2	✓
PROPYLENE	1 PPM (18% O ₂)	II	4	
PROPYLENE DICHLORIDE	75 PPM	I	5	
PROPYLENE OXIDE	100 PPM	II 3	→ 4	HISTORICAL OK
SULFURIC ACID	C 1 MG/M³	I	5	
1,2-DICHLOROPROPANE	1 PPM	I	5	
VINYL CHLORIDE	1 PPM	III	2	✓
WASH MATERIALS:				
WATER + PE DYNABRIGHT				
MAPP		II	4	
NOISE Ear Protection used 85 DBA		III	3	Done '78
STEAM / HEAT STRESS		II	4	

DO 088834
CONFIDENTIAL

* See Industrial Hygiene Data Sheet.

** To be filled in by Industrial Hygiene.

CHEMICAL AND PHYSICAL AGENT INVENTORY

SUPERINTENDENT NAME		PLANT	BUILDING NO.
MIKE CRONAN / CHARLIE HENDERSON		R.R. / TANK CAR CLEANING	4101
ILLED OUT BY		DATE	
HENDERSON / SCHULTZ		3 / 1978	
JOB CLASSIFICATION		INDEX NUMBER	NO. OF EMPLOYEES IN CLASSIFICATION
SS, OS, SOT, OT, OTT, DAY SHIFT (EDO + TECH.) CONTRACT LABOR		1 No Contact	1 High Hazard
MATERIALS OR PHYSICAL AGENTS	INDUSTRIAL HYGIENE GUIDE ppm or mg/m ³	DEGREE OF EXPOSURE	HAZARD RATING
TANK CAR CONTAMINANTS:			
ANHYDROUS HCl	C 5 PPM		
BUTADIENE (1,3)	1000 PPM		
CARBON TET	S 10 PPM		
CAUSTIC	C 2 MG/M ³		
CHLORINE	1 PPM		
CHLOROFORM	10 PPM		
DICHLOROISOPROPYL ETHER	—		
2,3-DICHLOROPROPENE	1 PPM		
ETHYLENE DICHLORIDE	50 PPM		
ETHYLENE OXIDE	50 PPM		
EPICHLOROHYDRIN	S 5 PPM		
GLYCOL	100 PPM		
METHYL CHLORIDE	50 PPM		
METHYLENE CHLORIDE	200 PPM		
PERCHLOROETHYLENE	S 100 PPM		
PROPYLENE	(>18% O ₂)		
PROPYLENE DICHLORIDE	75 PPM		
PROPYLENE OXIDE	100 PPM		
SULFURIC ACID	C 1 MG/M ³		
1,2,3-TRICHLOROPROPENE	1 PPM		
VINYL CHLORIDE	1 PPM		
WASH MATERIALS:			
WATER + ?			
KOH			
NaOH			
235			

DO 088835
CONFIDENTIAL

* See Industrial Hygiene Data Sheet.

** To be filled in by Industrial Hygiene.